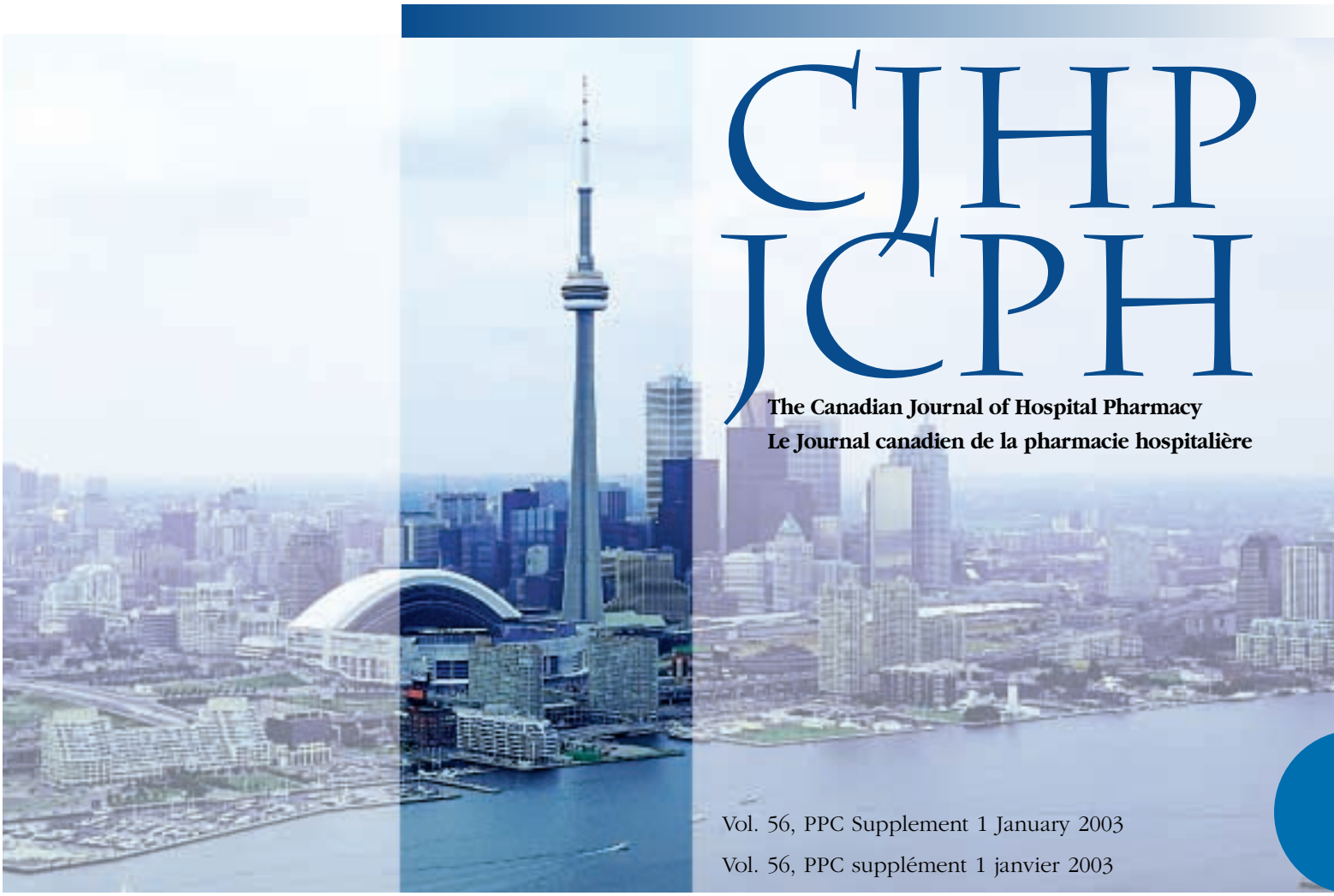

CJHP
JCPH

The Canadian Journal of Hospital Pharmacy
Le Journal canadien de la pharmacie hospitalière

Vol. 56, PPC Supplement 1 January 2003
Vol. 56, PPC supplément 1 janvier 2003

34th ANNUAL PROFESSIONAL PRACTICE CONFERENCE

34ième CONFÉRENCE ANNUELLE DE LA SCPH SUR LA PRATIQUE PROFESSIONNELLE

The Largest Pharmacy Conference in Canada!

FEBRUARY 1 - FEBRUARY 5, 2003

The Westin Harbour Castle, Toronto, Ontario

Canadian Society of Hospital Pharmacists
Société canadienne des pharmaciens d'hôpitaux

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Welcome Bienvenue

Dear Colleague:

On behalf of the Officers, Council and staff of the Canadian Society of Hospital Pharmacists, it is my pleasure to welcome you to CSHP's 34th Annual Professional Practice Conference.

2003 promises to be another phenomenal year. Over the last ten months, CSHP's Educational Services Committee has worked to assemble an impressive faculty of pharmacy specialists and develop a program of exceptional educational value.

This conference is designed to maximize your opportunities for professional development, networking and socializing with practitioners from across the country. It is our hope that you are able to take full advantage of the 2003 offerings – and enjoy yourself in the process.

At any time throughout the conference, the officers and staff of CSHP are available to you. Please let us know if we can answer any of your questions, address any of your concerns or be of assistance in any way. Be sure to take a few minutes and stop by the CSHP booth during the exhibits program and say hello.

We look forward to welcoming each of you to another spectacular conference.

Thank you for your ongoing support of CSHP.

Mike Gaucher

CSHP President

Cheres collègues,

Au nom de la direction, du Conseil et de tout le personnel de la Société canadienne des pharmaciens d'hôpitaux, nous sommes heureux de vous souhaiter la bienvenue à la 33e Conférence annuelle sur la pratique professionnelle de la SCPH.

L'année 2003 s'annonce comme une autre année formidable. En effet, au cours des douze derniers mois, le Comité des services éducatifs de la SCPH s'est affairé à rassembler un imposant corps de spécialistes en pharmacie et à élaborer un programme éducatif d'une valeur exceptionnelle.

Cette conférence est conçue pour maximiser les possibilités de vous développer sur le plan professionnel, d'établir des contacts et d'échanger avec d'autres praticiens provenant de tout le pays. Nous espérons que vous pourrez tirer pleinement profit des occasions que vous propose la Conférence de 2003 et que vous en retirerez également du plaisir.

Nous vous rappelons que dans le cours de cette Conférence, la direction et le personnel de la SCPH sont à votre entière disposition. Pour plus de facilité, nous sommes identifiés aux couleurs du ruban de la SCPH.

Encore une fois, nous sommes là pour répondre à toutes vos questions, discuter d'un sujet qui vous est important et vous prêter assistance, au besoin. Nous vous invitons aussi à prendre quelques minutes de votre temps pour venir visiter le kiosque de la SCPH et nous dire bonjour!

Nous sommes impatients de vous accueillir à une autre conférence exceptionnelle. Merci encore de votre appui continu à la SCPH.

Mike Gaucher

Président de la SCPH

2003 PPC at a Glance

REGISTRATION:

Saturday, February 1
3:00 p.m. – 5:00 p.m.
Sunday, February 2
7:30 a.m. – 5:00 p.m.
Monday, February 3
7:30 a.m. – 5:00 p.m.
Tuesday, February 4
7:30 a.m. – 5:00 p.m.
Wednesday, February 5
7:30 a.m. – 3:00 p.m.

EDUCATIONAL SESSIONS:

Saturday, February 1
Sunday, February 2
Monday, February 3
Tuesday, February 4
Wednesday, February 5

EXHIBITS:

Monday, February 3
10:00 a.m. – 3:00 p.m.
Tuesday, February 4
10:00 a.m. – 3:00 p.m.

POSTERS:

Sunday, February 2
Display:
10:00 a.m. – 3:00 p.m.
Presentation:
10:00 a.m. – 10:45 a.m.
Monday, February 3
New! Hand-held Device Poster Session
Display:
10:00 a.m. – 3:00 p.m.
Presentation:
1:45 p.m. – 3:00 p.m.
Tuesday, February 4
Display:
10:00 a.m. – 3:00 p.m.
Presentation:
1:45 p.m. – 3:00 p.m.
Wednesday, February 5
Display:
10:00 a.m. – 3:00 p.m.
Presentation:
10:45 a.m. – 11:00 a.m.

AWARDS:

Monday, February 3
Awards Luncheon
12:25 p.m. – 1:45 p.m.
Research and Education Foundation Fundraising Dinner
6:00 p.m. – 9:00 p.m.
Tuesday, February 4
Awards Luncheon
12:25 p.m. – 1:45 p.m.

EVENING EVENTS:

Saturday, February 1
Ontario Branch Curling Bonspiel
6:00 p.m.
Sunday, February 2
Career Opportunities
5:30 p.m. – 7:30 p.m.
Monday, February 3
Research and Education Foundation Fundraising Dinner
6:00 p.m. – 9:00 p.m.

CSHP EDUCATIONAL SERVICESCOMMITTEE/ LE COMITÉ DES SERVICES ÉDUCATIFS

Chairperson/Présidente

Heather Kertland, PharmD
St. Michael's Hospital,
Toronto, Ontario

Committee Members

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Mount Sinai Hospital,
Toronto, Ontario

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St. Joseph's Hospital,
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Toronto, Ontario

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University of Toronto,
Toronto, Ontario

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Faulding, a world player in the field of oncology, is consolidating its position as a result of its acquisition by Mayne. Faulding and Mayne are now one stronger force, and will take on the name Mayne.
Mayne Pharma (Canada) Inc. will continue to take pride in providing Canadian Health Professionals with dependable service and innovative solutions that meet their needs.
At Mayne we value our partnership with community and hospital pharmacists across the country. We will maintain the highest levels of customer satisfaction by offering our clients quality and cost-efficient pharmaceutical products.
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MEMBRES CONSEILLERS DE LA SCPH 2003

(At the time of printing)

Abbott Laboratories Limited

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Amgen Canada

Apotex / PACE Inc.

Aventis Pharma Canada

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Baxter Canada

Berlex Canada Inc.

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Procter & Gamble

Sabex 2002 Inc.

Sanofi-Synthelabo Canada Inc.

Schering Canada Inc.

Taro Pharmaceuticals Inc.

CSHP SPONSORS 2002/2003
COMMANDITAIRES DE LA SCPH 2002/2003

The following list reflects all CSHP sponsorship received from July 1, 2002 to time of printing

Diamond Sponsors
(contributions totaling $20, 000 or greater)

Apotex / PACE Inc.
AstraZeneca Canada Inc.
Janssen Ortho Inc.
Novopharm Limited
Pharmaceutical Partners of Canada

Platinum Sponsors
(contributions totaling $10,000 to $19,999)

Baxter Corporation
Bayer Inc.
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Pharmaceutical Group
Glaxo SmithKline
Novartis
Pharmacia Canada
Proctor & Gamble
Roche Canada
Sabex 2002 Inc.

Gold Sponsors
(contributions totaling $5,000 to $9,999)

Drug Intelligence
Genpharm

Silver Sponsors
(contributions totaling $2,500 - $4,999)

Eli Lilly Canada Inc.
Mayne Pharma (Canada) Inc.
(formerly FAULDING)
Pfizer

Bronze Sponsors ($1,000 to $2,499)

Alcan
Aventis
Baxa
DuPont Pharma
Keith Healthcare
Merck Frosst Canada & Co.
Pharmascience Inc.
Schering

Donor (up to $1,000)

Alaris Medical
CPDN
ICN Canada

MAJOR INITIATIVES 2002/2003
IMPORTANTES INITIATIVES 2002/2003

CSHP is pleased to thank the following companies for their sponsorship of specific CSHP programs, services and events. The dollar value of these initiatives is included in the calculation of sponsorship levels above.

Apotex

CHPRB Matching Program

Bristol-Myers Squibb Pharmaceutical Group
Sponsorship of the Infectious Diseases Pharmacy Specialty Network

Novopharm

Grant in Aid of Audiovisual support and general CSHP purposes

CSHP SPEAKER SPONSORSHIP 2002/2003
COMMANDITAIRES DES CONFÉRENCIERS DE LA SCPH 2002/2003

Aventis Pharma Canada
$1,000 to annually sponsor a renowned speaker for the CSHP AGM.

Eli Lilly Canada Inc.
$1,000 to annually sponsor an outstanding speaker for the CSHP AGM.

The world's leading manual unit-dose packaging system just got better.

Introducing one-year dating. And barcode-ready software.

For over 30 years, Medi-Dose has set the standard for easy-to-use, inexpensive, manual unit-dose packaging.

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Even though we've made the Medi-Dose system more valuable than ever, it's still very modestly priced.

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CSHP AWARDS 2002/2003 – CSHP'S HIGHEST HONOURS

MEMBER RECOGNITION PROGRAM

Apotex/PACE
Management Issues in Pharmaceutical Care
• $1,500

Baxa Canada
Innovative Practitioner
• $1,500

Baxter Corporation
Innovation in Safe Medicine Practices
• $1,000

DuPont Pharma
Oral Anticoagulant Therapy
• $1,000

Mayne
Oncology
• $1,500

GlaxoSmithKline Inc.
Pharmaceutical Care
• $1,500
Pharmacy Administration
• $1,500

Hoffmann–La Roche Ltd.
Specialties in Pharmacy Practice
• $1,500

Merck Frosst Canada & Co.
Rational Drug Use
• $1,500

Novartis Pharma Canada Inc.
Pharmacoeconomics
• $1,500

Novopharm Ltd.
New Programs in Patient Counselling
• $1,500

Pfizer Canada Inc.
Long Term Health Care
•$2,000

Pharmascience Inc.
Patient Care Enhancement
• $1,000

Sabex Inc.
Palliative Care
• $1,500

Schering Canada Inc.
Pharmacokinetic or Hospital Pharmacy-Industry Relations Research
• $1,000

CANADIAN SOCIETY OF HOSPITAL PHARMACISTS ORTHO DISTINGUISHED SERVICE AWARD

(presented by Janssen-Ortho Inc.) $1,500

Outstanding Achievement in Hospital Pharmacy Practice
(Individuals are nominated by their peers)

Past Winners

1967 Michael J.V. Naylor
1968 Jacqueline McCarthy
1969 Isabel E. Stauffer
1970 Gordon Brown
1971 Paule Benfante
1972 Edwin J. Smith
1973 Leonard Gibson
1974 Anne O'Toole
1975 Muriel Hale
1976 Orest Buchko
1977 Phyllis Yagi
1978 Douglas J. Stewart
1979 Jack L. Summers
1980 Betty C. Riddell
1981 Brian A. Dinel
1982 J. Glen Moir
1983 Mary T. Gannon
1984 Sister Grace Sauvé
1985 Donna M. Shaw
1986 William R. Foltas
1987 Jack Dancey
1988 Bruce R. Schnell
1989 Alan Samuelson
1990 Reta Fowler
1991 C. Brian Tuttle
1992 William Wilson
1993 Pauline Beaulac
1994 William McLean
1995 James L. Mann
1996 Kevin Hall
1997 Rosemary Bacovsky
1998 Scott Walker
1999 Bonnie Salsman
2000 James Blackburn
2001 Charlie Bayliff
2002 Glen Brown

ISABEL E. STAUFFER MERITORIOUS SERVICE AWARD

(presented by Pharmaceutical Partners of Canada) $1,500

Prolonged Service and Involvement in CSHP
(Individuals are nominated by their peers)

Past Winners

1986 Herbert A. Dixon
1986 A.W. Stanley Garvin
1987 Alan Samuelson
1988 D. Bryce Thompson
1989 Fred Rumpel
1990 Doris A. Thompson
1991 Louanne Twaites
1991 David Windross
1992 Cecilia Laskoski
1992 John Iazzeta
1994 Rosemary Bacovsky
1994 Roy A. Steeves
1995 Donna Pipa
1995 Kristina Wichman
1996 Dennis Leith
1996 Robert S. Nakagawa
1998 Larry Legare
1998 Emily Somers
1999 Kenneth McGregor
1999 Linda I. Poloway
2000 Kelly Babcock
2001 Margaret Colquhoun

In addition, each of the sponsoring corporations provides $1,400 for a CSHP travel fund. This fund ensures that all recipients are able to attend the Professional Practice Conference in Toronto to accept their award in person.

Thank you to all of our sponsors!

Taking Flight

Ticlopidine

Nefazodone

Levodopa and Carbidopa

Gabapentin

Fluconazole

Novopharm has recently launched several new products including Novo-Gabapentin and Novo-Nefazodone-5HT2. These launches are just the first in a line of new products resulting from both our Canadian R&D resources and access to Teva's extensive pipeline of new molecules. You can look forward to more new products from us in the future.

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2002/2003 AWARDS PROGRAM

SINCERE APPRECIATION IS EXTENDED TO THE AWARDS COMMITTEE:

Chair
Susan Alderson

Committee Members
Rosemary Zvonar
Carolyn Boudreau
Lisa Dolovich
Christine Wynne
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AND TO OUR 2002/2003 AWARD APPRAISERS

Susan Alderson
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Christine Sudac-Wallace
Anne-Marie Whelan
Kerry Wilbur
Christine Wynne
Sharon Yamashita
Peter Zed

A Little About Toronto

Toronto is a centre of banking, publishing, commerce and world theatre; a city, above all, of the future. The shining towers of glass and steel rise above renovated vaudeville houses, and brand new theatres house a feast of hit shows. There are marvelous museums, a huge atrium, underground shopping malls, lively nightlife, and 5,000 restaurants serving the cuisine of 80 different ethnic groups. It's hard to get more cosmopolitan than that!

HOW TO GET TO PPC?

Air Canada has been appointed the official airline for CSHP's Professional Practice Conference (PPC) 2003. Please quote Reference Number CV454796 when making your travel arrangements.

As a PPC 2003 registrant, you will be offered the best available fare on all flights booked through Air Canada Convention Sales. Be sure to tell your travel agent to refer to CV454796 in reference to your ticket and you could receive up to 50% off. Remember - YOU will continue to accumulate your travel plan points while assisting CSHP.

You can book your flight in three convenient ways:

1. Through UNIGLOBE PREMIER TRAVEL at 1-800-267-9372 or
2. Directly through Air Canada Convention Sales at 1-800-361-7585 or
3. Through your travel agent quoting the above Reference Number.

By ensuring CV454796 appears on your ticket, you help support your organization - in advance, we thank you.

WHERE TO STAY FOR PPC? WESTIN HARBOUR CASTLE

CSHP is pleased to offer a special room rate of $130.00 - single or double occupancy - at the Westin Harbour Castle. All CSHP official conference related meetings will take place at this property. The conference rate of $130.00 is guaranteed until **January 10, 2003**. Don't miss out - make your reservation early. You may make your reservations by telephoning the hotel directly at 416-869-1600. When doing so, please remember to make reference to CSHP PPC 2003 for your conference rate.

CURLING ANYONE?

The Ontario Branch CSHP invites you to the 2nd Professional Practice Conference Curling Bonspiel.

Come out and meet friends and colleagues from across the country and have some FUN.

Register EARLY as this event is limited to 80 people.
No experience is required.
Bus transportation will be provided from the hotel at 6:00 p.m.

$25.00 PER PERSON

INCLUDES:
DINNER, ICE RENTAL, EQUIPMENT AND PRIZES!

SATURDAY, FEBRUARY 1, 2003

HIGH PARK CURLING CLUB, ONTARIO

6:00 P.M.

Name: Hospital:

Tel Number: Fax Number:

Email address:

Curling Experience: YES ❑ NO ❑ Position:

Are you willing to skip a team: YES ❑ NO ❑

Would you be interested in a 30 minute curling clinic before the game: YES ❑ NO ❑

Food allergies: YES ❑ NO ❑ please specify:

Cost: $25.00 per person includes dinner, ice rental, equipment and prizes.

❑ I am mailing a cheque payable to the Canadian Society of Hospital Pharmacists, Ontario Branch (OB-SHP).

Please charge my VISA ❑ or MASTERCARD ❑

Card number:

Expiry date:

Signature of cardholder:

Please send your registration and payment to:
Executive Assistant
CSHP National Office - 1145 Hunt Club Rd, Suite 350, Ottawa, ON K1V 0Y3
FAX: 613.736.5660

CONTINUING EDUCATION CREDITS / CRÉDITS D'ÉDUCATION PERMANENTE

The Educational Services Committee

The Educational Services Committee (ESC) of CSHP has been working for approximately 12 months on the content and format of PPC 2003. They also work on the Annual General Meeting, in conjunction with the local host committee and the national office. The ESC is comprised of a core committee of 10 hospital pharmacists as well as 8 corresponding members from the CSHP branches.

Goals and Objectives for the 2003 PPC Program

Goal:

To provide registrants with quality educational sessions.

Objectives:

- to provide registrants with educational sessions which inform, educate and motivate clinical practitioners and managers
- to provide leadership in hospital pharmacy practice by presenting sessions on innovative pharmacists' roles, pharmacy practice and pharmacy programs
- to support all practitioners in "Striving for Excellence" by presenting sessions related to Vision Statement
- to promote life-long learning skills through active participation in problem-based workshops
- to provide registrants with networking and sharing opportunities through the exhibits program, poster sessions and round table discussions
- to promote excellence in pharmacy practice through oral presentations or original work and award winning projects
- to provide an opportunity to Pharmacy Specialty Networks to meet

But et objectifs du programme de la CPP et séances éducatives

But:

offrir des séances éducatives de qualité aux participants.

Objectifs :

- offrir aux participants des séances éducatives qui seront informatives et formatrices et qui motiveront les cliniciens et les gestionnaires
- former les leaders en pharmacie hospitalière par le biais des présentations sure le rôle du pharmacien, l'exercice de la pharmacie et les programmes de pharmacie novateurs
- appuyer tous les pharmaciens exerçant activement leur profession a jouer un rôle prépondérant en présentant des séances inspirées de l'énoncé de la Vision 2003
- favoriser l'éducation continue par le biais de la participation active des pharmaciens a des ateliers de résolution de problèmes
- donner aux participants la possibilité d'établir des réseaux professionnels et d'échange par le truchement de programmes d'exposition, et de séances d'affichage
- donner la possibilité aux réseaux de pratique spécialisée de se rencontrer.

UPCOMING EVENTS

AGM 2003
St. John's Newfoundland

PPC 2004
February 2004

Sheraton Hotel, Toronto, Ontario

AGM 2004
Edmonton, Alberta

AGM 2005
Quebec

AGM 2006
Ottawa, Ontario

For further information, please contact: Marlo Palko, CSHP National Office, telephone: 613.736.9733 (ext. 222), Fax: 613.736.5660, or e-mail: mpalko@cshp.ca

PPC REGISTRATION FORM: TORONTO, FEBRUARY 2-5, 2003

Please complete the following form and send to CSHP by Friday, Jan. 17, 2003. After this date, we request that you bring your registration form and payment with you to the conference. Please note early bird date of Dec. 20, 2002.

We are unable to process faxed registrations without payment by Visa or MasterCard.

Registration/Name Tag Information, Please print clearly

CSHP Membership Number (printed on address label):

First Name: Initial: Last Name:

Title/Position:

Hospital/Organization:

Preferred Mailing Address: Business ❑ Home ❑

City: State/Province: Postal Code:

Telephone (W): Fax: Telephone (H):

Email (to ensure membership database is up-to-update):

Membership Information, Please check all that apply

❑ Hospital Pharmacist ❑ Pharmacy Student ❑ Exhibitor
❑ Community Pharmacist ❑ Resident ❑ Press
❑ Pharmacy technician ❑ First-time PPC attendee ❑ Other

Shared Registration, Please indicate name of registrants & day(s) attending

Name(s)/Position(s) **Day(s) attending**

PPC Fees: Full Program and One-Day Programs, Includes all educational sessions, exhibits and luncheons

	Full Program		Daily Rates	
	On/Before Dec 20/02	*After/on site*	*On/Before Dec 20/02*	*After/on site*
CSHP Member	$617.00	$699.30	$215.30	$242.00
Non-member	$776.80	$860.30	$271.00	$297.60
Shared Member	$707.80	$804.60	n/a	n/a
Non-member	$864.00	$964.30	n/a	n/a
Student Member	$223.80	$248.00	$55.60	$62.00
Non-member	$279.50	$305.00	$70.20	$76.20
AIT Member	$223.80	$248.00	$76.20	$82.30

If you have a serious food allergy, please specify:

Emergency Contact:

Workshop Options, These workshops are optional. Seating is limited. See program for workshop # and topics.

Afternoon Sessions

Sunday February 2	1 ❑	2 ❑	3 ❑	4 ❑
Monday February 3	1 ❑	2 ❑	3 ❑	4 ❑
Tuesday February 4	1 ❑	2 ❑	3 ❑	4 ❑
Wednesday February 5	1 ❑	2 ❑	3 ❑	4 ❑

Please indicate order of preference (1-4) in the boxes to the left. While every effort is made to accommodate first choices, in the event of a full session we will proceed to assign you to your next indicated preference.

Applicable Registration Fee: $_____

Add 7% GST (GST # R106866940): $_____

TOTAL ENCLOSED: **$**_____

❑ I am enclosing a cheque payable to the Canadian Society of Hospital Pharmacists (CSHP).

Please charge my ❑ VISA or ❑ MASTERCARD number:

Expiry Date: Signature of Cardholder:

PPC REGISTRATION AND FEE INFORMATION

- Fees are payable to the Canadian Society of Hospital Pharmacists by cheque, VISA or MasterCard and MUST accompany this form. All fees are subject to 7% GST.
- CSHP accepts faxed registrations for those wishing to pay by credit card (in this case, please do not mail original form). To qualify for the early bird fees, registrations must be post-marked or faxed (with payment) on or before
  December 20, 2002. Cheques post-dated after this date will not be eligible for the early bird fee.
- PPC fees include CSHP awards program, luncheons on Monday and Tuesday, and all required course materials.
- The Research & Education Foundation Awards Dinner will be held on Monday, February 3, 2003.
- Career/Recruitment Evening will again be held on Sunday, February 2, 2003.
- Students are defined as undergraduate students. Graduate student members (including Pharm.D.) must register using the Active-In-Training fees. Non-members must register at the non-member fee.
- Poster presenters attending sessions other than their own will be charged the applicable daily fee. Early bird fees will apply to all accepted poster applicants.
- On site registration is available.

Shared Registration

- An institution may purchase a 4-day registration and use it for one individual ONLY per day. There are no shared registrations for students or residents.
- To qualify for the member rate, ALL of the individuals listed must be current CSHP members.
- The name of each registrant must be indicated on the application form (by day/s attending) and must be accompanied by payment in full.
- Individual name tags and on-site registration kits will be provided for each registrant. Tickets for luncheons will be included by day.

Cancellation Policy

Registrations may be cancelled in writing without penalty up to January 6, 2003. Late cancellations will be assessed an administration fee of $50.00. No refunds will be made after January 13, 2003. Individuals who wish to designate an alternate registrant for one or more of their days must first upgrade to a Shared Registration. *Please note: There will be a $10.00 administration fee to transfer registrations.*

Return registration and direct inquiries to:

Marlo Palko, PPC 2003 Event Coordinator
Canadian Society of Hospital Pharmacists, 1145 Hunt Club Road, Suite 350, Ottawa, ON K1V 0Y3
Telephone: (613) 736-9733 ext 222 • Fax: (613) 736-5660 • E-mail: mpalko@cshp.ca

ADVERTISERS' INDEX

Saturday, February 1st – samedi le 1 février

15:00 – 17:00	***Registration/Inscription***	Frontenac Foyer
18:00	***Ontario Branch Evening Social Event: Curling Bonspiel*** (members to meet buses at hotel lobby)	High Park Curling Club

Sunday, February 2 -dimanche le 2 février

07:30 – 17:00	***Registration/Inscription***	Frontenac Foyer
08:45 – 09:00	***Opening Remarks***	Frontenac Ballroom
09:00 – 10:00	***The Care Gap: What is it? Why Pursue It?*** Terrence Montaque, M.D., FRCP Merck Frosst Canada Kirkland, QC	Frontenac Ballroom
10:00 – 10:45	***Break/Poster Session/Pause/Séance d'affichage***	Frontenac Foyer
10:45 – 11:30	***Concurrent Sessions***	
	1) Improving the Exchange of Therapeutic Information with Patients Lisa Dolovich, BScPhm, PharmD, MSc Centre for Evaluation of Medicines Hamilton, ON	Pier 4/5
	2) Nouvelles options pour le traitement de nos patients souffrant de diabète de type 2 Diane Brideau-Laughlin, BSc(Pharm) Régie régionale de santé du sud-est Moncton, NB	Pier 2/3
	3) Hospital Pharmacists Can Take Charge in Making Medication Use Safer David U, MScPhm ISMP Canada Toronto, ON	Queen's Quay
11:35 – 12:20	***Concurrent Sessions***	
	1) Medication Error Prevention in a Pediatric Population Brian Beven, B.Sc.Phm. The Hospital for Sick Children Toronto, ON	
	2) Lookout Fungi. Here Come the New Antifungals Barrie McTaggart, BSc Phm McMaster University Medical Centre Hamilton, ON	Pier 2/3
	3) Medical Myths	Pier 4/5
	a) Increased Serum Creatinine is a Contraindication for Ace Inhibitors Lori MacCallum, PharmD St. Michael's Hospital Toronto, ON	
	b) Glyburide 10mg BID is the Most Cost-Effective Dose Bill Cornish, BSc.Phm. Sunnybrook and Women's College HSC Toronto, ON	

c) Demerol is the only Analgesic for Biliary Colic
Andrew Wyllie, PharmD
Mount Sinai Hospital
Toronto, ON

d) Quinolones Should Not be used in Children
Kathy Griffiths, BSP
The Hospital for Sick Children
Toronto, ON

12:20 – 13:50 ***Lunch/ Satellite Symposia (luncheon included)***

Using the Right Agent First — Harbour A
hosted by Bayer Inc.

Thrombosis in Oncology/New Developments — Harbour B
hosted by Pharmacia Canada

Strategies for Safe Medication Practices in Drug Preparation and Delivery — Harbour C
hosted by Baxter Corporation

Preview of New Guidelines in the Management of Diabetic Nephropathy — Regatta
hosted by Renal Pharmacists' Network

14:00 – 14:50 ***Caring in Our Multicultural Society: Issues and Challenges*** — Frontenac Ballroom
Ruth Lee, RN, PhD
Hamilton Health Sciences Corporation
Toronto, ON

15:00 – 17:00 ***Workshops***

1) Evaluating the CBC: Focus on Anemia
Lori Wazny, B.Sc. (Pharm), Pharm.D., CDE
London Health Sciences Centre
London, ON

2) Seamless Care: Making it Work — Pier 4/5
Judy Schoen, B.Sc.Pharm, MBA
Jennifer Lowerison, B.Sc.(Pharm), PharmD
Calgary Health Region
Calgary, AB

3) Ensuring a Safe Medication Experience — Queen's Quay
Donna M. M. Woloschuk, PharmD, CACE, FCSHP, AGDDE(T)
Winnipeg Regional Health Authority
Winnipeg, MB

4) The Role of the Pharmacist in Acute Pain Management — Pier 2/3
Anil Patel, B.Sc.(Pharm), B.Sc.(Micro.)
Ottawa Hospital-Civic Campus
Ottawa, ON

15:00 – 17:00 ***Critical Care PSN*** — Harbour A

Sedation in the ICU – What works?
Lisa Burry, PharmD
Mount Sinai Hospital
Toronto, ON

	Electrolyte Replacement Protocols – What works? Sharon Yamashita, PharmD, FCSHP Sunnybrook & Women's College HSC Toronto, ON	
	Group Discussion	
17:30 – 19:30	***Career Opportunities Evening***	Harbour B/C
Monday, February 3 - lundi le 3 février		
06:15 – 08:15	***Satellite Symposia (breakfast included)***	
	Pharmacists' Primer on Blood Transfusions, ADR/Drug Alternatives hosted by Ortho Biotech	Harbour A
	Postoperative Nausea and Vomiting: Current Strategies for Identifying Patientsand Risk Selecting Appropriate Therapies hosted by GlaxoSmithKline	Harbour B
07:30 – 17:00	***Registration/Inscription***	Frontenac Foyer
08:30 – 09:30	***A Health Care Worker's Perspective on Being a Patient*** Courtney Maguire, RRT/RRCP Mount Sinai Hospital Toronto, ON	Frontenac Ballroom
09:30 – 10:15	***Ontario's Universal Influenza Vaccination Program-A Good Thing or a Bad Thing?*** Allison McGeer, MSc, MD, FRCPC Mount Sinai Hospital Toronto, ON	Frontenac Ballroom
10:15 – 10:45	***Break/Exhibits***	Metropolitan Ballroom
10:45 – 11:30	***Concurrent Sessions***	Pier 4/5
	1) Updates for Travellers Jay S. Keystone, MD, FRCPC Toronto General Hospital Toronto, ON	
	2) To Have and To Hold: Retention Strategies at the University Health Network Emily Lap Sum Musing , B.Sc.Phm. University Health Network Toronto, ON	Queen's Quay
	3) Academic Detailing – Initiatives, Challenges and Opportunities Anne Nguyen, BScPhm, PharmD North Shore Health Region North Vancouver, BC	Pier 2/3
11:40 – 12:25	***Concurrent Sessions***	
	1) Oral Presentations	Queen's Quay 1
	2) Oral Presentations	Queen's Quay 2

Round Tables

a) Surgical Prophylaxis — Pier 2/3
Rosemary Tanzini, BScPhm
St. Michael's Hospital
Toronto, ON

b) Confidentiality Issues in the Electronic World — Pier 2/3
Winnie Seto, Pharm D
Angela Trope, MScPhm
The Hospital for Sick Children
Toronto, ON

c) Immunization in Pediatrics — Pier 4/5
Allison Dekker, BSP
The Hospital for Sick Children
Toronto, ON

d) Accessing Restricted Drugs on Provincial Formularies — Pier 4/5
Fran Paradiso-Hardy, BScPharm, MSc, FCSHP
Sunnybrook and Women's College HSC
Toronto, ON

12:25 – 13:45 ***Awards Luncheon/Déjeuner de remise des prix*** — Harbour Ballroom

13:45 – 15:00 ***Exhibit Time/Hand Held Device Poster Session*** — Metropolitan Ballroom

15:00 – 17:00 ***Workshops***

1) Evaluating the CBC: Focus on Anemia
Lori Wazny, B.Sc. (Pharm), Pharm.D., CDE
London Health Sciences Centre
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2) Seamless Care: Making it Work — Pier 4/5
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4) The Role of the Pharmacist in Acute Pain Management — Pier 2/3
Anil Patel, B.Sc.(Pharm), B.Sc.(Micro.)
Ottawa Hospital-Civic Campus
Ottawa, ON

15:00 – 17:00 ***PSN Session – ID***

West Nile Virus Infection: An Update — Regatta
Andrew E. Simor, MD, FRCPC
Sunnybrook and Women's College HSC
Toronto, ON

Aspiration Pneumonitis: When and How to Treat
Mike Tierney, B.Sc.Phm., M.Sc.
The Ottawa Hospital
Ottawa, ON

18:00 – 21:00 ***Research and Education Foundation Fundraising Dinner*** Harbour Ballroom

Tuesday, February 4 - mardi le 4 février

06:15 – 08:15 ***Satellite Symposia (breakfast included)***

What's New in Hyperlipidemia? Harbour A
hosted by AstraZeneca Canada Inc.

Advances in Immune Suppression - The U.S. Experience Harbour B
hosted by Novartis Pharmaceutical

07:30 – 17:00 ***Registration/Inscription*** Frontenac Foyer

08:30 –09:30 ***Atrial Arrhythmias and their Management*** Frontenac Ballroom
Heather Kertland, PharmD
St. Michael's Hospital and University of Toronto
Toronto, ON

09:30 – 10:15 ***Evaluating the Appropriate Use of Drugs*** Frontenac Ballroom
Cynthia Jackevicius, B.Sc.Phm., M.Sc, FCSHP
University Health Network
Toronto, ON

10:15 – 10:45 ***Break/Exhibits/Kiosques/Séance d'affichage*** Metropolitan Ballroom

10:45 – 11:30 ***Concurrent Session*** Pier 4/5

1) Caring for a Patient with Endocarditis
Don Kuntz, BSP
Regina Health District
Regina, SK

2) A Clinical Pharmacist's Guide to Career Development Pier 2/3
Gary Wong, BScPharm
Toronto General Hospital
Toronto, ON

3) Web Resources for Cancer - Online Drug Information for Healthcare Professionals Queen's Quay
Annie Ngan, BScPhm
Cancer Care Ontario
Toronto, ON

11:40 – 12:25 ***Concurrent Sessions***

1) Practical Implications of Using Glycoprotein IIb/IIIa Inhibitors Pier 4/5
Rubina Sunderji, B.Sc.(Pharm), Pharm.D., FCSHP
Vancouver General Hospital
Vancouver, BC

	2) New Medications in Oncology	Queen's Quay
	Oxaliplatin Swasti Bhajan Mathur, BScPhm Rouge Valley Health System – Centenary Health Centre Site Toronto, ON	
	Zoledronate – Is it Just Another Bisphosphonate? Biljana Spirovski, B.Sc., (Pharm) Humber River Regional Hospital Toronto, ON	
	Imatinib Mesylate (Gleevec™) Winnie Ho, BScPhm The Scarborough Hospital – General Division Toronto, ON	
	3) Appropriate Use of IV Proton Pump Inhibitors Anisha Lakhani, Bsc(Pharm), PharmD Fraser Health Authority Vancouver, BC	Pier 2/3
12:25 – 13:45	***Award Luncheon/Déjeuner de remise des prix***	Harbour Ballroom
13:45 – 15:00	***Exhibits/Poster Session/Kiosques/Séance d'affichage***	Metropolitan Ballroom
15:00 –17:00	***Workshops***	
	1) Anticoagulation Management: Administrative and Clinical Operations Tammy J. Bungard, BSP, PharmD Division of Cardiology, University of Alberta Edmonton, AB	Pier 2/3
	2) Linda's Journey: A Pharmacist's Primer on Breast Cancer Robin K. O'Brien, BSc, BSc(Pharm) PharmD, BCOP BC Cancer Agency Vancouver, BC	Queen's Quay
	3) A Practical Approach to Lab Abnormalities Sharon Yamashita, Pharm.D. FCSHP Sunnybrook and Women's College HSC Toronto, ON	Pier 4/5
	4) Antimicrobial Pharmacodynamics: Just all Smoke and Mirrors? Richard S. Slavik, B.Sc.(Pharm.), Pharm.D. Vancouver Hospital and Health Sciences Centre Vancouver, BC	
15:00 – 17:00	***PSN Session – Cardiology***	Harbour A
	1) What's New in Cardilolgy and ID? Antibiotics for ACS Fawziah Marra, BSc(Pharm), PharmD University of BC and BC Centre for Disease Control Vancouver, BC	
	2) Tips From the Cath Lab Uchenwa Iroaga Genus, BScPhm University Health Network Toronto, ON	

3) An Ounce of Prevention: The Dream Wave Studies
Wendy Leong, PharmD, BCPS, MBA
Burnaby, Research & UBC
Vancouver, BC

4) Tips for CHF Management
Swasti Bhajan Mathur, BScPhm
Rouge Valley Health System
Toronto, ON

17:00 – 19:00 ***Satellite Symposium (dinner included)***

Women Health & Osteoporosis — Harbour B
hosted by Proctor & Gamble

Wednesday, February 5 - mercredi le 5 février

07:30 – 17:00 ***Registration/Inscription*** — Frontenac Foyer

08:45 – 10:15 ***Hey, What About ME?!*** — Frontenac Ballroom
Vivian L. Quiring, BScPharm
Vivian Quiring and Associates Inc.
Toronto, ON

10:15 – 11:00 ***Break/Posters/Pause/Scéance d'affichage*** — Frontenac Foyer

11:00 – 11:45 ***Concurrent Sessions***

1) Pharmacists and Nurse Practitioners: A Partnership that Works — Queen's Quay
Kori Leblanc, BScPhm and Julie Kim, RN, MN/ACNP
St. Michael's Hospital
Toronto, ON

2) Practical Considerations for Establishing and Maintaining a Pharmacy Consulting Business — Pier 4/5
Donna Wheeler-Usher, BScPharm, MSPharm
Pharmacy Consultant
Halifax, NS

3) Initiating Research — Pier 2/3
Scott Walker, MSc.Phm., FCSHP
Sunnybrook and Women's College HSC
Toronto, ON

11:50 – 12:35 ***Concurrent Session***

1) Oral Presentations — Bay Room

2) Oral Presentations — Queen's Quay 1

3) Oral Presentations — Queen's Quay 2

4) Round Tables

a) How to Design a Web Page — Pier 2/3
Mohammad Zuberi
Toronto General Hospital
Toronto, ON

b) Practice Based Research Opportunities — Pier 2/3
Kirsten Woodend, MSc, PhD
Canadian Pharmacists Association
Ottawa, ON

c) Policies Surrounding Complementary Medicines — Pier 4/5
Robin K. O'Brien, PharmD, BCOP
BC Cancer Agency
Vancouver, BC

d) Standardizing Patient Education Material — Pier 4/5
Christine Papoushek, PharmD
Derek Jorgenson, PharmD
Toronto Western Hospital
Toronto, ON

12:35 – 14:15 ***Lunch – Satellite Symposia***

Emerging Cardiovascular Evidence with Angiotensin II Antagonists: A Paradigm Shift — Harbour B
hosted by Merck Frosst Canada Limited

New Antithrombotics for Venous Thromboembolism: A Debate — Harbour C
hosted by AstraZeneca Canada Inc.

14:30 – 15:00 ***Recent Clinical Trials – Women's Health Initiative-Point-Counterpart*** — Frontenac Ballroom
Tom Brown, PharmD
University of Toronto, Faculty of Pharmacy
Sunnybrook and Women's College HSC
Toronto, ON

15:00 –17:00 ***Workshops***

1) Anticoagulation Management: Administrative and Clinical Operations — Harbour A
Tammy J. Bungard, BSP, PharmD
Division of Cardiology, University of Alberta
Edmonton, AB

2) Linda's Journey: A Pharmacist's Primer on Breast Cancer — Queen's Quay
Robin K. O'Brien, BSc, BSc(Pharm) PharmD, BCOP
BC Cancer Agency
Vancouver, BC

3) A Practical Approach to Lab Abnormalities — Pier 4/5
Sharon Yamashita, PharmD FCSHP
Sunnybrook and Women's College HSC
Toronto, ON

4) Antimicrobial Pharmacodynamics: Just all Smoke and Mirrors? — Pier 2/3
Richard S. Slavik, B.Sc.(Pharm.), Pharm.D.
Vancouver Hospital and Health Sciences Centre
Vancouver, BC

17:00 ***Close of the 34th Professional Practice Conference***

Sunday, February 2 - dimanche le 2 février

IMPROVING THE EXCHANGE OF THERAPEUTIC INFORMATION WITH PATIENTS

Lisa Dolovich BScPhm PharmD MSc, Centre for Evaluation of Medicines, Hamilton, ON

Goals and Objectives:

The goal of this session is to discuss the evidence related to the delivery of therapeutic information to patients. The objectives of this session are to describe the results of a systematic overview that addresses aspects of therapeutic information exchange with patients including information needs, format, and content and to discuss how to better meet the therapeutic information needs of patients.

The delivery of therapeutic information to patients is an essential component of pharmacist practice. A systematic overview using rigorous methodology was carried out to help better understand how to improve the exchange of therapeutic information with patients. Over 3000 articles were reviewed. The overview revealed (selected highlights provided) that patients want more information (i.e. more depth and more breadth) than they are getting from physicians, pharmacists, or other sources. Patients especially want risk and side effect information and information about treatment options. Numerous barriers exist that hinder optimal therapeutic information exchange including: communication breakdowns between patients and physicians, patients being unsure about what or how to ask about information, physicians omitting advice, patient not being aware they needed to know information, not providing culturally relevant information, the lack of time during physician visit, low literacy, and finding incorrect or conflicting information. The way visual, numerical, and qualitative data are displayed makes a difference in how patients interpret information and make decisions. Incorporating patients individualized information can increase knowledge, reduce decisional conflict, change decisions, improve expectations, improve clinical endpoints, improve satisfaction, and have a variable effect on health outcomes. A framework and examples of individualized therapeutic information delivery will be provided.

Self-assessment questions:

How does the content of therapeutic information affect drug related decision making by patients?

How can written therapeutic information be improved to help improve patient knowledge, adherence, and decision-making?

NOUVELLES OPTIONS POUR LE TRAITEMENT DES NOS PATIENTS SOUFFRANT DE DIABETE DE TYPE 2.

Diane Brideau-Laughlin, BSc(Pharm), Régie régionale de santé du sud-est, Moncton NB

Les résultats du Diabetes Control and Complications Trial et du United Kingdom Prospective Diabetes Study ont confirmé le lien entre une hyperglycémie et les complications associées avec le diabète du type 1 et du type 2 respectivement. Pour chaque pourcentage de diminution du niveau de l'hemoglobine A1c il y a de 30 à 35 pourcent de réduction des complications microvasculaires du diabète. Le traitement intensif du diabète a pour buts: une quasi normalisation de la glycémie, la prévention de l'hypoglycémie, un mode de vie flexible, un choix alimentaire flexible, une réduction des risques cardiovasculaires et le maintain à long terme d'une thérapie abordable.

Le diabète du type 2 est une maladie complexe. Même d'un point de vue simpliste, sa pathophysiologie inclue une résistance à l'insuline et une sécrétion d'insuline diminuée. Plusieurs nouvelles options sont maintenant disponibles pour le traitement du diabète du type 1 et du type 2. S'ajoutent à notre liste des insulines à effet ultra-rapide ainsi que des ajouts parmis les sulfonylurées, les thiazolidinediones et les méglitinides.

Cette présentation a comme objectif d'aider le pharmacien à mieux comprendre les charactéristiques du patient avec un diabète du type 2 chez qui ces options seraient considérées supérieures à celles déjà connues ainsi que le monitoring nécessaire.

BUTS DE LA PRÉSENTATION

1. Différencier le mode d'action des nouveaux agents antidiabétiques oraux tout en identifiant les caractéristiques des patients cibles.
2. Identifier les problèmes reliés à la pharmacothérapie uniques à ces nouveaux agents et le monitoring qui sera nécessaire afin d'obtenir la réponse clinique désirée.

QUESTIONS D'AUTO-ÉVALUATION

1. Comment les nouveaux agents antidiabétiques oraux diffèrent-ils des anciennes sulfonylurées et de la metformine?
2. Ces nouveaux agents ont-ils réellement une place dans le traitement du diabète du type 2?
3. Les problèmes reliés à la pharmacothérapie seront-ils différents de ceux associés aux anciens agents et comment faudra-t-il monitorer nos patients?

HOSPITAL PHARMACISTS CAN TAKE THE CHARGE IN MAKING MEDICATION USE SAFER

David U, MscPhm, ISMP Canada, Toronto, ON

Studies have shown approximately 5 % of medication orders are involved in errors. Many of these errors in hospital community have caused patient harm. Organizations can start creating a culture of safety and encouraging an open and non-punitive way of handling medication errors for the purpose of learning and for preventing them from recurrence. They can also provide appropriate support to implement changes. Hospital pharmacists can also contribute considerably in making safer medication use. As pharmacists are involved in almost all the stages where medications are ordered, prepared and administered, they have an important role in creating safeguards for errors and more importantly in preventing injuries to the patients. These include system re-design, more efficient workflow, deployment of technology, continuing education on high risk drugs, strict enforcement of formulary drugs. Reporting medication errors and near-misses internally and externally will facilitate the sharing of experiences and will uncover root causes of these problems.

MEDICATION ERROR PREVENTION IN A PEDIATRIC POPULATION

Brian Beven, B.Sc.Phm, The Hospital for Sick Children, Toronto, ON

The goal of this session is to provide pharmacists with an understanding of the types of medication errors in the pediatric population and to look at strategies for error reduction and prevention.

While many types of errors in pediatrics are also found in the adult population, there are those for which the pediatric population is more vulnerable. Misplaced decimal points can lead to 10 fold dosing errors. Prescribing, dispensing and administration of medications to neonates, infants and older children almost always require dose calculations. Marketed products are often not available, frequently not studied in pediatric patients during clinical trials and are often not suitable for measuring small doses.

Lack of current pediatric dosing resources can lead to inappropriate drug therapy. Examples of pediatric dispensing and administration dilemmas will be discussed.

A systems approach to medication error reduction and prevention can work for pediatrics as well as adults. Regular review of actual and potential medication incidents by a multi-disciplinary team and a commitment from the institution to patient safety are essential for error prevention and reduction.

GOALS AND OBJECTIVES OF PRESENTATION

1. To provide pharmacists with an understanding of the types of medication errors in the pediatric population.
2. To look at guidelines for error reduction and prevention in the pediatric population.

SELF ASSESSMENT QUESTIONS

1. What are the most common types of medication incidents in the pediatric population?
2. What strategies will you use in your practice site to reduce the risk of pediatric medication incidents?

LOOK OUT FUNGI. HERE COME THE NEW ANTIFUNGALS!

Barrie McTaggart. BSc Phm, McMaster University Medical Centre, Hamilton, Ont

The incidence of invasive fungal disease has increased dramatically during the past decade. Traditionally amphotericin B (amB) has been the gold standard therapy for the management of these infections but its use is often associated with significant therapy limiting infusion related side effects and nephrotoxicity.

Attempts to overcome these limitations have included the development of the azole class of antifungals (eg. fluconazole, itraconazole) and the introduction of new delivery systems for amB (amB lipid complex, liposomal amB). Despite these improvements the available agents still possessed limitations in terms of spectrum of activity (azoles), toxicity (amB formulations), and mortality associated with invasive mould infection remains in excess of 50%.

Clearly new therapies are required to overcome these difficulties. In this regard, caspofungin, the first of a novel class of injectable antifungals called echinocandins was recently launched onto the North American market, and two other members of this class, micafungin and anidulafungin are also under development. In addition, new azoles with broader antifungal activity (eg. voriconazole, posaconazole, ravuconazole) are currently under evaluation, with voriconazole likely to be licensed in Canada soon.

These new antifungals will be reviewed and compared to traditional agents in terms of spectrum of activity, pharmacokinetics, side effects, drug interactions and clinical trial experience to date. The role of these agents in the management of invasive fungal disease will also be discussed.

GOALS AND OBJECTIVES OF PRESENTATION:

1, To describe the limitations of existing antifungals agents.

2. To identify and contrast new and coming antifungals with existing agents.

3. To review currently available clinical trial data and identify the potential clinical role of new antifungals in the management of various invasive mycoses.

SELF-ASSESSMENT QUESTIONS:

1. What are the differences in spectrum of activity between fluconazole and voriconazole?

2. What is the potential impact of these new agents on the management of persistent fever in neutropenic cancer patients?

3. What is the theoretical rationale for combination therapy of invasive fungal infection with new antifungal agents?

GLYBURIDE 10 MG BID IS THE MOST COST-EFFECTIVE DOSE

Bill Cornish, BScPhm, Sunnybrook & Women's, Toronto ON

The 1998 Canadian Diabetes Association clinical practice guidelines for treatment of type 2 diabetes advocate the use of increasing doses of the initial oral antidiabetic agent up to and including the maximum licensed daily dose. However, expert opinion in current authoritative reviews states that oral antidiabetic agents generally achieve approximately 75% of their maximum glucose lowering effect at about half the maximum licensed daily dose. Indeed, the sulfonylureas have been shown to possess a relatively flat dose-response curve at doses greater than half the maximum daily dose.

Glyburide was shown in a 1991 study to exert maximal insulin stimulating effects at a dose of 10 mg. A 1993 trial examined the effects of three doses of glipizide (10, 20, and 40 mg per day) and reported no difference in the level of glycemic control (HbA1c). Serum insulin levels in response to a test meal were similar for the 10 and 20 mg doses, but were significantly lower with the 40 mg dose.

Therefore, when a patient is inadequately controlled with a dose of glyburide in the range of 10-12.5 mg per day, the preferred strategy is to add a second agent (e.g., metformin) rather than increasing the dose of glyburide. This approach is also based on the fact that hyperglycemia results from defects in both insulin secretion and insulin action, and monotherapy with currently available drugs cannot address both of these defects.

Goals and Objectives of Presentation

1. To examine evidence relating to the dose-response relationship for sulfonylureas.

2. To describe the rationale for preferential use of combination therapy with oral antidiabetic agents.

Self Assessment Questions

1. What effects have been observed subsequent to a dose increase of glipizide from 10-20 mg per day to 40 mg?

2. At what dose of glyburide is 75% of the maximum glucose-lowering effect achieved?

References

1. Anonymous. Drugs for diabetes. Treatment Guidelines from the Medical Letter 2002 (Sept); 1(1): 1-8.

2. Stenman S, Melander A, Groop P-H, Groop LC. What is the benefit of increasing the sulfonylurea dose? Ann Intern Med 1993; 118: 169-72.

QUINOLONES SHOULD NOT BE USED IN CHILDREN

Kathy Griffiths, BSP, The Hospital for Sick Children, Toronto ON

The goal of this session is to provide pharmacists with a review of toxicity concerns surrounding fluoroquinolone use in children and outline how fluoroquinolones can be used to treat infections in children.

Fluoroquinolones were discouraged from use in children because of toxicity data in juvenile dogs. In the 1990's data was published which suggested that the therapeutic benefits of fluoroquinolones outweighed the theoretical risks. Infections that are treated with fluoroquinolones in children are often different from the infections in adults where fluoroquinolones are indicated. Because fluoroquinolone therapy in children is often directed toward Gram negative organisms, particularly Pseudomonas aeruginosa, ciprofloxacin is an ideal agent. The newer broad-spectrum fluoroquinolones have not been necessary in children and there is little or no data to support use of these newer agents.

GOALS AND OBJECTIVES OF PRESENTATION

1. To provide pharmacists with sufficient evidence to assess whether a fluoroquinolone would be appropriate for a child.
2. To provide references which will help dispel worries about using fluoroquinolones in children.

SELF ASSESSMENT QUESTIONS

1. What are the safety concerns about fluoroquinolone administration in children and are the concerns supported in pediatric literature?
2. Which fluoroquinolone(s) would be most appropriate for use in children, if any?

CARING IN OUR MULTICULTURAL SOCIETY: ISSUES AND CHALLENGES

Ruth Lee, RN, PhD

Statistics Canada (2001) indicates that Canada is home to over 100 different cultural groups. More than half of Canada's recent immigrants are from Asian countries rather than from European countries - the main source of immigration during the post World War II era. Our health care system is built on Western health belief and values. As Canada becomes a more racially and ethnically diverse nation, our health care system and providers need to respond to patients' varied health beliefs and practices, values and ways of life. In the hospital setting, technologies and practices can be unfamiliar and intimidating to the general public, especially to immigrants who have a different health belief system and limited knowledge of the Western health care system. Misconception or miscommunication can compromise the quality of care to patients, and create undue distress for patients and families as well as frustration for the health care workers.

With the changing mosaic of multicultural Canada, cultural competence should be an integral part of professional health practice. Proficiency in cultural health assessment and cross cultural communication skills and the ability to tailor care delivery to meet patient's social, cultural, and linguistic needs are important elements in quality patient care. This presentation will address issues related to caring for patients form the multicultural community and explore how being culturally sensitive to the needs of our patients can enhance our ability in providing quality care in the hospital setting.

EVALUATING THE CBC: FOCUS ON ANEMIA

Lori D. Wazny, B.Sc.(Pharm), Pharm.D., CDE, London Health Sciences Centre, London, ON

This session will provide pharmacists with practical advice in interpreting anemia using data from the CBC. Anemias to be discussed include: iron deficiency, folate & vitamin B12 deficiency, anemia of chronic disease, anemia due to renal failure, and hemolytic anemia. Treatment options will also be discussed. The information will be presented through both didactic teaching as well as case presentations. This goal of this workshop will be to learn through discussion in an interactive but relaxed environment.

Goal and Objectives

1. To provide pharmacists with an understanding of some of the most common anemias seen in clinical practice.
2. To enable pharmacists to provide treatment recommendations for the anemias discussed.

Self Assessment Questions

1. What information does the MCV provide in the interpretation of anemia?
2. Which medications may contribute to folate deficiency?
3. What is the target hemoglobin for anemia of chronic renal failure?

SEAMLESS CARE: MAKING IT WORK

Jennifer Lowerison, B.Sc.(Pharm), PharmD
Judy Schoen, B.Sc.Pharm, MBA, Calgary Health Region, Calgary, Alberta

The goal of this workshop is to provide pharmacists with an opportunity to identify potential strategies for implementation and integration of seamless pharmaceutical care into individual pharmacy practice areas.

Pressures on the health care system have forced all stakeholders to evaluate current practices and to seek effective and cost efficient models of service delivery. Part of the change has included a shift towards community-based care with patients being discharged earlier from acute care institutions. The focus is to provide a continuum of care. This can be defined as an integrated, seamless approach across all sectors from acute to extended to home care. To support this shift, there needs to be an improvement in communication between hospital and community-based health care professionals.

Given the high incidence and cost of drug-related morbidity and the shift towards community based care, the need for pharmaceutical care is evident. Seamless pharmaceutical care is the provision of uninterrupted pharmacotherapy monitoring from institution to community and vice versa. Translated into everyday practice, a patient's medication profile and care plan would follow the patient as he moves along the continuum of care. The patient would receive high quality, consistent, accountable and cost effective care without regard to practice site. The benefits of a seamless model include:

- prevention of incorrect medication histories and subsequent mishaps
- an awareness of patients' current home situations and problems
- prevention of unintentional changes to patients' medication regimens after discharge
- a continuous supply of medication, preventing interruptions in therapy
- provision of compliance aids as patients move to independent care settings
- prevention, follow-up and resolution of drug-related problems

Goals and Objectives of Workshop:

1. To describe the consequences of a fragmented health care system and to describe the seamless care process
2. To identify barriers to seamless care and to identify potential strategies for implementation and integration of seamless care into individual pharmacy practice areas
3. To describe methods to promote and support a seamless care philosophy
4. To identify expected outcomes associated with provision of seamless care
5. To describe actions to facilitate seamless care in one's own daily practice

Self Assessment Questions:

1. What are the barriers to seamless care in your practice environment and what are some strategies to overcome such barriers?
2. What steps can be taken to initiate a seamless care process at a local level?
3. Name specific actions to incorporate seamless care into your daily practice and how would you define and track the outcomes.

ENSURING A SAFE MEDICATION EXPERIENCE

Donna M.M. Woloschuk, PharmD. Winnipeg Regional Health Authority, Winnipeg, Manitoba. [dwoloschuk@hsc.mb.ca]

Ensuring safe medication experiences involves much more than laying down sets of rules team members must follow. Safe medication experiences are more likely if a "safety culture" is active in the practice setting. "Safety culture" minimally involves:

- taking into account the boundaries and patterns of communication within the team when designing processes, procedures and working practices
- taking a positive attitude towards criticism and other feedback from all levels within and outside the team
- promoting caring about the consequences of the team's activities and the effects of individual actions, and
- encouraging involvement and commitment and being able to resolve conflict without causing alienation.

Too often the response to an error or near miss is to implement a "fix" as quickly as possible. In the worst of settings, sequential quick fixes lead to a confusing proliferation of new rules that lead to new errors. This workshop offers opportunities to share positive and negative experiences with commonly used "fix" tools. Case examples will stimulate discussion about the benefits and failure risks associated with job aides, pre-printed prescriptions and care maps/standardized treatment protocols.

GOALS AND OBJECTIVES:

1. At the end of this workshop, participants will:
2. List at least five error reduction strategies in rank order.
3. List at least three ways that job aides, pre-printed prescriptions and care maps can contribute to unsafe medication experiences.

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THE ROLE OF PHARMACIST IN ACUTE PAIN MANAGEMENT

Anil Patel, B.Sc. (Pharm.), B.Sc. (Micro.) Ottawa Hospital, Civic Campus, Ottawa Ont.

More than 50 % of hospitalized post surgery patients receive inadequate pain control with traditional medications given as prn. The knowledge of the key concepts in Acute Pain is a prerequisite for effective pain management. The aim of therapy is to prevent and relieve pain safely with minimal disturbance of homeostasis within the limits of available resources.

An Acute Pain Service (APS) with multidisciplinary team members from Anesthesia, Nursing and Pharmacy departments can provide effective pain management to reduce length of stay, early mobilization, and reduce cost.

The primary objectives of an APS are, early identification of patient's analgesic needs, institution of preemptive analgesia, effective continuous pain control monitoring, prevention and treatment of adverse events, and establishment of a parallel quality assurance program.

As a member of a multidisciplinary team, pharmacists have an opportunity to get involved in all the aspects of drug modalities of acute pain. Pharmacists can provide Pharmaceutical Care by proactively facilitating new modalities and participating in direct patient focused activity of the APS.

OBJECTIVES

Describe the key concepts of Acute Pain Management.

Discuss the different pharmacological modalities in Acute Pain management

Identify reasons and bring awareness of the factors influencing inadequate treatment of Acute Pain.

Discuss different components of assessment of Acute Pain Management.

Describe the product oriented and patient focused role of pharmacist in Acute Pain Service (APS)

SELF ASSESSMENT QUESTIONS

What should patient expect from Pharmacists in dealing with their Acute Pain?

What are the barriers in providing Pharmaceutical Care to all acute Pain patients?

What are the basic elements of a pain assessment tool?

ELECTROLYTE PROTOCOLS - WHAT WORKS?

Sharon Yamashita Pharm.D., FCSHP

Goals and Objectives:

The goal of this session is to promote discussion on the advantages and disadvantages of Electrolyte Replacement Protocols. Critical Care practitioners are encouraged to bring their Replacement Protocols and share their experiences with these protocols.

Monday, February 3 - lundi le 3 février

ONTARIO'S UNIVERSAL INFLUENZA VACCINATION PROGRAM - A GOOD THING OR A BAD THING?

Allison McGeer, MSc, MD, FRCPC

Mount Sinai Hospital, Toronto, ON

GOALS AND OBJECTIVES OF PRESENTATION

1. To enable pharmacists to answer questions from patients and staff about the risks and benefits of influenza vaccination in different population groups.
2. To update pharmacists on vaccine recommendations, and on the results of the Ontario program.

Most people, including health care workers, substantially underestimate the impact of influenza because the disease is very common and usually mild, because death is due to complications rather than the virus itself and because diagnosis is often not made. Nonetheless, this virus kills more Canadians than any other infectious disease.

Influenza vaccines have been available for more than 50 years. Across Canada, two jurisdictions, Ontario, and the Yukon, offer free universal influenza vaccination. In other jurisdictions, the indications for influenza vaccine are being expanded more slowly. An increasing number of patients and staff have questions about whether they should be vaccinated.

This talk will review the impact of influenza in Canada, current Canadian recommendations for vaccination, and data on the risks and benefits of influenza vaccine in different circumstances.

SELF ASSESSMENT QUESTIONS

Should health care workers get vaccinated against influenza?

What are the reasons for and against vaccinating healthy children against influenza?

Which pregnant women should be be offered influenza vaccine?

TO HAVE AND TO HOLD – RETENTION STRATEGIES AT THE UNIVERSITY HEALTH NETWORK

Emily Lap Sum Musing, B.Sc.Phm., University Health Network, Toronto, ON

In this day of health care staff shortages and increasing stress within the workplace, organizations are looking at innovative ways to create an environment that will both stimulate and support their staff.

Recent publications have highlighted specific factors that have been identified by health care workers to affect workplace quality. These tend to fall within the areas of work environment, job design and organizational structure, industrial relations and professional associations, and employment relationships. These are addressed to some degree by the standards set by the Canadian Council for Health Services Accreditation.

Although many of the principles of an optimal work environment seem obvious, health care organizations attempting to implement these practices often face many challenges. These include governance issues, financial constraints, industrial relations, labour shortages, and inter-professional conflict.

This presentation will describe some of the strategies that are being implemented within the University Health Network, a large multi-site acute care teaching hospital.

GOALS AND OBJECTIVES OF PRESENTATION

1. To provide an overview of factors that have been identified to affect workplace quality.
2. To identify challenges facing health care organizations when attempting to institute human resource practices which staff feel are most important.
3. To highlight a sample of the initiatives that are being implemented within the University Health Network.

SELF ASSESSMENT QUESTIONS

1. What are the factors to a high quality workplace? How does your institution measure up to these principles?
2. What are the challenges facing health care organizations to implementation of workplace strategies? How can your institution work within these challenges to support an optimal work environment?
3. What are some potential strategies that may fit with your organizations' unique strengths and challenges?

ACADEMIC DETAILING – INITIATIVES, CHALLENGES AND OPPORTUNITIES

Anne Nguyen, BScPhm, PharmD, Vancouver BC

Learning objectives

1. To be aware of academic detailing and the evidence behind it.
2. To be aware of the academic detailing programs across Canada.
3. To describe the experiences of the BC Community Drug Utilization Program in Vancouver.
4. To discuss the assessment of academic detailing.

Abstract

Academic detailing (academic outreach, counter-detailing) is an educational technique that has the potential to influence clinical decision-making.[1] It can be used to assist prescribers in selecting the most appropriate and cost effective drug therapy for their patients. Healthcare providers receive, in their own setting, a personalized visit from a trained professional who disseminates drug information.

Academic detailing is still in its infancy in Canada, but there are various organizations that have expressed an interest in pursuing this endeavour. Challenges and successes from Canadian programs (British Columbia, Alberta, Saskatchewan, Nova Scotia) will be shared to encourage the development of academic detailing programs across the country.

The BC Community Drug Utilization Program (BC CDUP) publishes "the review" newsletters at least four times a year (www.cdup.org). These are followed-up with an academic detailing visit to participating family physician offices in Vancouver's North Shore. Sessions are either one-on-one or group discussions that last an average of 15 minutes. Feedback from physician participants has been positive.

BC CDUP was recently involved in a trial to assess the effect of academic detailing. Family physicians were randomized to different newsletters and academic detailing sessions. Results from these analyses, and their impact will be discussed.

Reference

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Self assessment questions

1. What is academic detailing?
2. What has been the impact of academic detailing in Canada?

WEST NILE VIRUS INFECTION: AN UPDATE

Andrew E. Simor, MD, FRCPC, Sunnybrook and Women's College HSC, Toronto, ON

Objectives:

- to review the epidemiology and transmission of West Nile virus infection
- to appreciate the clinical features, outcome, and approach to the diagnosis of West Nile virus infection
- to understand potential preventive and therapeutic strategies for the management of West Nile virus infection

Abstract

West Nile Virus (WNV) is an RNA virus in the family flavivurus, related to St. Louis encephalitis virus and Japanese encephalitis virus. WNV is known to have a wide geographic distribution in Asia, North Africa, the Middle East, and Europe. It was first identified in North America (in New York) in the summer of 1999. Since then, there has been extensive spread of the virus on the continent. As of October 2002, a total of 3,052 cases have been reported in 38 American states. In Canada, infected birds and mosquitoes have been identified in 5 provinces, with 96 human cases. The virus is an arbovirus, transmitted by mosquito bites. Most infections are not clinically apparent; only about 20% of those infected develop a febrile or "flu-like" illness. Encephalitis or aseptic meningitis occurs in less than 1% of all cases. Treatment is supportive. A clinical trial of ribavirin and interferon-"2b is currently underway, and a vaccine for use in humans and animals is also being investigated.

Self-Assessment Questions

1. Which one of the following statements regarding transmission of West Nile virus (WNV) is not true?

a. WNV may be transmitted through a blood transfusion or solid organ transplant.

b. The major route of WNV transmission to humans is by culex species mosquito bites.

c. WNV infection is rarely transmitted to mammals other than humans.

d. WNV transmission is magnified or enhanced by a cycle of infection between mosquitoes and birds.

e. Although crows, ravens, and jays are most susceptible to WNV, the virus may infect any bird or mammal.

Answer: (c)

1. Which one of the following statements regarding WNV infection is not true?

a. Only about 20% of those infected develop a febrile illness.

b. Muscle weakness with flaccid paralysis rarely occurs in hospitalized patients with WNV infection.

c. The case-fatality of WNV infection in hospitalized patients has been reported to range from 4% to 14%.

d. Meningitis or encephalitis occur in 1 in 150 to 1 in 300 WNV infections.

e. Neurologic disease and increased mortality are more likely to occur in those over 50 years of age.

Answer: (b)

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ASPIRATION PNEUMONITIS: WHEN AND HOW TO TREAT

Michael Tierney, B.Sc.Phm., M.Sc., The Ottawa Hospital, Ottawa, ON

Aspiration is the inhalation of oropharyngeal or gastric contents into the larynx and lungs. Aspiration pneumonitis is an inflammatory acute lung injury due to chemical injury following inhalation of gastric contents. Aspiration pneumonia is a bacterial infection caused by the inhalation of orophayngeal contents that are colonized with bacteria. Although most cases of pneumonia are due to organisms which gain access to the lungs via inhalation, aspiration pneumonia typically refers to a bacterial pneumonia in the setting of a documented or highly suspected overt aspiration.

Anaerobic organisms have been typically thought to be the primary pathogens involved in aspiration pneumonia, though the evidence in support of this is old and more recent studies have failed to document anaerobic organisms as a likely cause of both community acquired and nosocomial aspiration pneumonia. Although antibiotic therapy is necessary in all true cases of aspiration pneumonia, targeted antibiotic therapy against anaerobic organisms appears unnecessary except in selected cases eg. lung abscess following aspiration, periodontal disease. The choice of antibiotic therapy is dependent on the setting of the patient; penicillin G may suffice in cases of community acquired aspiration pneumonia while agents with broad activity against gram negative organisms are appropriate for nosocomial aspiration pneumonia.

SELF-ASSESSMENT QUESTIONS

1. How is aspiration differentiated from aspiration pneumonia?
2. What are reasonable antibiotic choices for community and hospital acquired aspiration pneumonia?

REFERENCES

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Tuesday, February 4 - mardi le 4 février

ATRIAL ARRHYTHMIAS AND THEIR MANAGEMENT

Heather Kertland, PharmD St Michael's Hospital and University of Toronto, Toronto, ON

Atrial fibrillation (a fib) is the most common arrhythmia resulting in hospital admission. Recent ACC/AHA guidelines provide an evidence-based approach to caring for these patients. Newer medications such as ibutilide and dofetilide are being used for the management of a fib. Recent trials have called into question, the traditional approach of rhythm control over rate control. This session will review the recommendations in the recent guidelines and review trials that impact therapy since the release of the guidelines.

Goals:

By the end of the presentation the participant should be able to:

1. List three medications that have been used to convert atrial fibrillation.
2. List three medications that have been used to maintain sinus rhythm.
3. Describe how the results of the AFFIRM trial impact therapy for patients with atrial fibrillation.

Self-assessment questions.

1. Is amiodarone effective in converting atrial fibrillation to sinus rhythm?
2. Is amiodarone effective in maintaining a patient in sinus rhythm?
3. What are the benefits to having a patient in sinus rhythm compared to atrial fibrillation?

EVALUATING THE APPROPRIATE USE OF DRUGS

Cynthia Jackevicius, B.Sc.Phm., M.Sc., FCSHP, University Health Network, Toronto

Clinical trials provide us with the efficacy data regarding the potential benefit of new therapeutic modalities. Clinical trials are conducted in a structured way, with "ideal" patients. They also provide the necessary evidence on which to base clinical practice guidelines. Quite often, the way medications are recommended to be used in practice guidelines is not how they are used in actual practice. Practice pattern analyses of the use of medications provides the clinician with real life data on how medications are used in practice, how effective they are in practice and the potential adverse effects which cannot be assessed in the clinical trial setting.

This presentation will explore, by using a case example, different methods by which clinicians can evaluate the appropriate use of medications in a specific clinical area and understand the literature of practice pattern analyses.

Goals and Objectives

1. To provide pharmacists with an understanding of different strategies for evaluating the appropriate use of drugs.
2. To provide pharmacists with practical examples of how pharmacists have conducted projects/research to assess the appropriate use of drugs.

Self Assessment Questions

1. What information is available from clinical trials as compared to practice pattern studies?
2. What is the difference between effectiveness and efficacy?
3. What are different strategies that can be used to measure appropriateness of drug use?

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CARING FOR A PATIENT WITH ENDOCARDITIS

Don H. Kuntz, BSP, Regina Health District, Regina, Saskatchewan

The goal of this presentation is to provide pharmacists with an understanding of the pathophysiology; diagnosis, treatment and prevention of infective endocarditis in order to provide care for patients so affected.

Infective endocarditis is a disease associated with extended hospital stays and a high mortality rate. The diagnosis and treatment of infective endocarditis is complex and requires the collaboration of specialists in infectious disease, cardiology, cardiac surgery and microbiology. Since the drug therapy required is lengthy, the pharmacist can play a pivotal role in the provision of care for these patients, in order to provide continuous monitoring and coordination of care.

Pharmacists can identify patients with suspected endocarditis and patients at high risk for endocarditis during ward monitoring, and can assist physicians and other health care providers with appropriate timely lab testing, effective selection of antimicrobials including dose, frequency, length of therapy and clinical monitoring. Patients may be followed to ensure completeness of therapy, effective transition from hospital to home care, while monitoring for complications from the disease itself and the drug therapy. Pharmacists can also provide education for patients and advise on appropriate preventative measures.

GOALS AND OBJECTIVES OF PRESENTATION

1. To provide pharmacists with an understanding of patients with infective endocarditis, diagnostic criteria and procedures, and the therapeutic goals of therapy, both medical and surgical.
2. To provide pharmacists with information on how to effectively become involved in caring for patients with infective endocarditis from admission to home care follow-up.
3. To identify the changing face of the patient with or at risk for development of infective endocarditis.

SELF ASSESSMENT QUESTIONS

1. What are the appropriate medication history questions to ask a patient with endocarditis.
2. What do patients at high risk for developing or who have endocarditis need to know about the disease and prevention.
3. What are the clinical signs and symptoms to be aware of in caring for a patient with infective endocarditis.

A CLINICAL PHARMACIST'S GUIDE TO CAREER DEVELOPMENT.

Gary Wong, BScPharm, Toronto General Hospital, Toronto, ON

Goals of the talk

1. To outline the personal characteristics which would assist a pharmacist in becoming an effective clinician.
2. To outline the different activities which aid in the development of clinical skills for a pharmacist.
3. To outline individuals or groups of people who can help one become a productive clinician.

The development of a pharmacist starts as soon as they walk through the faculty doors of the University. This process of development continues as you leave the University environment. New pharmacy graduates are faced with many challenges when working in a hospital setting. There are many new diseases to understand; patients with several compounding disease states, many practical operational issues, and overall how does a pharmacist balance this multitasking practice.

Pharmacists are involved in therapeutics and research. They are commonly advocates for their patients. We are involved in administrative duties as well as educational responsibilities. In order to fulfill these many roles a pharmacist must possess a range of characteristics.

One of the keys to being a successful clinician is bringing organization to an unstructured learning environment. Pharmacists are involved in many activities as stated earlier. Good planning is needed in order to become a productive clinician. One should always plan which activity they wish to be involved in. The selection of this activity should always include an assessment of its developmental potential. Direct patient care is a common medium used for development of skills in a problem-based philosophy. In order to become an expert in a topic one must understand its details and concepts. This higher learning is commonly fostered by the process of teaching, writing, and researching a topic. Self evaluation skills are critical to this planning process.

Administrative and peer support enhances this developmental process. Peer support arises from colleagues within and from outside the institute. Mentors for pharmacists can be other pharmacists, physicians, and other health professionals.

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Questions

What activities can have a positive impact on my development as a pharmacist?

Who are individual that maybe able to assist my development?

WEB RESOURCES FOR CANCER - ONLINE DRUG INFORMATION FOR HEALTHCARE PROFESSIONALS

Annie Ngan, B Sc Phm, Cancer Care Ontario (CCO), Toronto, ON

The goal of this session is to inform pharmacists of the availability of some online drug information websites pertaining to oncology practice in Canada, in particular, the CCO Drug Formulary Website.
http://www.cancercare.on.ca/formulary

The online CCO Drug Formulary is designed as a book with chapters: Cancer Drug Monographs, Chemotherapy Regimens, Supportive Care and Symptom Control Regimens, and Patient Information. The framework of the drug monographs and regimens was created in collaboration with oncology pharmacists and medical oncologists. A survey was done via a CCO computer physician ordering system (OPIS 2000) to gather information for the chemotherapy regimens in use province wide. These regimens were then carefully analyzed. Proposed formulary regimens were drafted and the Chair of each CCO Disease Site Group was consulted for revision of these regimens for standardization of use and categorization – core, local, restricted, emergent or archived.

The CCO Drug Formulary can be used as a tool to organize and standardize systemic therapy ordering, administration and monitoring. It will help clinicians to provide province-wide consistent care to individual patients, serve as a drug information resource, and optimize healthcare dollars using evidence-based guidelines.

The BC Cancer Agency also has an excellent website, with a large section devoted to providing updated drug and regimen information to healthcare professionals. There are also some fundamental drug information websites that are invaluable to each and every oncology pharmacist.

GOALS AND OBJECTIVES OF PRESENTATION

1. To inform pharmacists the availability of some online drug information websites pertaining to oncology practice in Canada, in particular, the CCO Drug Formulary Website.
2. To provide a tool for pharmacists to optimize patient care, using the oncology drug information resources available.

SELF ASSESMENT QUESTIONS

1. What are the two cancer agencies in Ontario and British Columbia?
2. Where would pharmacists search for specific cancer drug information to reflect the choice of chemotherapy used in Ontario and British Columbia?

PRACTICAL IMPLICATIONS OF USING GLYCOPROTEIN IIB/IIIA INHIBITORS

Rubina Sunderji, B.Sc.(Pharm), Pharm.D., FCSHP, Vancouver General Hospital, Vancouver, B.C.

Glycoprotein IIb/IIIa inhibitors (GPI) have become cornerstone in the management of patients with acute coronary syndromes (ACS) and as adjunctive therapy in percutaneous coronary interventions (PCI). The currently available GPI in Canada include abciximab (ReoPro®), tirofiban (Aggrastat®) and eptifibatide (Integrilin®). The goal of this session is to address practical issues for patients treated with these agents.

As potent inhibitors of platelet aggregation, bleeding is an expected complication of GPI. While it is standard practice to combine unfractionated heparin (UFH) with GPI for non-ST-elevation ACS based on clinical trials, there has been uncertainty about outcomes following combination therapy with low molecular weight heparin (LMWH). Recent evidence for safety and efficacy of combining GPI with LMWH will be presented. Similarly, the use of GPI in combination with fibrinolytic therapy will be reviewed.

Occasionally, patients treated with GPI require emergency coronary artery bypass surgery. This session will address the implications with regards to management of such patients as well as strategies for managing acute bleeding from GPI. Additional practice-related issues such as selection of a GPI in patients with renal impairment or for specific indications will be discussed.

GOALS AND OBJECTIVES OF PRESENTATION

1. To enable pharmacists to promote appropriate and safe use of GPI in their patients
2. To provide pharmacists with recent scientific information supporting safe and effective use of GPI

SELF ASSESSMENT QUESTIONS

1. Can patients receiving a LMWH safely receive a GPI in combination?
2. How should a patient receiving a GPI infusion and requiring emergency coronary artery bypass surgery be managed?
3. Are there differences between the GPI to guide selection in special populations?

OXALIPLATIN

Swasti Bhajan Mathur, BScPhm, Rouge Valley Health System, Centenary Health Centre Site, Toronto, ON

Oxaliplatin is a third generation platinum compound currently available under the Special Access Program, Therapeutic Products Directorate. Oxaliplatin is a novel compound with anti-tumour activity in colorectal cancer that has demonstrated synergy with 5-fluorouracil (5FU)1. Oxaliplatin has also shown activity in other types of cancers (ovarian, non-small cell lung cancer, non-Hodgkin's lymphoma). Of interest, oxaliplatin has a broad spectrum of antineoplastic activity and has demonstrated a lack of cross-resistance with other platinum compounds (including cisplatin and carboplatin)[2].

Colorectal cancer (CRC) has always been difficult to treat successfully. For more than 40 years, 5FU has been the mainstay of chemotherapy regimens for CRC (either in the adjuvant setting or in the treatment of advanced and metastatic disease)[3].

As a treatment for CRC, oxaliplatin has been investigated in a wide variety of settings (phase 1 to 3 trials in first and second line advanced disease trials and in the adjuvant setting)[4]. Oxaliplatin has also been studied in a variety of different methods of administration including monotherapy, combination therapy (with 5FU, leucovorin, irinotecan, raltitrexed or capecitabine) and different administration models (intravenous infusion, chronomodulated).

The main toxicities associated with oxaliplatin can be divided into neurological, gastrointestinal and hematological. A cumulative peripheral sensory neuropathy is the principal dose-limiting toxicity. Severe neurotoxicity with functional impairment has been estimated to occur in up to 10% of patients at higher cumulative doses[5]. The acute manifestation of neurotoxicity is more common (occurring in 85-95% of patients) and can start within hours of administration and often occurs with exposure to the cold. This presents a unique patient counseling opportunity for oncology pharmacists.

This presentation will outline the current oxaliplatin trials being investigated, different combination therapies and practical tips for dealing with side effects. The anticipated full availability on the Canadian market will also be discussed.

Goals and Objectives of Presentation

1 To be familiar with oxaliplatin: a new colorectal cancer treatment option.

2 To understand where oxaliplatin fits in: in terms of current treatment regimens.

3 To be aware of the unique side effect profile of oxaliplatin.

Self Assessment Questions

1 What are the dose limiting toxicities associated with oxaliplatin?

2 How can oncology pharmacists appropriately counsel patients regarding the side effect profile of oxaliplatin and provide guidance as to the management of these side effects.

ZOLEDRONATE - IS IT JUST ANOTHER BISPHOSPHONATE?

Biljana Spirovski,B.Sc(Pharm), Humber River Regional Hospital, Toronto ON

The goal of this presentation is to provide pharmacists with an understanding of the role Zoledronic Acid has in the treatment of tumor-induced hypercalcemia and bone metastasis in different tumor types.

Bisphosphonates play an important role in the management of cancer patients, from treatment of tumor induced hypercalcemia (TIH) to prevention and treatment of skeletal complications and reduction of bone pain.

They are well established as treatment of choice for TIH. Clodronate or Pamidronate are typically used depending on the guidelines followed, but some patients still fail to respond.

Zoledronic Acid (Zoledronate) is a new, third generation bisphosphonate, available for treatment of patients with TIH, multiple myeloma and solid tumors with bone metastasis.

It is much more potent than other bisphosphonates and is very effective in normalizing serum calcium in patients with moderate to severe TIH. It is also the first bisphosphonate that has been proven to be effective in delaying and reducing complications of the predominantly osteoblastic bone lesions seen in men with advanced prostate cancer.

The focus of this session will be to discuss the role of Zoledronic Acid in both TIH and metastatic bone disease. Clinical experience to date will be presented, as well as clinical trials that have led to the marketing of Zoledronate.

GOALS AND OBJECTIVES OF PRESENTATION

1. To provide pharmacists with an understanding of the role Zoledronic Acid has in the treatment of tumor-induced hypercalcemia and bone metastasis in different tumor types.
2. To review the efficacy, safety profile and administration strategy of Zoledronic Acid.

SELF ASSESMENT QUESTIONS

1. How does Zoledronate compare to other bisphosphonates when treating patients with TIH?
2. Who are the best candidates for administration of Zoledronate among patients with bone metastasis from solid tumors?

IMATINIB MESYLATE (GLEEVEC™)

Winnie Ho, BScPhm, The Scarborough Hospital – General Division, Toronto ON

The goal of this presentation is to provide pharmacists with an understanding of chronic myeloid leukemia (CML) and the role of imatinib mesylate (Gleevec™) in the treatment of CML.

Approximately 95% of CML patients have the Philadelphia chromosome, which leads to formation of the abnormal Bcr-Abl tyrosine kinase protein. Imatinib is the first molecularly targeted gene suppressor therapy. It is designed to block the function of the abnormal Bcr-Abl tyrosine kinase protein, thereby inhibiting signal transduction and the proliferation of white blood cells.

The initial studies of imatinib in CML have produced such remarkable results that FDA reviewed and approved the New Drug Application in only 10 weeks following submission. Both hematologic and cytogenetic responses were seen in CML patients in the chronic and advanced phases. Currently, imatinib is indicated for the treatment of patients with CML who failed interferon alpha therapy, and for the treatment of patients with rare gastrointestinal stromal tumors (GISTs). Research is also being conducted to study the effectiveness of imatinib in other tumor types, such as small cell lung cancer and prostate cancer.

Overall, the side effects of imatinib are mild to moderate in severity. The most frequently reported adverse effects include nausea or vomiting, fluid retention/edema, muscle cramps, and diarrhea, all of which may be managed with pharmacological and/or non-pharmacological measures. Since imatinib is primarily metabolized by CYP3A4 and is also a competitive inhibitor of CYP3A4 and certain other cytochrome P450 enzymes, it can interact with various drugs such as phenytoin, cyclosporin, and warfarin.

GOALS AND OBJECTIVES OF PRESENTATION

1. Provide pharmacists with an understanding of CML and the role of imatinib in the treatment of CML
2. Enable pharmacists to identify drug related problems in patients who are taking imatinib

SELF ASSESSMENT QUESTIONS

1. What is CML and what is the mechanism of action for imatinib?
2. What are some common side effects of imatinib and how can they be managed?
3. What are some common drug interactions with imatinib?

APPROPRIATE USE OF IV PROTON PUMP INHIBITORS

Anisha Lakhani, BSc(Pharm), Pharm D, Fraser Health Authority, Vancouver, British Columbia

The goal of this presentation is to provide the pharmacists with an understanding of the processes used to ensure appropriate use of drugs like intravenous proton pump inhibitor.

The intravenous proton pump inhibitor (PPI) has a few but necessary uses in the hospital setting. The intravenous PPI is one of many drugs that have a potential for overuse if proper mechanisms are not in place. Therefore, the establishment of guidelines for its use is vital. Critical evaluation of the literature is an important step required in the formulation of a protocol that defines its place within the hospital setting. It is also important to forecast usage and thereby assess budgetary impact.

Once a decision is made to recommend its addition to the formulary, how do you make sure that the physicians will be accountable and monitor themselves or their peers with regards to the appropriate use of these drugs? An important strategy is to gain physician buy-in via a process of consensus. The pharmacy department plays a key role in facilitating and engaging the medical staff in these discussions. Also, it is important to involve all the stakeholders during the implementation phase of the drug protocol, so that consistency is maintained throughout the process.

Lastly, as with the approval of many newer drugs, the pharmacy has to ensure that their use and budget impact are adequately monitored on a long-term basis. Various processes for ensuring appropriate use such as inventory control procedures, protocol management and drug use evaluation will be discussed.

GOALS AND OBJECTIVES OF PRESENTATION

1. To review the methodology involved in preparing an evidence-based protocol that supports appropriate use of intravenous proton pump inhibitors in the hospital setting.
2. To discuss strategies to influence drug use within the hospital setting.
3. To provide the pharmacists with the tools used on an ongoing basis to ensure that the intravenous proton pump inhibitors continue to be used appropriately in the hospital or region.

SELF-ASSESSMENT QUESTIONS

1. How do you prepare a comprehensive work-up or literature analysis for newer drugs like IV proton pump inhibitor, with a focus of promoting appropriate use in your institution or region?
2. How do you ensure physician buy-in and accountability for the use of drugs with significant budget impact?
3. How do you ensure appropriate use in the long term?

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ANTICOAGULATION MANAGEMENT: ADMINISTRATIVE & CLINICAL OPERATIONS

Tammy J. Bungard, BSP, PharmD, Division of Cardiology, University of Alberta, Edmonton, AB

The goal of this session is to provide pharmacists an overview of one site's experience of implementing an anticoagulation management service – from conceptualization to operationalizing the program. Our program entails 3 stages: firstly the establishment and maintenance of a hospital-based 'core' AMS, secondly the training of other pharmacists to establish a 'satellite' AMS, and thirdly the implementation of 'satellite' AMSs within the province of Alberta.

An overview of the justification for an anticoagulation management service, encompassing the inclusion of key stakeholders will be described. The structure of the program will be described outlining the role of healthcare providers and the flow of patients. Sustainability of the program will be discussed, with emphasis on the current and future role of the pharmacist.

Cases will be presented encompassing an evidence-based overview of managing critical INRs for ambulatory patients having no unusual bruising or bleeding. Time permitting, a case highlighting the implementation of cross-coverage peri-procedurally will be presented for discussion.

GOALS AND OBJECTIVES OF WORKSHIOP

1. Map out a strategy to implement a pharmacist-managed pharmacotherapeutic program.
2. Outline the management of critical INRs amongst patients that are not bleeding and have no unusual bruising.

SELF ASSESSMENT QUESTIONS

1. How can pharmacists create pharmacotherapeutic programs that situate the pharmacist as a key member of the healthcare team?
3. What is an evidence-based approach to using Vitamin K in practice?

LINDA'S JOURNEY: A PHARMACIST'S PRIMER ON BREAST CANCER

Robin K. O'Brien, BSc, BSc(Pharm), PharmD, BCOP, BC Cancer Agency, Vancouver BC

After this session, pharmacists will have a working knowledge of breast cancer.

Breast cancer is the most common cancer in Canadian women. While mortality is dropping overall, incidence is rising. There are numerous risk factors including family history, previous biopsies and estrogen exposure. Breast cancer is a hormone-dependent cancer and estrogen is both a carcinogen and tumour growth stimulant.

Modifiable risk factors include use of hormone replacement therapy, body weight and alcohol consumption. For prevention, tamoxifen may reduce breast cancer rates in high-risk women and a study is underway that compares tamoxifen and its analogue, raloxifene.

Most women are diagnosed with potentially curable early breast cancer. Patients at higher risk for a recurrence may be younger or have tumours that are larger, higher grade, estrogen receptor negative and/or lymph node positive. Adjuvant treatment for early breast cancer may include surgery +/- radiation therapy, chemotherapy and 5 years of tamoxifen or anastrozole. Oral clodronate for 2 years may improve survival.

Ten percent have incurable metastatic disease at diagnosis. Tumour markers can be useful for monitoring treatment effectiveness. Hormonal maneuvers are used for indolent tumours and chemotherapy +/- trastuzumab for more aggressive tumours. Women with bone metastases may benefit from a bisphosphonate.

Women with a breast cancer history use natural health products for a variety of reasons. Pharmacists can assist patients in developing a plan for safe use of these products. The safety of hormonal products, particularly phytoestrogens, is unknown and these products should be avoided.

GOALS AND OBJECTIVES

1. To provide pharmacists with the basics about breast cancer as an aid to pharmaceutical care.
2. To enable pharmacists to answer questions about drugs used for breast cancer prevention and the breast cancer risks of hormone replacement therapy.
3. To enable pharmacists to answer questions from breast cancer patients about drugs used for their treatment and supportive care.

SELF-ASSESSMENT QUESTIONS

1. Which combination of estrogen and progestin is thought to be associated with the lowest risk of breast cancer?
2. Should all breast cancer patients be treated with a bisphosphonate?
3. What does a woman with a history of breast cancer need to know in order to use natural health products safely?

A PRACTICAL APPROACH TO LAB ABNORMALITIES

Sharon Yamashita Pharm.D., FCSHP, Sunnybrook & Women's College Health Sciences Centre

Goals and Objectives:

The goal of this workshop is to provide a general, practical framework to the assessment of laboratory abnormalities, using cases to illustrate the approach.

Abstract:

Laboratory abnormalities are common in hospitalized patients. It is important, however, to assess the clinical significance of each abnormality and determine whether management is indicated. The following approach will be applied to several common laboratory abnormalities:

- Is the value abnormal?
- If high, is the cause due to "too much in" or "not enough out"?
- If low, is the cause due to "not enough in" or "too much out"?
- Is management necessary?

Self- Assessment questions:

Which of the following statements is correct?

a. Hyperkalemia is always treated due to the potential for cardiac arrhythmias

b. Management of hyperglycemia is generally associated with better patient outcomes

c. The most common cause of thrombocytopenia is heparin

You are called by an MD, asking advice on a patient's toxic digoxin level. Which of the following responses is incorrect?

a. administer digoxin immune Fab if the digoxin level is greater than 3 nmol/L

b. determine when the level was taken in relationship to the last dose

c. determine whether the patient is exhibiting any signs of digoxin toxicity

ANTIMICROBIAL PHARMACODYNAMICS: JUST ALL SMOKE AND MIRRORS?

Richard S. Slavik, B.Sc.(Pharm.), Pharm.D., Vancouver Hospital and Health Sciences Centre, Vancouver, BC

Pharmacokinetics (PK) is the study of the time course of absorption, distribution, metabolism, and elimination of drugs (what the body does to the drug). Pharmacodynamics (PD) is the study of the relationship between the serum concentration of a drug and the clinical response observed (what the drug does to the body). By combining pharmacokinetic properties (peak or trough serum concentrations, half life, area under the curve) and pharmacodynamic properties (susceptibility results, minimum inhibitory concentrations (MIC) or minimum bactericidal concentrations (MBC), bactericidal or bacteriostatic killing, post-antibiotic effects), unique PK/PD parameters or indices (T>MIC, Peak/MIC, or AUIC) can be defined. Depending on the killing characteristics of the antimicrobial (concentration-dependent or time-dependent), specific PK/PD parameters may predict in vitro bacterial eradication rates and correlate with in vivo microbiologic and clinical cures. An understanding of these concepts is advantageous for researchers, clinicians, pharmacy administrators, and microbiologists to promote more efficient development of new antimicrobial agents, to design optimal antimicrobial dosing regimens, to ensure appropriate formulary management and cost-effective therapy, and to limit the development of antimicrobial resistance. This session will review basic principles of useful PK/PD parameters for various classes of antimicrobials, and utilize an evidence-based approach and case format to highlight both the practical applications and limitations of these principles.

Goals and Objectives

1. To review the principles of combining PK and PD properties into specific PK/PD parameters that describe the killing characteristics of antimicrobials;
2. To review specific PK/PD parameters (T>MIC, Peak/MIC, or AUIC) for several classes of antimicrobials that correlate with microbiologic cures, clinical cures, and the development of resistance;
3. To use an evidence-based approach and case format to highlight the practical applications and limitations of these principles.

Self Assessment Questions

1. Define bactericidal and bacteriostatic activity, concentration-dependent and time-dependent killing, and post-antibiotic effect.
2. List the PK/PD parameter(s) that best correlate with the antimicrobial activity and clinical efficacy for fluoroquinolones, aminoglycosides, beta lactams, vancomycin, and other agents (macrolides/azilides, clindamycin, metronidazole, streptogramins, and oxazolidinones;
3. Describe four practical applications of PK/PD principles reviewed in this session, and outline the some limitations and future research required.

WHAT'S NEW IN CARDIOLOGY & ID? ANTIBIOTICS FOR ACS

Fawziah Marra, BSc(Pharm), PharmD, FCSHP, University of BC and BC Centre for Disease Control, Vancouver

Atherosclerotic cardiovascular disease, the major cause of death in the Western world, is a multi-factorial process with a large number of interacting variables. Despite a significant understanding of many of these variables, the underlying causes of atherosclerosis are still not clearly defined. Although the epidemiologic studies evaluating this issue are controversial, histopathologic and microbiologic studies have consistently found Chlamydia pneumoniae antigens from artherosclerotic arteries, suggesting a possible association between the development of atherosclerosis and chronic bacterial infection. Because Chlamydia pneumoniae is sensitive to a variety of antibiotic agents, it has been proposed that antimicrobial therapy might be useful in the primary or secondary prevention of atherosclerosis.

The goal of this session is to provide pharmacists evidence supporting an association between chronic bacterial infection and atherosclerosis, describe the results of preliminary secondary prevention antibiotic treatment trials, and discuss a variety of ongoing and planned large multicenter clinical trials of antibiotics in patients with atherosclerotic heart disease. Potential pitfalls associated with the broad use of antibiotics to treat heart disease are also discussed.

GOALS AND OBJECTIVES OF PRESENTATION

1. To provide pharmacists evidence supporting an association between chronic bacterial infection and atherosclerosis.
2. To describe the results of preliminary secondary prevention antibiotic treatment trials.
3. Discuss the preliminary results of the AZACS and WIZARD studies.

SELF ASSESSMENT QUESTIONS

1. What is the current evidence for presence of C.pneumoniae in artherosclerotic plaques
2. Is it reasonable to treat cardiovascular disease with antibiotics?
3. Should all patients with cardiovascular disease be prescribed azithromycin?

Wednesday, February 5 - mercredi le 5 février

HEY, WHAT ABOUT ME?!

Vivian L. Quiring, BScPharm, Vivian Quiring and Associates Inc., Toronto, ON Email: vivian@vivianquiring.com

Today, pharmacists face tremendous challenges and pressures, both professionally and personally. Complex medications and protocols combined with increased workload, staff shortages, and concerns about patient safety all contribute to rising stress levels.

As health-care providers, pharmacists focus on taking care of others, often neglecting their own needs. "Hey, What About ME?!" emphasizes the importance of taking care of yourself so that you have the energy and stamina to do what you need and want to do. The specific, easy-to-implement strategies will help you increase energy and manage stress so you can better handle life's challenges.

Specific skills that will be provided include 4 simple and effective ways to raise your energy level. A surefire way to reduce negativity (yours and others!) can be applied both at work and at home. You will acquire

'de-stressing' techniques to help you relax and revitalize during the day, and help you fall asleep at night.

The benefits will be multiplied after the conference when you share these techniques with others in the workplace and in your personal life.

GOALS AND OBJECTIVES OF PRESENTATION

1. To provide techniques for taking better care of yourself, so that you have the energy and stamina to do what you need and want to do, both professionally and personally.
2. To apply specific, easy-to-implement strategies which will help you increase energy and manage stress so you can better handle life's challenges, and enjoy life more.

SELF ASSESSMENT QUESTIONS

1. The body's response to stress is physical, mental and behavioural. State 3 symptoms in each category. Consider which you might be experiencing.
2. Life events can be stressful, affecting both our home life and the workplace. List 4 daily energizers that you can implement and encourage your staff / family / friends to utilize to better manage stress and increase energy.
3. People respond in different ways to the same event. How can you modify your response to events so that you are taking better care of yourself?

PHARMACISTS AND NURSE PRACTITIONERS: A PARTNERSHIP THAT WORKS

Kori Leblanc BScPhm, Julie Kim RN, MN/ACNP

St. Michael's Hospital, Toronto ON

The role of the pharmacist providing direct patient care has evolved considerably in response to changes in the way health care is delivered over the last several years. One such impact has been the creation of the expanded nursing role and its evolution into the Acute Care Nurse Practitioner (ACNP) position. It is important for pharmacists to understand the impetus for the creation of this role, the evolution of the ACNP program in Ontario, the varying clinical roles played by ACNPs and the medico-legal issues surrounding their practice.

It is also important that pharmacists have an appreciation for the education and training background of ACNPs. Pharmacists, by virtue of their specific, focused, in-depth training and experience in the area of pharmaceuticals, are an important member of any health care team, and are in a position to impact drug-related patient outcomes even further through collaboration with ACNPs.

The goal of this session is to provide pharmacists with the background information they need to understand the role of the ACNP in providing direct patient care; to provide a working example of a collaborative, successful pharmacist-nurse practitioner relationship and to highlight ways of optimizing patient wellness and outcomes while respecting the unique qualities and abilities of each individual professional.

Goals and Objectives

- to provide pharmacists with an appreciation of how a collaborative practice between the roles of the nurse practitioner and the pharmacist provide positive patient outcomes and enhance quality patient care.
- to provide pharmacists with an understanding of the ACNP role in Ontario, including educational preparation, clinical practice settings, and medico-legal issues.
- To provide a working example of a collaborative, successful pharmacist-nurse practitioner relationship and to promote discussion around the establishment of such a relationship in other clinical settings.

Self Assessment Questions

1. Identify the impetus and background development of the ACNP role in Ontario.
2. Identify the benefits of collaboration between pharmacists and ACNPs in enhancing patient care.

PRACTICAL CONSIDERATIONS FOR ESTABLISHING AND MAINTAINING A PHARMACY CONSULTING BUSINESS

Donna Wheeler-Usher, BSc Pharm, MS Pharm, Pharmacy Consultant, Halifax, Nova Scotia

The decision to become a pharmacy consultant is exciting; as it is the door to professional independence. As one enters the business of consulting a number of questions need to be addressed while starting and several times once your business is established.

Self-assessment is integral to determining whether consulting is truly for you. It is also an important exercise to conduct at different stages of your consulting business as it grows and changes in order to identify whether you are on the same path as your business. The examination of your present financial picture and where you see yourself in five years will determine the type of business you want to build towards and influence decisions such as company organization (sole proprietorship vs. partnership vs. corporation) office site and billing structure.

Consideration must be given to practical areas involving the establishment and maintenance of a business. Initial office set-up costs, overhead, benefit management, pension plan, continuing education, professional development, business promotion, and accounting are all factors which require your constant attention.

Focusing your services and identifying your consulting target market are two factors that assist you in developing short and long term goals for you as a professional and for your business. Finally, the ongoing comparison of personal goals to your professional/business goals will help determine how successful your consulting business can be.

GOALS AND OBJECTIVES OF PRESENTATION

1. To assist pharmacists in determining whether consulting is a viable professional and business option.
2. To identify key questions that should be addressed while establishing a consulting business.
3. To give pharmacists a clear indication as to what is required to build and maintain a successful pharmacy consulting business.

SELF ASSESSMENT QUESTIONS

1. What factors must be taken into consideration prior to establishing a pharmacy consulting business?
2. What kind of financial assistance programs are available to small business owners?
3. What are the benefits/risks of sole proprietorship vs. general partnership vs. corporation?
4. What questions do I need to ask myself in order to determine whether I am striking a healthy balance with my personal life and my professional consulting life?

REFERENCES/SELECTED READINGS

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INITIATING RESEARCH

Scott Walker, MSc.Phm., FCSHP. Coordinator Research and Quality Control, Pharmacy, Sunnybrook & Women's Health Sciences Centre and University of Toronto, Toronto, ON.

Two current areas of focus in institutional medicine in recent years, Practice Based Research and Evidence-Based Medicine have created both a demand for research and the pressure to become involved in research for the clinical pharmacist. As a result, one of the many challenges facing contemporary pharmacy practitioners is how to integrate research into their clinical practice. While many pharmacists would like to get involved in research, most feel that there are many barriers to initiating a research project. These barriers include: insufficient time; lack of experience, training or funding; and questions of where to start as well as how to start and where to get help.

Pharmacists interested in starting to be involved should realise that they (i) need some administrative support, so that the time required to complete the research, even if small, is agreed to in principle by their supervisors and (ii) should start small, and align themselves with other pharmacists or researchers so that they develop some experience before embarking on their own project. Initial projects ideal for "new" researchers are case reports and literature evaluations. A case report or literature evaluation will carry with it all of the demands of a larger project, but in distinctly smaller packets. It will demand a thorough literature search, consideration of alternative hypothesizes (case and effect), in depth analysis, preparation of a report and submission for publication. The only requirement that a larger study will have, that case report or literature evaluation will not have, is the consideration for funding.

As a pharmacist becomes more experienced, or if they wish to start off with larger projects, the pharmacist should realise that most projects are the result of a team effort. A pharmacist new to research needs to understand that they may have to join an already established research team and assist in projects that the team may have already initiated, before influencing the team to embark on a project of interest to the pharmacist.

As for research ideas, most pharmacists should have no problem identifying suitable projects, because of the numerous gaps in medical and pharmaceutical knowledge that exist in patient care today. Choosing a small, clearly defined question, which might only answer one of the numerous questions presented to the pharmacist during daily clinical exposure will represent the first step in initiating practical practice based research.

GOALS AND OBJECTIVES OF PRESENTATION

1. To provide pharmacists with an understanding of the need to complete practice based research.
2. To provide pharmacists with an understanding of how to initiate research within their clinical environment.
3. To provide pharmacists with an understanding of the entire life cycle of a research project.

SELF ASSESMENT QUESTIONS

1. Who in my institution could I partner with to assist me in completing research?
2. What would be a reasonable first project that I could initiate given the time constraints that I find in my daily clinical practice?

RECENT CLINICAL TRIALS-WOMEN'S HEALTH INITIATIVE-POINT-COUNTERPOINT

Thomas ER Brown, PharmD Leslie Dan Faculty of Pharmacy and Sunnybrook and Women's College Health Science Centre – Toronto, Ontario

The goal of this session is to assist pharmacists in their understanding of the current role of Hormone replacement therapy.

Hormone replacement therapy was therapy at every menopausal woman should consider. Indications for therapy were for the relief of menopausal symptoms as well as osteoporosis and cardiovascular disease prevention. The Women's Health Initiative has raised questions as to the appropriate use of HRT. Many women and health care providers reacted very suddenly to the results of this trial and as a result HRT was discontinued out of fear. This session will review the results of this trial and other important studies in order to define the current role of HRT for menopausal women.

Goals and Objectives

1. Review the results for the WHI – study
2. Define the role of HRT for menopausal women

Self Assessment Questions

1. What are the current indications for HRT?
2. Do all HRT regimens have the same risks/benefits?
3. How do you care for women who wish to discontinue HRT therapy?

Sunday, February 3 10:00 – 10:45 – Frontenac Foyer

1. Levofloxacin-Induced Seizure
2. Outcome Analysis of a Pharmacist-Directed Seamless Care Service: A randomized-Controlled Trial
3. Maintenance of Improved Lipids after Discharge from a Cardiovascular Risk Reduction Clinic
4. Twelve-Hour Versus 24-Hour Creatinine Clearance in Critically Ill Paediatric Patients
5. Assessment of a Low Dose Weight-Adjusted Unfractionated Heparin Nomogram in Patients with Acute Coronary Syndromes (ACS)
6. Evaluation of the Implementation of a Dosage-Controlled Medication System on Reported Medication Incidents and Staff Satisfaction at a Child Mental Health Facility
7. Anti-Xa Monitoring of Enoxaparin for Acute Coronary Syndromes in Patients with Renal Disease
8. A Meta-Analysis to Evaluate the Immunogenicity of Influenza Vaccine in Patients with Rheumatoid Arthritis and Systemtic Lupus Erythematosus
9. Drug Use Review of Intravenous Amiodarone in the Intensive Care Setting
10. Oral Fluconazole for Treatment of Candidal Endophthalmitis in a Very-Low-Birth-Weight Infant
11. Comparison of the FPG and OGTT Tests for Screening of Type 2 Diabetes in High-Risk Individuals
12. Development of a Learning Module on Non-Prescription Medications for Non-Pharmacist Health Care Providers
13. Development of a Learning Module on Chemoprophylaxis for Occupational Exposure to Blood-Borne Viruses
14. Stability of Alprostadil in Dextrose Solutions at 4C and Room Temperature (24C)
15. Physical Compatibility of Pantoprazole with Selected Medications and IV Fluids
16. Stability of Docetaxel in Normal Saline at Room Temperature
17. Analysis of the Glucosamine Content of Commercially Available Glucosamine Preparations
18. A Longitudinal Review of Depression in an Elderly Population
19. Development of a Protocol to Monitor for Ototoxcity in Patients Receiving Long-Term Aminoglycoside Therapy
20. Design of a Needs-Based Human Immunodeficiency Virus (HIV) Certificate Program (CP) for Patient

Monday, February 3 13:45 – 15:00 – Exhibit Hall – Special Poster Session - Hand Held Devices

1. Point of Care Use of a Personal Digital Assistant (PDA) for Patient Consult Management in an Outpatient Parenteral Antibiotic Therapy (OPAT) Program: Pharmacist Experience in a Major Canadian Teaching Hospital
2. A Comparison of Personal Digital Assistant (PDA) Database Software: A Guide to Choosing an Application for Professional Practice Data Management
3. The Evaluation of Electronic Handheld Pharmacopoeia Content by Hospital Pharmacists – What do Pharmacists want from a Palm Pharmacopoeia?
4. Evaluation of Handheld Electronic Pharmacopoeias for the Intensive Care Unit
5. Development of a Pharmacist's Tool for Recording Patient Care Services on a Personal Digital Assistant.
6. Evaluation of Palm® OS Patient Monitoring Applications for the Infectious Diseases Consult Service
7. Making Vancouver Hospital's Parenteral Drug Therapy Manual Available on a Personal Digital Assistant (PDA)
8. Development of "Bedside EBM": A Handheld Tool for Storing, Retrieving, and Applying Clinical Trial Data at the Point-of Care
9. A Handheld Tool for Estimating Individualized Risk of Stroke and Serious Bleeding with Warfarin or Aspirin in Atrial Fibrillation Patients
10. Making Vancouver Hospital's Formulary Handbook Available on a Personal Digital Assistant (PDA)
11. Evaluation of Drug Information Programs for Palm™ OS Handheld Devices as a Resource for Canadian Hospital and Community Pharmacists
12. Transforming Oncology Pharmacy Practice: Innovative Patient Care Using a Personal Digital Assistant (PDA)
13. Application of a Personal Digital Assistant in a Pharmacy-Directed Warfarin Dosing Program
14. The Selection and Implementation of a Personal Digital Assistant Software Program for Data Collection and Management by Pediatric Critical Care Pharmacists
15. The Pharmaceutical Care Analysis Project – Results of a Beta Phase
16. Dissemination of Pharmacy Information to Palm OS™ Handhelds Using The iSILO™ Document Format
17. Clinical Services in a Intensive Care Unit Supported by a Personal Digital Assistant Synchronized with the Pharmacy Information System

Tuesday, February 4 10:15 – 10:45 – Exhibit Hall

1. Implementation of the Canadian Forces Drug Exception Centre
2. Provision of Non-Prescription Medications to Canadian Forces Members through Civilian Pharmacies: A Pilot Project
3. Provision of Non-Prescription Medications by Pharmacists in the Canadian Armed Forces
4. Acceptability of Chlorofluorocarbon-Free Inhaler Substitution by Canadian Forces Members: A Continuous Quality Improvement Initiative
5. Outcomes Associated with the Inclusion of Sildenafil as a Benefit item on the Canadian Forces Drug Plan
6. Identification of Strategies to Reduce Preventable Drug-Related Morbidity
7. The Incidence of Preventable Drug-Related Morbidity in Seniors
8. Impact of a Pharmacist-Directed Seamless Care Service on Clinical Outcomes and Processes of Care
9. Warfarin Dosing in an Outpatient Clinic
10. Examining the Value of the Residency Project
11. Order Entry Delegated to Pharmacy Technicians
12. Development and Evaluation of a Clinical Management Guideline for Suspected Hospital-Acquired Pneumonia in Intensive Care Unit Patients (HAPI)
13. Carboplatin Hypersensitivity Reaction
14. Advanced Pharmacist Services on a Cardiac Short Stay Unit
15. Implementation of a Pharmacist Initiated Pneumococcal/Influenza Vaccination Program at a Tertiary Care Institution
16. Assessment of Patients' Knowledge of Warfarin: Identifying Gaps and need for Improved Patient Education
17. Evaluation of Cardiac Risk Factors in Renal Transplant Recipients
18. The Safety of Morphine in Preterm and Term Neonates Undergoing Percutaneous Venous Catheter Placement
19. Hospital Pharmacy Technician Work Redesign
20. The Effect of Negative Media Events on Medication Taking Behaviour in Adults - A Systematic Literature Review.

Wednesday, February 5 10:15 – 11:00 – Frontenac Foyer

1. An Assessment of the Affiliation Between Authors and Sponsors of Published Clinical Trials Over a 20-year Period: An Unhealthy Alliance?
2. Optimizing Management of the Critically Ill Pharmacogically Paralyzed Mechanically Ventilated Patient
3. Development of an ICU Specific Evidence-Based Intravenous Electrolyte Replacement Algorithm
4. Pharmacist Computer Skills and Needs Assessment Survey
5. Facilitating Delivery of Continuing Pharmacy Education Via Streaming Media in a Large Canadian Tertiary Care Teaching Hospital
6. Perceptions of Professional Services of a Pharmacy Department: A Comparison of Stakeholder Groups
7. Optimizing Care of Diabetes Patients with Ischemic Heart Disease
8. What's New in Anticoagulation Practice? Innovative Strategies for Inpatient and Outpatient Management
9. Anticoagulation Training, Certification & Resource Team for Canada
10. Community-Based Warfarin Co-Prescribing and Point of Care INR Testing
11. The Influence of an Enriched Summer Program on Pharmacy Students' Future Career Decisions
12. Drug Utilization Review of Surgical Prophylaxis in High Risk Cesarean Section
13. Development of a Labour and Delivery Medication Compatibility Chart
14. Quinidine and Quinine Induced Esophagitis
15. A Systematic Review of Gastroparesis Medication Literature in Patients with Diabetes
16. Review of a Pharmacist-Run Hospital Clinic Based Smoking Cessation Program
17. Development of a Bilingual Pharmacy Intranet Website
18. The Impact of Protocol-Directed Sedation in the Medical-Surgical Intensive Care Unit at the University Health Network
19. Establishing a Dedicated Computer Terminal for Patient Access to Oncology Teaching Material
20. Establishing Preprinted Oncology Orders in a Community Hospital Outpatient Oncology Clinic
21. Pharmacokinetics of Oral Ciprofloxacin in Non-Infected Patients on Continuous Cycling Peritoneal Dialysis

LEVOFLOXACIN-INDUCED SEIZURE

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A 74-year old woman from a regional mental health facility was admitted to hospital for management of possible aspiration pneumonia. Past medical history included bipolar affective disorder (rapid cycling), Parkinson's features, poor nutrition, and moderate-severe oral dysphagia. The patient had no prior history of seizures. Medications on admission included metronidazole, cefuroxime, lamotrigine 100 mg PO Q AM, 112.5 mg Q 1200, loxapine, lorazepam, zopiclone, lactulose, senna, and acetaminophen.

Pertinent laboratory data included LKC of 16.3 and creatinine clearance of 52 mL/min. Neurological examination revealed no obvious tremor or facial droop and the patient was spontaneously moving all four limbs.

Antibiotics were changed to levofloxacin and metronidazole. On day 2 of hospitalization a swallowing assessment indicated the patient was at high risk of ongoing aspiration. At this time all oral medications were held or changed to IV.

On day 6 a third swallowing assessment was attempted. Initially the patient was alert and oriented but then experienced sudden onset of left eye twitching and became unresponsive. The twitching progressed to include the left mouth and arm, lasting approximately 5 minutes. Upon resolution of the first, the patient began to seize a second time. With no obvious medical etiology the possibility of levofloxacin-induced seizure was considered. Levofloxacin was discontinued and lamotrigine was reinitiated without further evidence of seizures. The patient was later transferred back to the mental health facility.

This case illustrates the risk of CNS effects with levofloxacin and illustrates some of the risk factors involved in levofloxacin-induced seizures.

OUTCOME ANALYSIS OF A PHARMACIST-DIRECTED SEAMLESS CARE SERVICE: A RANDOMIZED-CONTROLLED TRIAL

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Rational of Study: Several seamless care services have been implemented in recent years. However, few rigorous evaluations have been published.

Objective of Study: To determine the impact of a pharmacist-directed seamless care service on economic, clinical and humanistic outcomes.

Methods: This randomized-controlled trial was conducted over a 15-month period. The intervention patients received in-depth pharmaceutical care from the clinical pharmacist prior to discharge. The ECHO model was used to evaluate the service. Economic (ER visits, readmissions, and MD office visits), clinical (drug-therapy problems (DTP) and adherence), and humanistic (health-related quality of life (HRQOL) and satisfaction) outcomes were measured.

Results: Recruitment targets were met with 134 patients in the intervention group and 119 in the control group. The service had a marginal effect on economic outcomes. An average of 3.73 DTPs were found per intervention patient. Adherence improved significantly in the intervention group 6 months post discharge. Satisfaction surveys indicated that physicians, nurses, patients and community pharmacists all saw value in the service. HRQOL showed a significant increase in the role physical domain in the intervention patients.

Conclusions: This seamless care service has enhanced collaboration between health-care providers and positively influenced clinical and humanistic outcomes in patients while having a marginal impact on economic outcomes.

MAINTENANCE OF IMPROVED LIPIDS AFTER DISCHARGE FROM A CARDIOVASCULAR RISK REDUCTION CLINIC

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Faculty of Medicine & Dentistry, University of Alberta1; Division of Cardiology2, Division of Endocrinology & Metabolism3, and Cardiovascular Risk Reduction Clinic4, University of Alberta Hospital, Edmonton, AB.

Background: Evidence from RCTs conclusively demonstrates the benefits of reducing lipids. Specialty cardiovascular risk reduction clinics (CRRC) increase the proportion of patients attaining recommended lipid targets; however, it is not known if the benefits are sustained after discharge.

Purpose: We evaluated the impact of a CRRC on lipid levels and assessed the long-term effect of a CRRC in maintaining improved lipid levels following discharge.

Methods: Medical records of consecutive dyslipidemic patients discharged from a tertiary hospital CRRC form 1991-2001 were retrospectively reviewed. Excluded patients failed to return for $1 follow-up. Primary physicians were contacted for most recent lipid profiles (MRLP) since CRRC discharge.

Results: CRRC impact was evaluated in 1050 patients (median follow-up = 466 days) and significant improvements were seen in all lipid parameters (baseline [BL] vs. discharge [DC]). MRLP were available for 419 patients - median follow-up = 827 days. Total cholesterol (TC), low-density lipoprotein (LDL), and triglycerides (TG) levels were maintained, while high-density lipoprotein levels (HDL) and TC/HDL levels improved slightly after discharge.

Parameter	CRRC (n=1050)				Post-CRRC (n=419)			
(mmol/L)	BL	DC†	Change	P	DC†	MRLP	Change	P
TC	7.02	5.74	-1.28	<0.0001	5.83	5.74	-0.09	NS
LDL	4.26	3.44	-0.82	<0.0001	3.48	3.39	-0.09	NS
HDL	1.12	1.22	+0.10	<0.0001	1.25	1.29	+0.04	0.001
TG	4.44	2.61	-1.83	<0.0001	2.67	2.69	+0.02	NS
TC/HDL	6.64	5.00	-1.64	<0.0001	4.99	4.75	-0.24	0.003

†NS difference between cohorts.

Conclusions: We demonstrated that a CRRC can improve lipid levels and that benefits are sustained once patients are returned to the care of their primary physician.

TWELVE-HOUR VERSUS 24-HOUR CREATININE CLEARANCE IN CRITICALLY ILL PAEDIATRIC PATIENTS

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Rationale: Timely and non-invasive methods to assess renal function are important to guide medication dosage adjustments in critically ill paediatric patients. This could prevent dose-related toxicities caused by renally-eliminated medications.

Objectives: To determine whether creatinine clearance (CrCl) measured from two consecutive 12-hour urine collection periods agreed with each other and with a 24-hour collection period in critically ill paediatric patients.

To assess whether CrCl could be reliably predicted by the Schwartz equation.

Study Design & Methods: This was a prospective, observational study. Urine was collected for 24 hours in two 12-hour aliquots via indwelling urinary catheters in 60 critically ill patients. CrCl values were determined for each 12- and 24-hour period. The glomerular filtration rate (GFR) was estimated using the Schwartz equation. The intraclass correlation coefficients (ICC) between different collection periods and different renal function assessment methods were determined to evaluate agreement. An ICC of >0.8 was considered to indicate good agreement.

Results: The ICC between the two 12-hour CrCl was 0.8553. The ICC between the first 12-hour and 24-hour CrCl was 0.9605 and the ICC between the second 12-hour and 24-hour CrCl was 0.9602. The ICC between the 24-hour CrCl and Schwartz estimate of GFR was 0.7046.

Conclusions: All comparisons of 12- and 24-hour CrCl indicated excellent agreement. In contrast, the Schwartz equation was not a reliable assessment of renal function. In critically ill children, a 12-hour CrCl may be used to estimate the GFR and guide the dosage requirements of renally-eliminated medications to prevent dose-related toxicities.

ASSESSMENT OF A LOW DOSE WEIGHT-ADJUSTED UNFRACTIONATED HEPARIN NOMOGRAM IN PATIENTS WITH ACUTE CORONARY SYNDROMES (ACS)

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Rationale: Antithrombotic therapy including heparin represents the current standard of care for patients hospitalized with ACS. Since a weight-based unfractionated heparin nomogram with a lower target activated partial thromboplastin time (aPTT) may result in lower mortality, stroke, and bleeding complications, we revised our heparin nomogram accordingly. The new nomogram used an initial bolus of 60 units/Kg (maximum 4000 units), and an initial infusion rate of 12 units/Kg/hr (maximum 1200 units/hour). In comparison, the traditional nomogram called for a bolus dose of 5000 units, followed by an infusion set at a rate of 1000 units/hour.

Objective: To evaluate the effectiveness of a newly developed low dose weight-adjusted unfractionated heparin nomogram (target aPTT 50-70 seconds) in comparison to a traditional non-weight adjusted heparin nomogram (target aPTT 55-90 seconds) in the management of ACS. The newly developed nomogram is specifically used in patients who are concomitantly treated with either a gylcoprotein IIb/IIIa receptor antagonist (GP IIb/IIIa) or a fibrinolytic agent. Specific endpoints measured included: (1) time to reach therapeutic aPTT, (2) proportion of patients reaching a therapeutic aPTT in 24 and 48 hours, and (3) number of adjustments required to maintain two consecutive therapeutic aPTT.

Methods: A retrospective and prospective review was conducted on 100 patient charts identified by staff pharmacists.

Results: In the old nomogram (ON), it took 36.9 hours compared to 20.3 hours with the weight-adjusted nomogram (WAN) to reach a therapeutic aPTT (p = 0.0001). At 24 and 48 hours, WAN compared to ON had 75.9% versus 38.1%, and 92.9% versus 64.9% respectively reached a therapeutic aPTT (p= 0.001 and 0.035). There was also a trend for fewer adjustments required to maintain two consecutive therapeutic aPTTs with WAN (1.92 versus 2.80 hours, p<0.05).

Conclusion: The new low dose weight-adjusted heparin nomogram results in more patients reaching a therapeutic aPTT and more rapidly than the traditional one. There is also a potential benefit in less nursing dose adjustments required.

EVALUATION OF THE IMPLEMENTATION OF A DOSAGE-CONTROLLED MEDICATION SYSTEM ON REPORTED MEDICATION INCIDENTS AND STAFF SATISFACTION AT A CHILD MENTAL HEALTH FACILITY

Ryan Murphy [1,3], Adil Virani, Pharm D [1,2,3], Rita Caldwell, B.Sc.(Pharm), MHSA[1,3] [1] College of Pharmacy [2] Department of Psychiatry, Dalhousie University; [3] IWK Health Centre, Halifax Nova Scotia

Background: Assurance of safe medication administration is a high priority in any health care facility. To prevent medication incidents, it is important to simplify and tailor the administration of medications where possible. This study examines the change in reported medication incidents at the ???, where children with disruptive behavioral disorders are administered medications by non-nursing staff.

Objectives: To determine the impact of blister packing on reported medication incidents and staff satisfaction at a child mental health facility.

Methods: A retrospective analysis comparing two years before blister pack implementation to six months post implementation. Reported medication incidents were analyzed at monthly intervals and categorized by severity based on the ??? Medication Incident Severity Scale. A Mann-Whitney test was utilized to determine if a statistically significant change in reported medication incidents occurred upon implementing blister packs. Also, surveys were distributed to all staff members at the mental health facility to determine satisfaction with blister packing.

Results: The implementation of blister packing resulted in a decrease in the number and severity of reported medication incidents (p=0.0266). Medication incidents decreased 76.5% after initiating blister packing. Also, staff members believed that blister packing was beneficial and should be continued in the future.

Conclusion: Blister packing is an effective strategy at decreasing reported medication incidents and improving staff satisfaction.

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ANTI-XA MONITORING OF ENOXAPARIN FOR ACUTE CORONARY SYNDROMES IN PATIENTS WITH RENAL DISEASE

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There is limited data on dosing of enoxaparin in renal patients secondary to routine exclusion of this population in clinical trials. To account for the potential delayed elimination in renal patients our hospital developed guidelines for adjusting enoxaparin dosing based on anti-Xa monitoring. The objective of this study was to evaluate adherence to these guidelines.

A total of 72 separate acute coronary syndrome patient admissions were retrospectively reviewed. All patients had anti-Xa levels taken and a creatinine clearance <30 mL/min during their enoxaparin therapy. The average anti-Xa level at the twice daily dose was 0.72 IU/mL and 0.40 IU/mL for the once daily dose. With twice daily dosing only 6% of the levels were in the target range compared to 36% with once daily dosing. Of the 22 events that had a change of therapy from twice daily to once daily dosing, 5% of anti-Xa levels were &0.5 IU/mL with twice daily compared to 68% after the change to once daily. During hospitalization, 7% of patients died and 6% had a myocardial infarction. Minor bleeding was the most common adverse event (8%).

Although the relation between anti-Xa activity, efficacy, and adverse effects has not been definitively established, anti-Xa levels can assist with dosing of enoxaparin in renal patients. Our hospital guidelines are effective in adjusting dosing to reach target anti-Xa levels.

A META-ANALYSIS TO EVALUATE THE IMMUNOGENICITY OF INFLUENZA VACCINE IN PATIENTS WITH RHEUMATOID ARTHRITIS AND SYSTEMIC LUPUS ERYTHEMATOSUS.

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Rationale: Rheumatoid arthritis (RA) and systemic lupus erythematosus (SLE) are serious chronic diseases that affect 1% of the population. Early use of cytotoxic and immunosuppressive drugs are considered to be the standard of care. These patients are immunocompromised due to their aggressive drug regimens and thus are at increased risk of influenza infection. The immunogenicity and safety of vaccines in the immunocompromised population has been a matter of controversy; some studies have shown that patients who are immunocompromised have a sub-optimal immune response while other studies have shown that the vaccines are safe and can induce protective antibody levels in a substantial portion of these patients.

Objectives: To evaluate the immune response of influenza vaccine in RA/SLE patients compared to healthy controls.

Methods: A search of the English-language literature using MEDLINE, EMBASE, Current Contents, and Cochrane database from 1966 to October 2002 and a manual search of references from retrieved articles was performed. Prospective, controlled trials evaluating the immunogenicity of influenza vaccine in RA or SLE patients and healthy controls were considered. Immunogenicity was defined as number of patients who achieved a four-fold increase in the hemagglutination-inhibition (HI) antibody titer four weeks after immunization.

Results: Five studies were included for the meta-analysis (N=334). For the H1N1 influenza strain, 78% of patients in the RA/SLE group compared to 90% of healthy controls achieved a four-fold rise in the HI antibody titer (p=0.03). Tests for statistical and clinical heterogeneity were not significant.

Conclusions: A smaller proportion of patients with RA/SLE reach the target of a four-fold rise in HI antibody titer compared to healthy controls; however, a substantial proportion of these patients were still protected by the vaccine thus justifying its routine administration.

DRUG USE REVIEW OF INTRAVENOUS AMIODARONE IN THE INTENSIVE CARE SETTING

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Rationale: Intravenous (IV) amiodarone use in the medical/surgical ICU (M/SICU) setting was associated with annual expenditures of $54,000 for 2001/2002 in this institution. Amiodarone IV is approved in Canada for life-threatening ventricular arrhythmias, but randomized clinical trials for other indications (eg. atrial fibrillation) are lacking. It was hypothesized amiodarone IV was being used first-line instead of approved, cost-effective agents.

Objectives: To determine the indication, dose and duration of therapy of amiodarone IV, other therapies used, adverse effects and clinical outcomes.

Methods: Charts were reviewed retrospectively for 27 patients identified through the pharmacy computer from January to July 2001.

Results: There were 30 episodes of atrial fibrillation (AF), 6 episodes of ventricular tachycardia (VT), 8 episodes of mixed AF/VT, and 1 cardiac arrest. Amiodarone IV was initiated first-line in 5 cases (2 VT and 3 AF). There was a wide variety of other therapies used. Adverse effects were 3 cases of hypotension and 1 case of bradycardia. The average length of amiodarone infusion was 35 hours. There were 32 positive clinical outcomes in which AF or VT was converted to normal sinus rhythm (NSR) and 18 negative outcomes.

Conclusions: The selection of drug, dose, and the duration of treatment varied widely. Guidelines for the treatment of cardiac arrhythmias in the ICU are recommended, with specific reference to amiodarone.

ORAL FLUCONAZOLE FOR TREATMENT OF CANDIDAL ENDOPHTHALMITIS IN A VERY-LOW-BIRTH-WEIGHT INFANT

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Rationale: Candidal endophthalmitis is a vision-threatening infection which occurs most frequently as a complication of candidemia. Clinical data on its treatment, especially in neonates, is scarce. This report describes an infant girl with bilateral candidal endophthalmitis treated successfully with oral fluconazole.

Case summary: A female infant (24 3/7 weeks gestational age; birth weight 653 g) developed candidemia at 10 days of life. Candida albicans was identified in blood and urine cultures. Intravenous amphotericin B and 5-flucytosine were started. While still on both antifungals, funduscopic examination at 10 weeks of age revealed findings consistent with candidal endophthalmitis in both eyes. Amphotericin B and 5-flucytosine were discontinued. Oral fluconazole at 12 mg/kg once daily was started. Subsequent funduscopic examinations showed gradual improvement and complete resolution of the eye infection by 4 weeks. Meanwhile, serum GGT climbed from a baseline of 159 IU/L by about 100 IU/L per week to a peak of 793 IU/L 6 weeks into fluconazole therapy. After reducing the dose to 6 mg/kg/day, serum GGT dropped by approximately 200 IU/L per week back to baseline. Fluconazole was given for a total of 3 months with no other complications.

Analysis: Unlike amphotericin B, fluconazole penetrates well into cerebrospinal fluid, joint spaces, aqueous and vitreous humors, retina, choroid, and most other body fluids. Optimal drug, dosage, and duration for treating candidal endophthalmitis effectively and safely remain to be established.

Importance: Various antifungals have different biodistribution, activity spectra, and adverse effects. Awareness of these differences helps to optimize and monitor antifungal therapy.

COMPARISON OF THE FPG AND OGTT TESTS FOR SCREENING OF TYPE 2 DIABETES IN HIGH-RISK INDIVIDUALS

Investigators: Donna Tran B.Sc.Phm., University of Alberta Hospital, Edmonton, AB; Christine Papoushek Pharm.D.; Anita Lambert-Lanning M.L.S.; Michael Evans M.D., University Health Network - Toronto Western Hospital, Toronto, ON

Rationale: Screening for diabetes has the potential for early detection of the disease in order to implement lifestyle changes and other treatments to prevent the progression of the disease. The two tests used for screening are the fasting plasma glucose test (FPG) and the oral glucose tolerance test (OGTT). Currently the FPG is mainly used due to its convenience and lower cost. However, there is evidence from population based studies that using the FPG alone may result in under-detection of diabetes. As well, the use of FPG alone may not be detecting those with impaired glucose tolerance (IGT), a category of abnormal glycemia that is associated with the progression to diabetes and its complications.

Study Objectives: The primary objective was to examine the incidence of diabetes using the current screening test, the FPG, as compared to the OGTT. The secondary objectives were to assess the strength of the association between the FPG and the OGTT; to determine the incidence of impaired fasting glucose (IFG), and impaired glucose tolerance (IGT); and to examine the association between IFG, IGT, IFG & IGT, and diabetes with each of the risk factors used to screen patients in this study.

Study Design and Methods: This was a prospective, paired comparison study. Patients 45 to 79 years old visiting their primary care provider at the clinic who had at least one risk factor (obesity, hypertension, hyperlipidemia, coronary artery disease, or high-risk ethnicity (Aboriginal, Asian, African or Hispanic)) and none of the exclusion criteria (diabetic, pregnant, allergy to the OGTT) were eligible. The FPG measures blood glucose after a minimum 8 hour fast. The OGTT measures blood glucose two hours after administration of a 75g oral glucose solution.

Results: From December 6, 2001 to May 6, 2002, 111 patients underwent the FPG and OGTT tests. The mean + SD age was 61 + 0.9 years and mean number of risk factors was 1.9 + 0.9. Hypertension and obesity were the most common risk factors, with a prevalence of 61.3% and 64.9%, respectively. The incidence of diabetes using the FPG was 2.7% compared to 11.7% with the OGTT (McNemar, p=0.002). Ten (76.9%) patients with a diabetic OGTT had an FPG <7.0 mmol/L. Eight (61.5%) of those with a diabetic OGTT had a normal FPG. Eighteen (81.8%) of the patients identified with IGT according to the OGTT were considered normal by the FPG. The sensitivity of the FPG for detecting diabetes was only 23% (3 out of 13). The risk factors examined were not significantly different between the patients with DM, IFG, IGT or IFG & IGT. However, there was a trend for a greater proportion of patients with dyslipidemia in the diabetic via the OGTT group than in the non-diabetic group (X2, p= 0.056). The Pearson correlation coefficient that measures the strength of association between FPG and OGTT was 0.531. This reflects a poor linear association between the values from the FPG test compared to the OGTT test.

Conclusions: In conclusion, the use of the FPG alone may not be sufficiently sensitive to identify diabetes in individuals who are at an increased risk of glucose metabolism disturbance. The FPG and OGTT are not strongly correlated to each other, nor are the IFG and IGT categories. While there appears to be a trend that dyslipidemia is a risk factor that is associated with diabetes according to the OGTT, more studies are needed to further elucidate the risk factors that should prompt a clinician to utilize the OGTT.

DEVELOPMENT OF A LEARNING MODULE ON NON-PRESCRIPTION MEDICATIONS FOR NON PHARMACIST HEALTH CARE PROVIDERS

LCol R. Vaillancourt, BPharm, PharmD; J. Ma, BScPhm, PharmD., Canadian Forces Health Services, Directorate of Medical Policy, Pharmacy Policy & Standards. Ottawa, ON.

BACKGROUND: Non-pharmacist health care providers, such as nurses and medical assistants, are currently required to dispense non-prescription (OTC) medications to patients in the Canadian Forces. To ensure that these personnel are providing OTC medication in a suitable and consistent manner, our department has initiated the development of a learning module to educate these providers on appropriate dispensing of OTC drugs.

DESCRIPTION OF THE LEARNING MODULE: The module will provide information on the pathophysiology, risk factors, and treatments (both pharmacological and non-pharmacological) for 10 common, self-limited medical conditions. The module will be available in both written and electronic format, and will include case-based questions to both stimulate and assess learning.

DEVELOPMENT OF THE LEARNING MODULE: A pharmacy consultant identified various conditions which could be treated using the OTC medications on our benefit list. The following 10 conditions were selected for inclusion in the module: superficial fungal infections, dermatitis, nausea and vomiting, seasonal allergies, common cold, diarrhea, dyspepsia and GERD, muscle spasm, conjuncitivitis, and headaches.

EVALUATION: A series of multiple-choice questions will be incorporated into the module to assess the effectiveness of knowledge acquisition. A separate evaluation form will allow for audience feedback on structure and content of the module. The module will also be submitted for formal accreditation.

IMPACT: Pharmacists may employ this learning module to educate other health care providers about appropriate use of non-prescription medications. This module should also increase awareness of the professional role played by pharmacists, particularly when providing OTC drugs.

DEVELOPMENT OF A LEARNING MODULE ON CHEMOPROPHYLAXIS FOR OCCUPATIONAL EXPOSURE TO BLOOD-BORNE VIRUSES

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BACKGROUND: In June 2001, the Center for Disease Control and Prevention (CDC) issued new guidelines for management of occupational exposures to hepatitis B, hepatitis C, and HIV. Although the new recommendations for drug therapy do not differ dramatically, more information is now provided about individual risk assessment and overall case management. A learning module is thus being developed to inform health care providers about current management strategies for post-exposure prophylaxis (PEP).

DESCRIPTION OF THE LEARNING MODULE: The module will be available in both electronic and written format. Material covered will include updated information on PEP for blood-borne viruses from new CDC guidelines, and case-based questions to stimulate and assess learning.

DEVELOPMENT OF THE LEARNING MODULE: A pharmacy consultant with specialized expertise in the field of PEP identified differences between current CDC guidelines and our existing policies, and suggested relevant learning objectives. For each objective, didactic information and case-based questions were developed. The final module is organized into three separate sections, one for each of the three viruses of concern.

EVALUATION: The module also includes a series of multiple-choice questions for formal evaluation of knowledge acquisition. A separate evaluation form will allow for audience feedback on structure and content of the module. The module will be submitted for formal accreditation.

IMPACT: This module will serve to educate pharmacists and other health care providers about CDC recommendations for management of occupational exposures to blood-borne viruses. Information in this module will also aid the revision of institutional policies regarding PEP.

STABILITY OF ALPROSTADIL IN DEXTROSE SOLUTIONS AT 4C AND ROOM TEMPERATURE (24C).

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Rationale: The product monograph recommends that fresh dilutions of alprostadil be prepared every 24 hours and that any solution more than 24 hours old be discarded. The stability of alprostadil in syringes and a variety of aqueous based solutions over a period of 10 days to 24 weeks has been documented. However, since there are no published reports describing alprostadil stability in dextrose solutions, confirmation of the stability with a valid and stability indicating method is required.

Objective: The objective of this study was to evaluate the stability of 1 µg/mL and 10 µg/mL of alprostadil diluted in either 5% or 10% dextrose stored in polypropylene syringes at 4oC and 24oC for 14 days.

Methods: Alprostadil concentrations (determined by a validated, stability-indicating, liquid chromatographic method), physical inspections, and pH determinations were completed on study days 0, 1, 4, 7, and 14 for all samples.

Results: Maximum deviation from the nominal concentration of standards was less than 3% and analytical reproducibility within a day and between days (CV), averaged less than 1% and less than 5%, respectively. Alprostadil samples retained more than 96.7% of the initial concentration (lower limit of 95% CI of percent remaining on day 14 averaged 94.5%). All solutions remained clear and colorless with no visible precipitate for the study duration. The pH of samples varied by less than 0.1 of a pH unit during storage at 4∞C and 24∞C.

Conclusions: We conclude that 1 µg/mL and 10 µg/mL of alprostadil diluted in either 5% or 10% dextrose and stored in polypropylene syringes at 4oC and 24oC retain more than 94 per cent of the initial alprostadil concentration throughout 14 days of storage.

PHYSICAL COMPATIBILITY OF PANTOPRAZOLE WITH SELECTED MEDICATIONS AND IV FLUIDS.

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Rationale: Patients receiving intravenous (IV) pantoprazole often require concomitant IV drugs and solutions. A search of the product monograph, MEDLINE, IPA, EMBASE, and contact with the manufacturer revealed no Y-site compatibility information.

Objective: The objective of this study was to complete a visual compatibility study of pantoprazole with 17 other IV medications in three intravenous solutions during simulated Y-site injection.

Methods: Seventeen drugs, each at three different concentrations diluted in dextrose 5% in water (D5W) or 3.3% dextrose/0.3% sodium chloride, were selected for compatibility testing with three concentrations (0.16 mg/mL, 0.4 mg/mL and 0.8 mg/mL) of pantoprazole in NS. The seventeen drugs were insulin, vasopressin, octreotide, epinephrine, norepinephrine, dopamine, esmolol, potassium chloride, midazolam, morphine, nitroglycerine, dobutamine, dimenhydrinate, furosemide, ampicillin, cefazolin and ceftriaxone. Solutions were inspected for colour change, clarity, visible precipitate and evolution of gas immediately after mixing and at 15 minutes, 1, 4 and 12 hours. The pH of each solution was measured prior to mixing.

Results: Pantoprazole IV was compatible with 12 of 17 drugs tested for up to 12 hours at 23C during simulated y-site administration. Precipitation occurred with mixtures containing dobutamine with pantoprazole and norepinephrine with pantoprazole. A colour change and a coloured precipitate were observed with the following combinations over the 12-hour study period: octreotide / pantoprazole, esmolol / pantoprazole and midazolam / pantoprazole. In general, mixtures of pantoprazole with esmolol, dobutamine or midazolam were physically incompatible over clinically useful concentration ranges. Octreotide and pantoprazole were compatible when the octreotide concentration was less than 1.5ug/mL. Norepinephrine was compatible with pantoprazole when the norepinephrine concentration was less than 0.1mg/mL.

Conclusion: Admixtures prepared in the clinical setting are subject to greater error than in the laboratory and, therefore, we recommend avoiding Y-site administration of pantoprazole with esmolol, dobutamine, midazolam, octreotide (at concentrations near or greater than 1.5ug/mL) or norepinephrine (at concentrations near or greater than 0.1mcg/mL).

STABILITY OF DOCETAXEL IN NORMAL SALINE AT ROOM TEMPERATURE

Scott E. Walker, MScPhm, Flay Charbonneau BScPhm, Shirley Law, Dip Pharm Tech. Departments of Pharmacy, Toronto Sunnybrook Regional Cancer Centre, and Sunnybrook & Women's College Health Sciences Centre, Faculty of Pharmacy, University of Toronto.

Rationale: The new formulation of docetaxel (Taxotere®) does not require refrigerated storage and has a longer shelf life. The stability of the prepared infusion solution is only 4 hours, identical to the manufacturer's recommendation for the previously marketed formulation. However, many Canadian pharmacists had adopted an extended stability of 28 days at room temperature for prepared infusions, based on data reported by European researchers in 1999.

Objective: The objective of this study was to evaluate the stability of the newer formulation of docetaxel once diluted in saline and stored at room temperature.

Methods: A reverse phase stability-indicating liquid chromatographic method with UV detection at 232 nm was validated prior to study. Validation demonstrated that docetaxel could be quantified accurately and reproducibly. On study-day zero, the new formulation of the commercially available product was reconstituted and diluted in saline to prepare concentrations of 20 and 40 mg per 50 mL in PAB containers. An additional concentration of 40 mg/50 mL was also prepared with the older formulation. All solutions were stored at room temperature, unprotected from light during the study. On study days 0, 3, 7, 14, 25, and 36 the concentration of docetaxel was determined, and physical inspection completed. The pH was measured on days 0 and 36. Usage and wastage was recorded for one month prior to and following the institution of new expiry dates.

Results: During the study period, concentrations observed in all study samples retained more than 95.0% of their initial concentration. Inspection of chromatograms during the stability study failed to reveal any degradation products that were observed during assay validation.

Conclusion: We conclude that 0.4 mg/mL and 0.8 mg/mL solutions of docetaxel dissolved in 0.9% sodium chloride and stored in PAB plastic bags at 25oC retains more than 95 per cent of the initial docetaxel concentration during 36 days of storage.

Sunday, February 3 10:00 – 10:45 – Frontenac Foyer

ANALYSIS OF THE GLUCOSAMINE CONTENT OF COMMERCIALLY AVAILABLE GLUCOSAMINE PREPARATIONS.

Peter Y.Y. Chan, Andrew H. Draves, and Scott E. Walker. University of Toronto, Faculty of Pharmacy and Sunnybrook & Women's Health Sciences Centre. Toronto, Ontario.

Rationale: Label claims for alternative medications have varied widely in many evaluations. The content of glucosamine, has not been previously reported.

Objective: Using a validated liquid chromatographic (LC) fluorescence derivatization method, the between brand and between lot potency of commercially available glucosamine formulations was to be tested.

Method: A LC-fluoresecent method for the analysis of glucosamine content was developed which involves derivatization of glucosamine with fluorescamine to produce a fluorescent product. Glucosamine products, purchased in the Toronto area (62 including multiple lots) and in the US (15), were analyzed for glucosamine content using the LC-fluorescent method. The glucosamine content was compared between brands and between lots to the manufacturer's label claim.

Results: Glucosamine content was measured accurately and reproducibly. Analysis revealed the percentage of label claim varied from 39.54 to 133.77% with a median of 101.54% for glucosamine products purchased in Canada, and from 89.24 to 155.61% with a median of 128.84% for those purchased in the United States. Among a total of 53 different glucosamine products, 18 products were observed to have a glucosamine salt concentration within 10% of label claim. A comparison of the amount of glucosamine base, irrespective of the salt, in 500-mg tablets or capsules varied from 214.41 mg to 629.57mg with a median of 395.81mg. Conclusions: Glucosamine is sold either as a hydrochloride or sulfate salt. Glucosamine sulfate is stabilized through the addition of either sodium chloride or potassium chloride. Some manufacturers base their label claim on a weight of glucosamine salt that includes NaCl or KCl, while others do not. Hence the amount of active glucosamine base provided by sulfate products of the same labeled strength can vary widely depending on whether the manufacturers have taken the weight of the sodium or potassium chloride into account. Glucosamine product labels are very misleading and do not accurately reflect the glucosamine base content of the products, which varies widely. Even when content is based on the salt form present in the product, potency differs significantly in commercially available glucosamine formulations.

A LONGITUDINAL REVIEW OF DEPRESSION IN AN ELDERLY POPULATION

Kat Timberlake, Pharm.D., Patrick Finley, Pharm.D., John Inciardi, Pharm.D., University of California- San Francisco, San Francisco, CA

Study Objectives: Determine the association between depression and late life variables such as cognitive ability, disease status and medication use in order to predict who will develop depression and be able to better treat it.

Examine the medications related to increasing or decreasing incidence of depression with increasing age.

Study Design: The Buck Center Database is a collection of surveys of 1,948 community-dwelling people greater than 55 years old. A series of three comprehensive surveys were administered, in-home, to this population over a 9 year period, in 1990, 1995 and 1999. The Center for Epidemiologic Studies Depression (CES-D) scale was used as a measure of depression in all three surveys. Cognitive ability was measured using a standardized method of recalling a story presented to the patients, immediately after, to obtain an "early recall" score and 15 minutes later to obtain a "late recall" score.

Methods of Data Analysis: A repeated measures ANOVA will be performed in order to assess the longitudinal changes for individual patients. Variables such as age, gender, medication use, disease state, and social support will be controlled for. Only medications with known effects on cognition and depression will be included for study, such as NSAIDs, HRT, antidepressants, anxiolytics and antipsychotics.

Results: Preliminary results indicate that there is no significant correlation between cognitive ability and depression over time. However, age, social support, and a diagnosis of cancer do impact depression scores. Data analysis will be completed in November. We will examine more medication-specific variables and propose implications prior to February of 2003.

DEVELOPMENT OF A PROTOCOL TO MONITOR FOR OTOTOXICITY IN PATIENTS RECEIVING LONG-TERM AMINOGLYCOSIDE THERAPY.

Sandra Tailor, Pharm.D., Sandra Knowles, B.Sc.Phm., Joseph Chen, M.D., Andrew Simor, M.D., Bill Cornish, BSc.Phm., Patti Cornish, BSc.Phm., Anita Rachlis, M.D., Elizabeth Phillips, M.D. Frayda Gorenstein, B.Sc.Phm., Michael Ritchie, B.Sc.Phm., Sunnybrook and Women's College Health Sciences Centre, University of Toronto, Toronto, Ontario.

Rationale and Objective: Irreversible ototoxicity is a potentially preventable complication of prolonged aminoglycoside therapy. We developed an institutional protocol with the objective of monitoring and minimizing the risk of ototoxicity in inpatients prescribed aminoglycosides.

Description of the Ototoxicity protocol: A nationwide survey failed to identify any institution that has a formal monitoring program for ototoxicity due to aminoglycosides. A hospital based protocol for aminoglycoside ototoxicity monitoring was developed by a multidisciplinary team. All eligible patients on aminoglycosides for more than 14 days, or those patients who received previous courses of aminoglycosides within the last 3 months, will have a baseline audiogram and electronystagmography done. These tests will be repeated within 2 to 3 weeks after completion of the baseline testing, or at any time that signs of auditory or vestibular toxicity are present. The protocol assigns responsibility to medical housestaff for writing orders and informing and monitoring patients. Pharmacists will assist in the identification of patients and communication of information about the protocol to medical housestaff.

Sequential Steps to Implement the Program: The protocol was approved by our Pharmacy and Therapeutics committee in September 2002. A P&T Bulletin will be circulated to all medical, nursing and pharmacy staff and in-services for the orthopedics service, pharmacists and housestaff will be conducted.

Evaluation of Program: A pharmacy residency project will be designed with the specific objective of monitoring compliance with the program.

Conclusion: To our knowledge, this is the only formal aminoglycoside ototoxicity monitoring program in Canada. Increasing awareness and dissemination of the feasibility and efficacy of such programs will be instrumental in their widespread application and implementation in other institutions.

DESIGN OF A NEEDS – BASED HUMAN IMMUNODEFICIENCY VIRUS (HIV) CERTIFICATE PROGRAM (CP) FOR PHARMACISTS

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Rationale: The frequency and complexity of drug-related problems in HIV continues to increase and pharmacists need access to educational programs to provide effective HIV pharmaceutical care.

Objectives: To assess the community pharmacists' HIV-related educational needs and design an HIV CP.

Methods: A comprehensive needs assessment (NA) was designed and mailed out to randomly selected community pharmacists. Areas evaluated included pharmacists' preparedness, knowledge, attitudes, perceived learning needs, interests for a CP and demographics. The results were used to develop a conceptual framework for an HIV CP with learning objectives, educational content, teaching strategies and program evaluation.

Results: Five hundred surveys were mailed out and 110 (22.4%) were returned. Many respondents (66%) felt "unprepared" to "somewhat prepared" to offer HIV pharmaceutical care. Gaps were identified in knowledge and attitudes. Only 50% of therapeutically-based questions were answered correctly. Some respondents (20%) did not perceive a role for safer sex and clean needle counselling. Many respondents (30%) were interested in participating in an HIV CP. Pharmacists expressed interest in an in-depth review of antiretroviral topics, general review of HIV disease, and a teaching method that combined lectures, readings, case studies and a take home didactic and case-based exam.

Conclusion: Pharmacists desire and need a CP on HIV to improve their knowledge, skills and attitudes. Based on the results, an HIV CP was developed and will be launched in September 2003. Such a CP can enhance pharmacists' ability to care for HIV – infected patients.

POINT OF CARE USE OF A PERSONAL DIGITAL ASSISTANT (PDA) FOR PATIENT CONSULT MANAGEMENT IN AN OUTPATIENT PARENTERAL ANTIBIOTIC THERAPY (OPAT) PROGRAM: PHARMACIST EXPERIENCE IN A MAJOR CANADIAN TEACHING HOSPITAL

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Objective: To assess the use of a PDA for patient consult management in an Outpatient Parenteral Antibiotic Therapy (OPAT) Program.

Methods: A Palm IIIXE PDA was purchased and available database software reviewed. HandDBaseR was chosen based upon compatibility, low cost, ease of use and relational database (SPSS Version 10) exportability. An 11-table, 80-field database was developed to track consult-related information. The OPAT pharmacist was oriented to the use of the device and database. Concurrent paper-based and PDA-based data collection was maintained for 2 weeks to ensure no data loss. Data for an initial 13-week pilot study period were analyzed.

Results: The PDA database was well accepted by the pharmacist. No data loss was encountered and data export was accomplished without complication. Analysis of the data revealed that during the pilot study, 53 patient referrals were screened, and 27 patients were accepted into the OPAT Program. Most referrals originated from orthopedics (32%), medicine (11%) and cardio thoracic surgery (11%) services. Mean age of enrolled patients was 55 years; and 57% were male. Most common diagnoses were osteomyelitis (19%), surgical wound infections (19%) and bacteremia (15%). Vancomycin (38%) and penicillin (28%) were the most frequently prescribed antibiotics. Mean duration of OPAT therapy was 22 days and a total of 588 hospital days were avoided.

Conclusions: The PDA database has successfully replaced manual case report forms and retrospective computer data entry. We are now able to document and analyze OPAT Program characteristics in a more efficient and timelier manner.

Key Words: PDA, Personal Digital Assistant, Parenteral Therapy, Outpatient Therapy

A COMPARISON OF PERSONAL DIGITAL ASSISTANT (PDA) DATABASE SOFTWARE: A GUIDE TO CHOOSING AN APPLICATION FOR PROFESSIONAL PRACTICE DATA MANAGEMENT

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OBJECTIVE: To review database development software available for the Palm Operating System (OS) and to create a software selection algorithm to aid pharmacists choosing an application for their data management needs.

METHODS: An Internet search using the Google search engine was conducted to identify PDA database software. Search terms included: "PDA", "database", "PalmOS", "software", "review"; "comparison." In addition, selected online PDA software vendor websites and two online computer magazines (PC MAGAZINE®, PCWORLD.COM) were searched. Key software features were delineated including: OS requirements; memory requirements; build platform; data storage format; maximum number of data tables and fields, data relationship features (relational vs. flat file); synchronization options; ease of use and cost. Information from each category was tabulated for comparison purposes and a test database was designed using 2 purchased applications and all available trial versions.

RESULTS: We identified 7 database development software programs: HanDBase® 3.0, Pendragon FormsTM 3.2, ThinkDB® 2.5, Satellite FormsTM 5.1, dbNowTM Deluxe2.0, FileMakerTM Mobile2 and Jfile5. A software selection algorithm was developed based on distinguishing software features. Key distinguishing features included: multi vs. single user synchronization options (i.e. the ability for multiple users to synchronize with a common database); availability of network and internet synchronization conduits; data storage format; ability to export data to personal computer (PC) spreadsheet, relational database or statistical analysis software; maximum number of data tables and fields supported; development platform (i.e. PDA vs. PC vs. both) and cost.

CONCLUSIONS: A decision algorithm was developed based on key distinguishing software features in order to aid users in choosing between 7 currently available PDA database software applications.

Key words: PDA, database, software, selection, pharmacy

THE EVALUATION OF ELECTRONIC HANDHELD PHARMACOPOEIA CONTENT BY HOSPITAL PHARMACISTS – WHAT DO PHARMACISTS WANT FROM A PALM PHARMACOPOEIA?

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Purpose: The study set out to evaluate what pharmacists considered to be essential components of a handheld pharmacopoeia and compares that to what is currently available.

Methods: Hospital pharmacists were asked to complete an on-line survey by ranking various pharmacopoeia related criteria on a 5 point Likart scale. With the support of the Metro Pharmacy Directors, an e-mail was sent out to the Directors of Hospital Pharmacies in the Greater Toronto Area, asking that they forward a message to their pharmacists directing them to complete a web-based survey. The survey was open to all hospital pharmacists, regardless of clinical experience, or practice area.

Results: A total of fifty-three respondents replied to the survey with the largest populations being in General Medicine (n=16) with the next largest populations being Geriatrics and Oncology. Mean scores were collected across the combined data, and within each of the sub-groups. Dose adjustments were considered the top priority in all cases (mean 4.68/5, SD 0.849), and ease of use was considered the core requirement in user adoption (mean 4.73/5, SD 4.75x10-2). Pharmacists in geriatrics unanimously attached the greatest importance to Dosing and adjustments (mean 5/5), Drug Interactions (5/5), and Adverse events (5/5).

Conclusions: Findings from this study suggest that a pharmacopoeia must have extensive information on Dose Adjustments, Drug Interactions, and Adverse reactions, from the content perspective, while remaining easy to use by pharmacists at the bedside who may not have additional time to spare.

EVALUATION OF HANDHELD ELECTRONIC PHARMACOPOEIAS FOR THE INTENSIVE CARE UNIT

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Handheld devices are frequently used in our ICU for medical information to guide patient care decisions. Several electronic pharmacopoeias exist for the Palm handheld device which should speed retrieval of drug information and hasten drug therapy decisions. We evaluated all available electronic pharmacopoeia for use in our ICU.

Methods: One ICU pharmacist, one drug information pharmacist, and two Intensive Care physicians were familiarized with 8 electronic pharmacopoeias (A-Z, Tarascon, Mobile Micromedex, ePocrates, Dr. Drug, PDR, AHFS, and Lexi-Comp) installed on Palm M500 handheld devices. Thirty-two content areas were identified from conventional pharmacopoeia textbooks. These content areas were ranked by importance to clinical practice. Electronic pharmacopoeias were evaluated for the presence/absence of these content areas. The quality of content areas was rated against a standard conventional pharmacopoeia (AHFS).

Results: Pharmacists placed more emphasis on drug administration, pharmacokinetics, adverse effects and dosage adjustments. Physicians placed more emphasis on drug dosing, contraindications, and toxicology. Some content areas were inconsistently identified by the investigators, presumably due to the format of the database and the layout of the information.

Conclusion: A core group of content areas were important to both pharmacists and physicians. Several handheld pharmacopoeias provided this core group. Users with specific needs should examine several databases before purchasing the software to ensure suitability for their practice.

DEVELOPMENT OF A PHARMACIST'S TOOL FOR RECORDING PATIENT CARE SERVICES ON A PERSONAL DIGITAL ASSISTANT.

Mark F. Collins, BSc Pharm, MSc; Lions Gate Hospital, North Vancouver, BC.

Rationale: At our 255 bed community hospital, pharmacists maintain a hand-written record of direct patient care provided during clinical rotations. A more efficient tool is needed to track patients, organize workload, and gather data for the purposes of quality management.

Objective: To develop a system for maintaining, searching and sorting records of pharmacist's care on a Personal Digital Assistant (PDA). Data must be readily transferable from the PDA to a personal computer database for analysis.

Method: Data fields were defined for patient identification, medical problems, key processes and outcomes (health and economic). Utilizing Pendragon Form® Version 3.2, data collection forms were created. Collectively these forms constituted the electronic Patient Care (ePCARE) log which was installed on to two Sony PEG Clie® S360 PDA's. Measures were taken to protect patient confidentiality.

Evaluation: Five clinical pharmacists who provide care for patients on general medicine and specialty wards each evaluated the ePCARE log for a 3 to 4 week period. During this evaluation phase 196 drug related issues were recorded in 154 patients. Positive outcomes were observed or anticipated in over 80 percent of pharmaceutical care cases. Search and sort features of the ePCARE log together with portability of records helped pharmacists to organize and prioritize their caseload. Patient specific data were readily downloaded to a personal computer for analysis.

Conclusion: The ePCARE log is an efficient alternative to the hand-written log of clinical pharmacy services because of the ease with which records can be maintained, searched, sorted, and analyzed.

EVALUATION OF PALM® OS PATIENT MONITORING APPLICATIONS FOR THE INFECTIOUS DISEASES CONSULT SERVICE.

Stephanie W. Ong BScPhm1, Sandra A.N. Tailor PharmD[1,2,3], Scott E. Walker MScPhm[1,3], Department of Pharmacy[1], Divisions of Infectious Disease[2] and Clinical Pharmacology[3], Sunnybrook & Women's College Health Sciences Centre, Toronto, Ontario

Rationale: The need to evaluate personal digital assistants (PDAs) and their application software are important to determine their suitability to either an individual's or a department's clinical services. The demands of the Infectious Diseases (ID) clinical pharmacy service require accuracy, efficiency and organization in documentation to ensure effective provision of pharmaceutical care to patients. The features and capabilities of PDAs can play an important role for the ID pharmacist.

Objective: One of the objectives of this project was to assess the feasibility and application of incorporating a PDA driven electronic patient monitoring tool into the ID pharmacy services.

Steps: In the past year, a pharmacy resident along with the ID clinical coordinator developed and evaluated an electronic patient monitoring form and database management system for the ID consult service. Preliminary evaluation of several Palm® OS patient monitoring and database application software determined that two software packages, ePatient2000® and Pendragon® Forms, were best suited to further investigate in the development of an ID electronic monitoring form.

Results: The ID electronic form developed was piloted during the pharmacy resident's ID clinical rotation. During this time, a paperless system was used to track and monitor patients referred to the ID consult service. The use of an electronic monitoring form enhanced the pharmacist's clinical workload by consolidating patient information in one medium. Collected data from patients monitored were directly synchronized and stored in Microsoft® Access, which further enhanced the efficiency of data collection and analysis. Reports generated through MS Access based on data collected may be used to facilitate projects such as tracking drug expenditure on specific services, performing drug use evaluations and analyzing a clinician's workload statistics.

Conclusion: The development and pilot of an electronic patient monitoring form for the ID consult service provided assurance of the benefits of incorporating a personal digital assistant into a specialized area of clinical practice.

MAKING VANCOUVER HOSPITAL'S PARENTERAL DRUG THERAPY MANUAL AVAILABLE ON A PERSONAL DIGITAL ASSITANT (PDA).

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The Problem: The hospital's Parenteral Drug Therapy (PDTM) is a guide for physicians, pharmacists and nurses to current regulations for administration of parenteral drugs. The Pharmacy Department is responsible for updating the manual. Additions, deletions, or modifications of monographs in the PDTM are made on a monthly basis. It is difficult and labour-intensive to ensure that all printed copies of the PDTM throughout the hospital are up to date.

The Background: The Department commissioned the conversion of the PDTM to a web-based (HTML) format in 1997, making it more readily available from within and outside the hospital. The online version is amenable to timely updates and was declared the "official" version of the PDTM, meaning that the web version superceded all other forms, even though efforts to update the hardcopies continued. Two hundred and thirty five PDTM monographs currently exist.

The Solution: Since software for converting web content (including all links and files) to a PalmOS-based PDA format was readily available (iSilo®) and all clinical pharmacists in our institution had access to PalmOS PDAs, we produced a Palm version of the PDTM for use by pharmacists. The PDA version of the PDTM is updated periodically as the online PDTM changes and pharmacists are notified that a new version is available for download from our website and installation on their handheld.

Key Words: Palm, PDA, Parenteral Drug Therapy, Monograph

DEVELOPMENT OF "BEDSIDE EBM": A HANDHELD TOOL FOR STORING, RETRIEVING, AND APPLYING CLINICAL TRIAL DATA AT THE POINT-OF CARE

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The Problem: Clinical pharmacists frequently base treatment recommendations on the primary literature. Recalling specific details about clinical trials is often important, though sometimes difficult, and processes to provide very rapid access to the original trial data are needed.

The Background: Although a database of 850 PDF versions of clinical papers was maintained by the author and available from any PC in the hospital, even more rapid access to trial data while on rounds, teaching, evaluating patients, or outside the hospital was needed. A précis of the critical trial data in a portable form, including a method to estimate an individual patient's chances of benefiting or being harmed by a particular therapy was desired.

The Solution: A standalone PalmOS-based software application was developed using PDA Toolbox for Windows. The application allows individuals to enter critical information from clinical trials related to their individual practice and quickly retrieve them. The software automatically calculates effect sizes based on absolute incidences entered (eg. RRR, RR, ARR, NNT/NNH). The software also allows entry of an individual patient's perceived baseline risk (eg. based on the clinician's suspicion or another risk estimation scheme) and applies the trial's effect to it, allowing individualized estimates of the magnitude/likelihood of efficacy or harm based on the trial data. The tool is in use by several pharmacists across Canada.

MAKING VANCOUVER HOSPITAL'S FORMULARY HANDBOOK AVAILABLE ON A PERSONAL DIGITAL ASSISTANT (PDA).

Peter Loewen, BSc (Pharm), Pharm.D[1]; Robert M. Balen BSc(Pharm), Pharm.D[2], University of British Columbia, Pharmaceutical Sciences Clinical Service Unit (CSU), [1]UBC Hospital, [2]Vancouver General Hospital, Vancouver Coastal Health Authority (VCHA)

The Problem: The hospital's Formulary is a constantly changing resource that is frequently consulted by pharmacists in ward-based and centralized clinical settings. Although a hardcopy handbook version of the formulary exists, it is only updated approximately every two years, at substantial cost.

The Background: The Department commissioned the conversion of the Formulary to a web-based format in 1997, making it possible for pharmacists (and other authorized parties) to access it from within and outside the hospital. The Formulary, consisting of over 1600 line-items with generic name, trade names, dosage forms/strengths, and acquisition cost was compiled in Microsoft Access database format for web implementation. The Department committed to continually updating the formulary database as the Drug & Therapeutics Committee approved changes.

The Solution: Since software for converting Microsoft Access databases to a PalmOS-based format was readily available (HandDbase®) and all clinical pharmacists in our institution had access to PalmOS handheld computers, we produced a Palm version of the Formulary for use by pharmacists. The PDA version of the Formulary is more current than the handbook printed version.

Key words: Formulary, PDA, Palm, Personal Digital Assistant

A HANDHELD TOOL FOR ESTIMATING INDIVIDUALIZED RISK OF STROKE AND SERIOUS BLEEDING WITH WARFARIN OR ASPIRIN IN ATRIAL FIBRILLATION PATIENTS

Peter Loewen, BSc (Pharm), Pharm.D; Denise Sprague BSc(Pharm), University of British Columbia, Pharmaceutical Sciences Clinical Service Unit (CSU), UBC Hospital, Vancouver Coastal Health Authority (VCHA)

The Problem: Estimating individualized benefits and risks of warfarin and aspirin in patients with atrial fibrillation can be difficult. This often hinders clinical decision-making and patient involvement in that process.

Purpose: To combine the best available evidence with patient-specific factors in a tool available at the point-of-curiosity which could improve this decision-making process.

The Solution: A standalone PalmOS-based software application combining the CHADS2 stroke risk estimation scheme and treatment effect and risk data from the best available evidence was developed using PDA Toolbox for Windows. The tool has been dubbed the "Stroke Prevention in Atrial Fibrillation Risk Calculator" (SPARC) and is currently in use by several pharmacists and physicians across North and South America. The utility of the tool has been evaluated as part of a residency project and found to be useful in practice.

EVALUATION OF DRUG INFORMATION PROGRAMS FOR PALM™ OS HAND HELD DEVICES AS A RESOURCE FOR CANADIAN HOSPITAL AND COMMUNITY PHARMACISTS

Anjana Sangar (pharmacy student), Marita Tonkin BScPhm, Norma Marchetti BScPhm., Hamilton Health Sciences, Hamilton, Ontario.

To define the role of Personal Digital Assistants (PDAs) as a resource in the provision of pharmaceutical care and to identify the best suited applications to answer a variety of drug information questions for Canadian pharmacists, 5 drug information programs commonly used on Hand Held devices were assessed. The research was conducted over a 3 month period at a tertiary care teaching hospital and a community pharmacy.

In-coming drug information questions posed by clinicians, pharmacists, and community patients were documented over the 3 month period. A random sample of questions received by the hospital drug information centre, after hours on call hospital pharmacists and the community pharmacy were selected. The documented questions were categorized by the nature of their inquiry (ie: dose, efficacy, adverse effects, interactions, availability) then researched using the following 5 Hand Held applications: ePocrates RX,/ePocrates ID, A2zDrugs, Mobile Micromedex, Lexi-Comp Drugs Platinum and Tarascon's Pharmacopoiea. The purpose of this study was to evaluate the 5 applications for ease of use, accuracy and the depth they were able to address specific drug information requests. The assessment team consisted of 2 pharmacists and 1 pharmacy student. The results of this comparison will be useful for individual clinicians and organizations making decisions regarding choice of drug information software for PDAs.

TRANSFORMING ONCOLOGY PHARMACY PRACTICE: INNOVATIVE PATIENT CARE USING A PERSONAL DIGITAL ASSISTANT (PDA).

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Rationale: In an outpatient oncology centre, many factors affect patient and pharmacist availability, limiting detailed patient assessment, counseling, monitoring, and documentation, potentially leading to sub-optimal patient outcomes. To optimize patient care, circumvent limitations of traditional manual documentation, improve communication among the health care team, and collect data for practice-based research, a portable electronic database using PDA technology was proposed.

Project Description: A new position was created to enable a pharmacist to be stationed in the chemotherapy suite where patients can be interviewed privately and uninterrupted. The Oncology Pharmacy Database (OPD) was developed to facilitate documentation of clinical interventions. It consists of a main database located on the desktop that is synchronized with an identical database on the Pocket PC PDA. The OPD includes patient demographics, diagnosis, medical conditions, allergies, medications and herbals, chemotherapy, side effects (signs and symptoms, severity, management options), follow-up alerts, and outcome measures. The OPD is linked with the centre's main patient database, allowing patient demographics to be transferred to the OPD. Pharmacists use the PDA to document information at the bedside, then transfer it to the desktop at day-end.

End result and evaluation: Pharmacists rotate through the service. Overall satisfaction with the program is high; patients and staff appreciate the individualized care. The integrity of the data obtained from the OPD and the usefulness and acceptance of the PDA will be evaluated.

APPLICATION OF A PERSONAL DIGITAL ASSISTANT IN A PHARMACY-DIRECTED WARFARIN DOSING PROGRAM

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Warfarin pharmacists participating in a Pharmacy-Directed Warfarin Dosing Program at our institution have full prescribing authority for warfarin and are responsible for prospectively monitoring patients on a daily basis, interpreting laboratory results, adjusting warfarin doses, educating patients, and facilitating the continuity of anticoagulation care into the community. Until recently, patient workup and documentation for this program was completed using a paper-based system.

Personal Digital Assistants (PDAs) overcome many of the limitations associated with a paper-based system and can enhance the quality of patient management. PDAs provide an effective means for the electronic storage and management of patient data, and allow rapid and efficient access to up-to-date electronic medical information, management protocols, and therapeutic guidelines.

The objective of our project was to incorporate a PDA into the daily patient-related activities of a Pharmacy-Directed Warfarin Dosing Program for heart valve replacement patients. Using the Pendragon Forms program, a "PDA Patient Data Collection Sheet" was created to emulate the paper-based system of the Pharmacy-Directed Warfarin Dosing Program. Several comprehensive and customized lookup lists were incorporated into the PDA program to allow simplified, effective, and efficient data entry.

To date, approximately 40 patients have been successfully managed by our automated program using the PDA. Overall, the warfarin pharmacists have found the PDA to be a valuable, convenient, and user-friendly patient monitoring device. The "PDA Patient Data Collection Sheet "is an important tool to improve the continuity of anticoagulation care and decrease potential medication errors. Moreover, the creation of an electronic patient database allows the warfarin pharmacists to monitor the effectiveness and efficiency of the Pharmacy-Directed Warfarin Dosing Program on an ongoing basis.

THE SELECTION AND IMPLEMENTATION OF A PERSONAL DIGITAL ASSISTANT SOFTWARE PROGRAM FOR DATA COLLECTION AND MANAGEMENT BY PEDIATRIC CRITICAL CARE PHARMACISTS.

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The purpose of this project was to select and implement a software program on a personal digital assistant (PDA) for use by pediatric critical care pharmacists (CCPs) as a tool for information management and collection.

In Phase I, a software program, drug information resources and a PDA were selected. In Phase II, a program was designed, revised, and refined based upon the needs and feedback of the CCPs. Finally, during Phase III, the process of managing and collecting patient data was evaluated.

The results of the project were that 2 Palm‰ M505s with Pendragron Forms-3.1 were selected. Over a 12-week period, 142 patients were followed and 596 drug-related problems were documented. Lexi-Comp's" Pediatric Dosage Handbook, Natural Products, and Interact (drug interactions) were chosen. The PDAs were also found to be useful in the collection of workload statistics and a DUE.

The continuity and consistency of documenting patient care activities was improved with the PDAs. The CCPs now use PDAs instead of paper profiles.

THE PHARMACEUTICAL CARE ANALYSIS PROJECT – RESULTS OF BETA PHASE

William McLean, Pharmaceutical Outcomes Research Unit, Ottawa, ON, David U, ISMP Canada, Toronto, ON, Carmine Stumpo, Toronto East General Hospital, Toronto, ON, Robert Lam, Royal Columbian Hopsital, New Westminster B.C.

The Pharmaceutical Care Analysis Project (PACP) has just completed the beta phase investigating its Pharmaceutical Care (PC) software on personal device assistants (pda's) with eight institutions across the country. This program was designed to meet the needs of the clinical practitioner in terms of organizing and documenting care as well as provide data on PC to our Research Unit.

Eight institutions were selected out of a total of 30 applicants based on their ability to gather data from a variety of medical services and also to investigate the possibility of interfacing one of their in-house programs (laboratory, pharmacy, admission) with the PC program. Each institution was provided with a modern handheld pda (Sony Clié 360 or Palm m130) and provided data on a minimum of 60 patients via three different pharmacists. At the end of the study period (January 2003), the institutions sent in their data (stripped of patient identifiers) to the Research Unit for analysis. In addition, participating pharmacists were surveyed on the use of the program, with a view to preparing the program for marketing. Finally the results of the interfacing attempt were also gathered.

The results of this trial will be presented in the following format:

the analysis of the data on PC on 500 patients across the country

the evaluation by the participants of the PC program, with recommendations for improvement

the experience of the participants in attempts to interface with in-house programs

This is the most important exercise in Canada in determining the ideal PC program for clinical practitioners and at the same time as a major research tool in analysis of PC.

Monday, February 3 13:45 – 15:00 – Exhibit Hall – Special Poster Session - Hand Held Devices

DISSEMINATION OF PHARMACY INFORMATION TO PALM OS™ HANDHELDS USING THE ISILO™ DOCUMENT FORMAT.

Alfred Gin, B.Sc.Pharm., Pharm.D.[1,2], Michael Armas, B.Sc.Pharm.[1], Bob Bullock, B.Sc.Pharm[1], Allison Sidorchuk, Pharmacy Student[2]. [1]Health Sciences Centre and [2]Faculty of Pharmacy, University of Manitoba, Winnipeg, Manitoba

The Health Sciences Centre is a 750 bed hospital with 65 staff pharmacists. Approximately 40% of our pharmacists have personal Palm‘ based handheld devices (e.g. Palm‘, Clie‘, Handspring‘). In addition, many of our staff have the iSilo‘ document reader installed on their handheld. Unfortunately, information such as formulary criteria and restrictions were in printed form and not readily accessible nor mobile for our pharmacists. We identified an opportunity to disseminate department-related information such as formulary criteria to our pharmacists using the iSilo‘ format.

Information pertaining to a) formulary criteria, b) pharmacy program phone numbers c) usual dosages for oral and intravenous antibiotics and d) oral antibiotic step-down recommendations were collected. Information was edited using Microsoft Word‘. A navigation hierarchy using hyperlinks was created for each document. Documents were saved in html format and converted to iSilo‘ format using iSilox‘. Files were distributed to handheld users via email or by “beaming” the iSilo documents to interested handheld users. Since August 2002, we estimate that at least 50% of handheld users have received the iSilo‘ pharmacy documents. Initial feedback from users has been positive.

The development and use of iSilo‘ documents is evolving at the Health Sciences Centre and requires further evaluation. We feel however, that this format is a useful vehicle for delivering information to our pharmacists via their handheld devices.

CLINICAL SERVICES IN AN INTENSIVE CARE UNIT SUPPORTED BY A PERSONAL DIGITAL ASSISTANT SYNCHRONIZED WITH THE PHARMACY INFORMATION SYSTEM

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The Pharmacy at our tertiary acute care hospital has documented relevant patient information, clinical activities, patient outcomes and workload measure using a patient monitoring form (PMF) for the past 15 years. In conjunction with medication profiles, these forms have evolved over the years, to enhance pharmacists ability to identify drug related problems (DRP), support departmental clinical quality assurance programs and facilitate workload balancing between pharmacists.

In the summer of 2001, we implemented the RxTFC, Pharmacy information system from BDM. Integrated into that system is a clinical intervention module that is designed to perform many of the functions of the PMF. However, a distinct disadvantage is the fact that access to the clinical database requires use of a desktop workstation or that the information be printed of and data be manually entered from written notes at a later time. Therefore, we did not implement the clinical intervention module, and continued with our paper PMF.

In early 2002, BDM announced the availability of the “RxTFC Pharmacist In Motion” module which allows users to synchronize data in RxTFC with a personal digital assistant (PDA) (either Palm OS of Pocket PC is supported). Data synchronized includes: the medication profile; patient demographic data; patient laboratory data; and the clinical intervention database. Our pharmacy agreed to be a beta site for the purposes of evaluating this technology in a clinical setting. The pilot area selected was the 12-bed intensive care unit in which the clinical coordinator maintains a daily clinical practice.

The poster will demonstrate the functionality of the device and provide an evaluation of our experience with this technology. Specific areas of evaluation include advantages over the PMF; disadvantages relative to the PMF; recommendations for improvement of the “RxTFC Pharmacist In Motion” module; and plans to expand usage of this handheld device to other clinical areas.

Tuesday, February 4 10:15 – 10:45 – Exhibit Hall

IMPLEMENTATION OF THE CANADIAN FORCES DRUG EXCEPTION CENTRE

Alan Gervais BSP and LCol Régis Vaillancourt, BPharm, Pharm.D., Deputy Chief of Staff Medical Policy, Pharmacy Policies and Standards, Canadian Forces Health Services, Ottawa, ON

Rationale: The Canadian Forces (CF) no longer provides 24-hour pharmacy services on military bases; this has resulted in increased dependence on non-military health care providers. The Canadian Forces Drug Exception Centre was developed to enable consistent provision of care through both military and non-military sites.

Description: This program aims to achieve good patient outcomes. Clinical literature, published in peer-reviewed journals, forms the basis for assessment of drugs for coverage by the drug benefit provider. Following literature review, recommendations for drug use are made by the Federal Pharmacy and Therapeutics Committee (P&T), an advisory body of medical professionals providing impartial and practical advice to federally funded departments. The CF P&T then weighs these recommendations against the established Spectrum of Care and operational requirements for drug use. All requests for drugs which are not listed as CF benefit items are reviewed individually by a clinical pharmacist, using an evidence-based medicine (EBM) approach.

Results: Patient care is optimized through the application of EBM. Drug utilization evaluations completed to date have confirmed good adherence to clinical practice guidelines. This has resulted in overall reductions in drug expenditures for the CF, in contrast to the increase in drug costs observed by other private and government agencies.

Importance: Under this program, approximately 60,000 members of the CF receive equitable drug benefits through military and civilian pharmacies across Canada.

PROVISION OF NON-PRESCRIPTION MEDICATIONS TO CANADIAN FORCES MEMBERS THROUGH CIVILIAN PHARMACIES: A PILOT PROJECT

Régis Vaillancourt, BPharm, PharmD. Michel Trottier, BScPhm. Alan Gervais, BSP. Deputy Chief of Staff Medical Policy Pharmacy Policy and Standards, Canadian Forces, Ottawa, ON. Rosemin Kassam, BscPharm, PharmD,University of British Columbia, Vancouver, BC.

BACKGROUND: Although non-prescription (OTC) medications are approved for all Canadian Forces (CF) members, access is compromised for members without a base pharmacy. As the CF endeavors to provide equitable access to both medication and pharmacy services, an alternative method of providing OTC drugs was designed.

DESCRIPTION: In this pilot project, wallet cards were provided to patients to facilitate access to OTC drugs directly from community pharmacies.

IMPLEMENTATION: Wallet cards and information sheets were sent to eligible members, encouraging them to obtain OTC drugs from a civilian pharmacy. Wallet cards list approved OTC products and provide instructions for reimbursement of drug costs and cognitive service fees.

EVALUATION: Preliminary evaluation involved assessing feasibility and member satisfaction with this alternative process. Electronic records on OTC drug claims were reviewed monthly. Members who obtained OTC medications were contacted to participate in a telephone survey.

RESULTS: Wallet cards were issued to 583 members. By July 31 2002, 222 transactions were identified. Of these, 142 were excluded (59 lost to follow-up, 45 prescriptions, 35 cancelled, 2 did not consult pharmacist, and 1 declined survey). These results are based on 80 transactions from 56 members.

Most members (75%) were “very satisfied” with the process. However, more time was spent on technical tasks: while 74% of members spent only 1-5 minutes discussing symptoms, 48% reported that 10 minutes or more were spent processing the claim. Two-thirds of members were asked about their medical history, and 64% were counseled to see a physician if symptoms did not resolve. Total symptom resolution was reported in 71% of cases surveyed. Only one member required physician follow-up.

IMPACT: Members appear to be satisfied initiating contact with pharmacists to obtain OTC medications.

PROVISION OF NON-PRESCRIPTION MEDICATIONS BY PHARMACISTS IN THE CANADIAN ARMED FORCES

LCol Régis Vaillancourt, BPharm, PharmD. Michel Trottier, BScPhm. Alan Gervais, BSP. Capt Mélanie St-Hilaire, BPharm. Deputy Chief of Staff Medical Policy Pharmacy Policy and Standards, Canadian Forces, Ottawa, ON.

BACKGROUND: In consultation with a base pharmacist, non-prescription, over-the-counter (OTC) medications are made available to Canadian Forces (CF) members.

DESCRIPTION: Treatment outcomes and patient satisfaction with pharmacist interventions were assessed.

IMPLEMENTATION: Members consulted with the base pharmacist for the treatment of minor ailments. OTC medication recommendations were documented on the member's electronic profile. Electronic records of recommendations were tabulated to identify members. These members were contacted to participate in a telephone survey.

EVALUATION: Evaluation involved documenting health outcomes and assessing member satisfaction resulting from pharmacist consultations.

RESULTS: One hundred and forty-nine members, accessing 191 OTC medications, were included in the analysis. Most members (90%) were "very satisfied" with the process. The majority of interactions (83%) were perceived to be 1 to 3 minutes duration. Practically all members (98%) interacted with the pharmacist, 68% recalled being asked about relevant medical history, and 40% reported being counseled to see a physician if symptoms did not resolve. Forty percent of members would have consulted a physician to obtain a prescription to treat their ailment.

Overall, symptoms completely resolved in 81% of cases. Most recommendations were for analgesics (32%), antihistamines (30%) and cough and cold preparations (79%). Complete symptom control was reported in 90%, 69% and 79% of cases, respectively.

IMPACT: Members are satisfied initiating contact with pharmacists to treat minor ailments with OTC medications. As reported by members, interventions by pharmacists successfully treated the majority of their ailments.

ACCEPTABILITY OF CHLOROFLUOROCARBON-FREE INHALER SUBSTITUTION BY CANADIAN FORCES MEMBERS: A CONTINUOUS QUALITY IMPROVEMENT INITIATIVE

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Purpose: The Montreal Protocol and the ensuing Canadian regulations call for a ban of ozone-depleting chlorofluorocarbons (CFCs) from metered-dose inhalers (MDIs) by January 1, 2005. The purpose of this descriptive cross-sectional survey was to verify patient's awareness of the Canadian regulatory rationale behind an institutional therapeutic substitution policy implemented in June 2001 and to measure their satisfaction with the hydrofluoroalkane (HFA)-MDIs.

Methods: A standardised, structured telephone survey was administered to all patients who had been dispensed an inhaled corticosteroid or b2-agonist during the 2001 calendar year. The analysis consisted of descriptive data expressed as proportion of patients receiving CFC-free inhalers, satisfaction scores and frequency of inconveniences experienced with the HFA inhalers.

Results: Eighty-two percent (82%) of the 288 eligible members were unaware of the regulatory change setting the CFC ban. All but 10 of the 93 members who were still on one or more CFC-containing inhalers expressed interest in trying CFC-free alternatives in the future. Regarding their new inhaler, 60 to 70% of the 185 HFA-MDI users were very satisfied with the quality of the advice received from their pharmacist and overall just as satisfied, if not more, than with their previous CFC-containing inhaler with just as good, if not better, subjective control of their respiratory symptoms. The inconveniences most commonly noted with the HFA-MDIs were the unpleasant taste, the softer puff and the difficulty in foreseeing the time for a refill.

Conclusion: The concerns over the acceptability of reformulated CFC-free aerosol inhalers are ill-founded and thus the conversion is an achievable endeavour

OUTCOMES ASSOCIATED WITH THE INCLUSION OF SILDENAFIL AS A BENEFIT ITEM ON THE CANADIAN FORCES DRUG PLAN

Alan Gervais BSP., L Col R Vaillancourt BPharm, Pharm D., Cora Fisher MD, Deputy Chief of Staff, Medical Policy, Pharmacy Policies and Standards, Canadian Forces Health Services, Ottawa, ON

Purpose: Sildenafil was included as a special authorization item on the Canadian Forces drug plan in July 2000. Reimbursement was provided for prescriptions written by physicians with expertise in erectile dysfunction (ED), with up to 12 tablets reimbursed every 2 months. This study evaluated the impact of reimbursement criteria on usage of sildenafil.

Methods: Between July 2000 and March 2001, 163 patients were reimbursed for sildenafil prescriptions. Data was collected from patient charts to identify factors potentially associated with sildenafil use, including: patient demographics, cause of ED identified by general practitioner (GP) and ED specialist, number of physician visits, and length of time for specialist referral.

Results: There was poor correlation between ED etiology attributed by specialists and by GPs. However, sildenafil was equally likely to be prescribed, regardless of ED etiology. Between 3.3 - 7.5 weeks elapsed between referral and actual visit to the ED specialist. In patients with chronic illness, visits to physicians declined after sildenafil was prescribed.

Conclusion: The CF no longer requires patients to see a specialist to be reimbursed for sildenafil. However, patients with unknown ED etiology will continue to be referred to specialists for further investigations. The quantity limit remains unchanged.

IDENTIFICATION OF STRATEGIES TO REDUCE PREVENTABLE DRUG-RELATED MORBIDITY

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Rationale: Drug-related morbidity (DRM) results in significant cost and consequence. Fifty percent or more of DRM may be preventable (PDRM). Strategies to reduce the problem of PDRM need to be identified in order to improve the quality of medication use.

Objectives: (1) To determine the perceived efficacy of each of eight strategies for reducing PDRM, as expressed by physicians, and (2) whether this varied depending upon physician group.

Study Design & Methods: Three panels of physicians (12 general practitioners [GPs], 6 geriatricians and 6 clinical pharmacologists) who developed and validated quality indicators of PDRM in older adults, received a follow-up mail survey to identify strategies to reduce PDRM. Each physician was asked to decide how best to reduce PDRM by choosing from eight intervention strategies for each quality indicator. For each indicator, the physician could choose from zero, to all eight, intervention strategies.

Results: The most commonly chosen strategy per PDRM indicator was monitoring (72.5%) with health system management (54.6%) and patient / caregiver cooperation (52.1%) second and third, respectively. Monitoring was the most commonly chosen strategy per indicator by the GPs (81.4%) and the clinical pharmacologists (64.5%). The geriatricians chose health system management most commonly as a strategy per indicator (72.5%). Overall, an average of 3.95 intervention strategies was chosen per clinical indicator of PDRM.

Conclusion: Monitoring and health system management were strategies identified most frequently by physicians to reduce PDRM in each of the groups. Future research should focus on evaluating patient health outcomes associated with strategy implementation.

THE INCIDENCE OF PREVENTABLE DRUG-RELATED MORBIDITY IN SENIORS

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Rationale: Adverse drug-related outcomes in older adults are widely recognized problems. At this time, a study that quantifies the magnitude of preventable drug-related morbidities (PDRM) is lacking.

Objective: To determine the incidence of PDRM in seniors in one area of one province.

Study Design & Methods: Our study population consisted of seniors in one urban centre of one province, using 1998 and 1999 data. This database contained claims information pertaining to all inpatient visits, physician office visits and ambulatory prescriptions. The incidence of PDRM was determined by identifying individuals who matched an outcome and pattern of care associated with 52 clinical indicators of PDRM that were developed in a previous stage of the study.

Results: In the 1998 data, 1990 individuals who matched at least one of the 52 PDRM indicators were found in 21,890 older adults, for an overall incidence rate of 90.9 per 1000. In the 1999 data, 1678 individuals who matched at least one of the 52 PDRM indicators were found in 22,197 older adults, for an overall incidence rate of 75.6 per 1000. The 52 indicators were subdivided by gender and age, and were organized into seven disease/condition groupings for further analysis.

Conclusion: This study has helped to quantify the magnitude of the problem of PDRM in seniors. In the future, these indicators could be used as screening tools to identify areas for improvement in care or seniors at risk for adverse drug-related events.

IMPACT OF A PHARMACIST-DIRECTED SEAMLESS CARE SERVICE ON CLINICAL OUTCOMES AND PROCESSES OF CARE

Lesley A. Zwicker, B.Sc.; Neil J. MacKinnon, Ph.D., R.Ph., College of Pharmacy, Dalhousie University, NS; Ann Nickerson, B.Sc.(Pharm.), Moncton Hospital, Moncton, NB

Objectives: To determine the: (1) number and severity of drug therapy inconsistencies and omissions (DTIOs) identified by a clinical pharmacist, (2) number and intervention ranking of drug therapy problems for seamless monitoring (DTPsms) as identified by a clinical pharmacist, and (3) ability of a clinical pharmacist to resolve inconsistencies and omissions in inpatient discharge medication orders.

Methods: This was a sub-study of a larger randomized controlled trial conducted at the Moncton Hospital to determine the impact of a pharmacist-directed seamless care service on various outcomes and processes of care. This sub-study focused on clinical outcomes and their related processes of care. Objectives 1 & 2 were measured as part of the seamless care intervention, while objective 3 was measured by a retrospective chart review on both intervention and control patients.

Results: A total of 253 patients (119 in the control group and 134 in the intervention group) completed the study. A mean of 0.74 DTIOs were identified and resolved per intervention patient, with 91.5% of these having a significant or very significant severity level. A mean of 3.59 DTPsms per intervention patient were identified and a majority of these were scored as significant. According to the retrospective chart review, inconsistencies and omissions in inpatient discharge medication orders were reduced by 92.3% in the intervention patients.

Conclusion: This study has demonstrated that a pharmacist-directed seamless care service improves clinical outcomes and related processes of care.

Acknowledgement: Funding for Lesley Zwicker was provided by the Canadian Institutes of Health Research (CIHR).

WARFARIN DOSING IN AN OUTPATIENT CLINIC

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Rationale: Maintaining good anticoagulant control is important for the safety and efficacy of warfarin. It has been demonstrated in retrospective studies that experienced staff in a specialist clinic can best achieve this

Description: The Thrombosis Assessment and Treatment Unit (TATU) is an outpatient clinic of a tertiary care teaching hospital. Its primary role is to provide outpatient treatment of deep vein thrombosis (DVT) and pulmonary emboli (PE). When indicated, outpatient treatment with warfarin is initiated. Education in safe warfarin use is provided. Blood tests for INR measurement are performed at a number of licensed laboratories across the city. Patients are contacted by phone with the INR result, dose instructions and next test date.

Steps Taken: In July 1999 funding was secured for a pharmacist who had undergone training in anticoagulation to join TATU. Responsibility for warfarin monitoring and dosing was delegated to the pharmacist via a medical directive. Computer software able to suggest and record warfarin doses was installed. Full-time clerical support is provided.

End Result/Evaluation: The patient population has grown so that as of September 2002, the pharmacist manages 815 patients on warfarin. Indications for warfarin treatment include DVT (471), PE (183), antiphospholipid antibody syndrome(45), atrial fibrillation (33), mechanical heart valve (24) and others (59). In the previous 12 months there were 12 major bleeds and 28 episodes of thrombosis during treatment.

Importance: A pharmacist using this system in this patient population can provide safe and effective warfarin therapy.

EXAMINING THE VALUE OF THE RESIDENCY PROJECT

Durant, Beth. BSC. Pharm. McMaster University Medical Center, Hamilton, Ontario.

Completion of a residency project is a required component of a Canadian hospital residency program. Yet there is some on-going debate as to the value of completing such a project.

A 3-part questionnaire, largely based on a similar American study by Murphy and Downhour, was developed and sent out in April 2002, to pharmacy residency directors, coordinators and current residents of all Canadian Hospital Pharmacy Residency Board accredited residency programs. The questionnaire, which was designed to gain the recipients' opinions as to the value of the residency project, consisted of several opinion statements to be rated using a 7-point scale, questions to collect demographic information, and a section for comments regarding the residency project.

A total of 106 surveys were returned, giving an overall response rate of 67.5%. Statistically differing opinions were identified for statements pertaining to time allotment for the projects, guidance from preceptors, skills gained from completing the project, interference of the project with other learning experiences, the mandatory status of the project within the residency program, as well as the overall value of the project. With the exception of one statement, all of the statistically significant differences existed between the opinions of the residents compared with the opinions of the directors and coordinators. The coordinators and directors held very similar opinions.

All three groups felt that the completion of a residency project was a valuable exercise. However, the residents thought it was not as worthwhile as the directors and coordinators felt it was.

ORDER ENTRY DELEGATED TO PHARMACY TECHNICIANS

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Rationale: Due to a chronic shortage of pharmacists our department expanded the role of pharmacy technicians. This would allow our pharmacists to be available for direct patient care. Our goal was to have technicians responsible for all drug distribution activities .

Description: All technicians were trained and delegated to enter physician orders once they had been screened by a pharmacist.

Implementation: A core team of pharmacists and technicians was formed to simplify the computer process making it more user friendly. They enhanced the database to reduce opportunities for errors, and implemented functions within the computer system to invoke auto sub policies. Regular staff meetings were scheduled to design and modify processes, workflow, and expectations. Over a 3 month period all 10 technicians were trained, assessed, and delegated.

Evaluation: Continuous evaluation includes periodic quality assurance audits. Pharmacist time devoted to dispensary activities has decreased. For example, there is no longer pharmacist overtime required on weekends to complete the processing of orders.

Importance to Future Practice: Pharmacists can now concentrate on the therapeutic aspects of the order. Technicians now have more control over the drug distribution system and turnaround time. Pharmacists are no longer required to be physically in the department "chained to the order entry desk". Competency for new pharmacists is no longer dependant on speed for computer order entry. The Pharmacists' clinical knowledge and expertise can now be fully utilized for better direct patient care. This initiative has enabled us to recruit and retain skilled clinicians.

DEVELOPMENT AND EVALUATION OF A CLINICAL MANAGEMENT GUIDELINE FOR SUSPECTED HOSPITAL-ACQUIRED PNEUMONIA IN INTENSIVE CARE UNIT PATIENTS (HAPI)

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Rationale: Hospital-acquired pneumonia (HAP) results in considerable morbidity and mortality, particularly in critically ill patients. HAP is difficult to diagnosis accurately due to non-infectious conditions with similar signs and symptoms commonly seen in the ICU. Antibiotics are one of the largest cost expenditures in the MSICU drug budget and their liberal use for HAP increases development of resistance and superinfection. It is hypothesized that a structured, systematic approach to the management of HAP in the ICU will promote appropriate use of antibiotics and will improve patient outcomes.

Objectives:

Primary: To develop and evaluate a clinical management guideline for hospital-acquired pneumonia in the medical-surgical intensive care units (MSICU) of Toronto General and Toronto Western Hospitals of the University Health Network (UHN).

Secondary:

1. Report the prevalence of pathogens, risk factors and development of superinfections in critical care patients with suspected HAP at UHN
2. To determine the concurrence to current UHN antimicrobial guidelines for the treatment of HAP in the ICU.
3. To determine the difference in use of antibiotic regimens between pre and post implementation of the guideline (duration of therapy, cost per patient)
4. To determine the difference in patient outcomes between pre and post implementation (ICU length of stay, hospital length of stay, mortality and change in CPIS score)

Methods: Overall Study Design: Prospective, before and after assessment.

Phase I: Observation of current practice of HAP management in MSICUs at UHN. All MSICU patients were prospectively screened for potential enrollment. Inclusion criteria included admission to MSICU, hospitalization for > 48 hours and a reasonable suspicion of having developed HAP. Patients were excluded if they received a colonized lung transplant, or were already receiving antibiotic treatment for HAP. Data collection included patient demographics, APACHE II scores, duration of therapy, ICU and hospital lengths of stay, HAP risk factors, past medical history, recent use of antibiotics, CPIS data on Day 0, 1,3,7 and last day of ICU therapy, current use of antibiotics, and pathogens cultured. The target sample size for pre-implementation phase was 80 patients.

Phase II: Development of the management guideline. Relevant literature and clinical studies were reviewed and several experts in respiratory, infectious disease, and critical care medicine were consulted. A focus group to review the draft guideline and gather feedback was held on June 4, 2002, attended by ICU attending MDs, Infectious Disease, Infection Control, Transplant Infectious Disease, Nursing, Pharmacy and other Allied Health clinicians. Input from the focus group as well as patient and outcome data in the pre phase were used to optimize the guideline.

Phase III: Implementation of the guideline (Fall 2002)

Phase IV: Evaluation of the guideline (80 patients target enrollment in post phase)

Results: *Phase I:* Patient enrollment and data collection for the pre-implementation phase was done from December 10th, 2001 to June 4th, 2002. At the time of writing, approximately 100 patients have been enrolled and with data collection complete on 80 patients. Pathogens were isolated in 38/80 patients. The most common cultured pathogens were Staph. aureus (31%), Pseudomonas aeruginosa (16%) and Haemophilus influenzae (16%). Of patients treated, empiric therapy was prescribed in 85.5% and this therapy was adequate 75.0% of the time. Empiric therapy concurred with UHN guidelines 53.3% of the time. The mean duration of antibiotic therapy was 8.3 ± 4.8 days. Cefotaxime and ciprofloxacin plus ceftazidime were among the most commonly used initial empiric regimens. The median ICU and hospital lengths of stay (IQR) were 16.0 (17.0) and 37.0 (41.0) days respectively. ICU mortality was 21.3% and hospital mortality was 31.3%. Development of a second HAP occurred in 12.5% and respiratory superinfection occurred in 7.5% of patients.

Phase II: A draft HAP management guideline was designed which included a tool for decision-making regarding antibiotic therapy (the Clinical Pulmonary Infection Score (CPIS), guidelines for selection of empiric antibiotic therapy (current UHN guidelines) and structured guidelines for reassessment.

Conclusions: A hospital-specific HAP management guideline can be successfully developed using a multi-disciplinary approach at a tertiary care institution. Observational site-specific data collection (CPIS scores, antibiotic usage and pathogens) can be used to optimize the guideline. Ongoing HAPI study will evaluate the impact of the management guideline on antibiotic usage and patient outcomes.

CARBOPLATIN HYPERSENSITIVITY REACTION

Venita Harris, B.Sc.(Pharm). Christine Gawlik, B.Sc.(Pharm), London Health Sciences Centre, London, Ontario. Terry Dean, B.Sc.(Pharm), FCSHP, Grand River Hospital, Kitchener, Ontario.

There have been several case reports of hypersensitivity reactions to carboplatin. However, unlike most hypersensitivity reactions, a patient's risk of a reaction to carboplatin appears to increase with the number of cycles the patient has received.

A 32 year old woman with metastatic ovarian cancer was receiving her 16th cycle of carboplatin. She was pretreated with metoclopramide 10 mg IV and lorazepam 1 mg SL. She was to receive normal saline 500 mL/hour and 360 mg carboplatin IV. The patient had no known allergies, or any reaction to previous carboplatin treatments. Approximately 10 minutes after the start of the injection, the patient experienced intense abdominal pain, vomiting, redness of her ears and hands and itchiness. The carboplatin IV was discontinued immediately and the patient received diphenhydramine 25 mg IV, ondansetron 8 mg IV and dexamethasone 10 mg IV. She also took diphenhydramine 25 mg PO at 6 pm and bedtime. She suffered no further sequelae and was not rechallenged with carboplatin.

Review of data from 2 cancer centres revealed that this was neither an atypical nor an infrequent reaction, with 2 others being reported by one centre, while 6 were reported at the second centre. Features of the hypersensitivity reaction are presented to increase awareness of this reaction and to aid practitioners in its detection and management.

ADVANCED PHARMACIST SERVICES ON A CARDIAC SHORT STAY UNIT

Uchenwa Iroaga-Genus BSc.Phm; Cynthia Jackevicius BSc.Phm, MSc; Jeff Nagge BSc.Phm. Toronto General Hospital, University Health Network, Toronto, Ontario.

The cardiac short stay unit cares for patients undergoing percutaneous coronary interventions (PCI). Medical coverage is provided by interventional cardiologists, however, the majority of their time is spent in the catheterization laboratory. The pharmacist's role is unique as drug therapy management and prescribing is performed by the pharmacist for each patient.

The pharmacist's role involves significant patient contact that begins on admission through until discharge. Each patient is interviewed for a complete medication history. Hospital drug regimens are confirmed by chart review and clarified by contacting the transferring institution. The pharmacist prepares the patient's drug regimen by performing a thorough medication review; identifying actual and potential drug-related problems; and implementing changes in the patient's therapy. Other services include patient specific peri-procedural analgesia, nighttime sedation and PCI medication protocols. The resulting medication regimen and allergy(s) are prescribed on the physician order sheet and the pharmacist signs the order. A physician signature is required to activate the orders, however, the nursing staff can prepare for admitting and caring for the patient. The physician is also alerted to urgent medication issues. This practice facilitates patient admission for the interventional cardiologist allowing for uninterrupted procedure time.

The expanded pharmacist role began in 2001 and is still an evolving practice. Physician confidence in the pharmacist's knowledge and skill enabled delegation of this responsibility. Formal impact assessment of this form of practice will follow.

In this practice site, the pharmacist has a unique and expanded role. The goal is to ensure optimal medication use to achieve positive clinical and pharmacotherapeutic outcomes in each patient. Enhanced patient care is provided without duplication of service.

IMPLEMENTATION OF A PHARMACIST INITIATED PNEUMOCOCCAL/INFLUENZA VACCINATION PROGRAM AT A TERTIARY CARE INSTITUTION

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Rationale: Influenza and pneumococcal disease cause substantial morbidity and mortality in Nova Scotia. Immunization, the primary strategy to reduce complications associated with these diseases, is often underutilized. To improve immunization rates, national guidelines recommend that every contact with the health care system be used as an opportunity to target those at high risk. Previous attempts, utilizing different strategies, were unsuccessful in improving immunization rates within our facility. As pharmacist-initiated programs have been shown to be successful, we developed such a program to target high-risk inpatients for influenza and pneumococcal vaccines.

Implementation: In phase 1 of implementation, a physician's standing order was developed that captured pertinent items required for patient assessment for eligibility of vaccination. Patient educational material and wallet cards for documentation of immunization were also developed. Phase 2 involved inservice education and dissemination of this strategy to clinical pharmacists within the facility. Phase 3 of the program involved pharmacists identifying high-risk patients, providing one-on-one patient education and recommending immunization. Once the pharmacist obtained patient consent for immunization, a physician co-signed the standing order and vaccine was administered by nursing staff.

Impact: The program was initiated in October 2001, with pharmacist's recommendations over a 6-week period resulting in 130 patients receiving influenza vaccine, with 53/130 also receiving pneumococcal vaccine. A pharmacist initiated vaccination program resulted in a large number of patients receiving vaccine, who would not have otherwise been immunized. Due to the initial success of the program, it is being repeated throughout the duration of the 2002-2003 influenza season.

ASSESSMENT OF PATIENTS' KNOWLEDGE OF WARFARIN: IDENTIFYING GAPS AND NEED FOR IMPROVED PATIENT EDUCATION

Rubina Sunderji, Pharm.D., FCSHP, Ken Gin, M.D., FRCPC, Vancouver General Hospital and University of British Columbia, Vancouver, BC, Canada

Rationale: Patient self-management of warfarin is an evolving strategy. Due to the complexity of warfarin, proper knowledge of this drug is requisite for patients managing their own anticoagulation.

Objective: To assess baseline knowledge of warfarin in patients enrolled in a randomized study comparing warfarin self-management with the conventional physician method.

Methods: Patients treated with warfarin were referred by physicians based on competency and capability of managing their own therapy. Patients were administered a standard questionnaire before receiving education or training in self-management. Their baseline knowledge of various aspects of warfarin therapy was assessed including indication, laboratory monitoring, and drug and dietary influences. Warfarin knowledge in relationship to age, level of academic education and treatment duration was examined using the chi-square test.

Results: Thirty-nine patients completed the questionnaire. Only 14 (36%) respondents stated that a pharmacist had provided them information about warfarin whereas the remainder had received information from other health professionals. All patients knew their indication for warfarin and target INR but 4 (10%) were unable to describe the risks associated with out-of-range INR. Six (15%) respondents admitted to using ASA or ibuprofen for headaches and 23 (59%) were unaware that ibuprofen could increase the risk of bleeding with warfarin. Sixteen (41%) patients were unaware that herbal preparations could adversely interact with warfarin and 15 (38%) were consuming herbal preparations. Four (10%) patients were uninformed of the potential for dietary interferences with warfarin. Knowledge of warfarin did not appear to be influenced by age, level of education or treatment duration.

Conclusion: Even in this carefully selected cohort, we identified important gaps in their knowledge of warfarin and the need for enhanced education.

EVALUATION OF CARDIAC RISK FACTORS IN RENAL TRANSPLANT RECIPIENTS.

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Rational: Cardiovascular disease (CVD) is the cause of death in almost half of renal transplant recipients with functioning grafts. Cardiac risk factors in general population, such as dyslipidemia is also predictive in transplant recipients. Objectives: The primary objectives of this study were to characterize and stratify cardiac risk factors in renal transplant recipients at our outpatient clinic and to develop and implement a dyslipidemia-management protocol in this population. Methods: Medical charts for a total of 98 patients transplanted between Jan 1998 to Oct 2001 were reviewed and cardiac risk factors using Framingham scoring system were determined. A dyslipidemia management protocol was developed based on most recent NCEP Guidelines and a copy of this protocol was inserted in medical records of 42 patients, stating their calculated 10-year cardiac risk percentage and a dyslipidemia treatment option based on NCEP Guidelines. Results: A significant number of transplant recipients were at intermediate to high risk for developing CVD. Majority of patients had elevated lipids and only a small fraction was receiving anti-lipid therapy. Our protocol was not effectively utilized as indicated by the small number of patients receiving anti-lipid therapy.

Conclusions: Considering high prevalence of risk for developing CVD in transplant recipients, aggressive intervention with diet and lipid lowering therapy is warranted.

THE SAFETY OF MORPHINE IN PRETERM AND TERM NEONATES UNDERGOING PERCUTANEOUS VENOUS CATHETER PLACEMENT

Charlene Lee, BScPhm1-4, Anna Taddio, BScPhm, MSc, PhD1, Vibhuti Shah, MD3, Boriana Parvez, MD2, Omar Parvez2, Lisa O'Brien, BSc2 and Gideon Koren, MD2. Departments of Pharmacy1 and Paediatrics2, The Hospital for Sick Children and Departments of Paediatrics3 and Pharmacy4, Mount Sinai Hospital, Toronto, Canada.

Rationale of Study: Percutaneous venous catheter (PCVC) placement is a painful procedure performed in neonates requiring long-term venous access. Although analgesics are occasionally used to manage pain, there is a lack of published safety and effectiveness data.

Objectives of Study: The objective of this interim analysis was to determine the safety of morphine for PCVC placement.

Study Design and Methods: Double-blind, randomized, controlled trial in preterm and full-term infants on assisted ventilation or continuous positive airway pressure (CPAP). Infants received either: 1) amethocaine (1g for 40 minutes) and placebo morphine (dextrose); 2) morphine (0.1mg/kg intravenously) and placebo amethocaine; or 3) amethocaine and morphine, prior to PCVC placement. Respiratory and cardiovascular parameters were monitored for 24 hours.

Results: An interim analysis of 59 participants demonstrated no differences among groups in demographic characteristics (ANOVA; $p>0.05$). Repeated measures ANOVA revealed no differences among groups in rate of ventilation ($p=0.67$), FiO2 ($p=0.56$), oxygen saturation ($p=0.93$), and mean arterial pressure ($p=0.72$). Heart rate was higher in the amethocaine group ($p=0.003$). 38% of amethocaine-treated infants, 24% of the morphine-treated infants and 41% of the combination-treated infants, had increased FiO2 requirements ($p=0.9$). Of note, 29%, 24% and 29%, respectively, were already receiving morphine infusions as part of their clinical care. Concurrent morphine administration was not associated with deleterious effects on respiratory parameters ($p>0.05$).

Conclusions: Pre-treatment of PCVC placement pain with morphine does not appear to be associated with short-term adverse cardiovascular and respiratory effects in preterm and full-term infants on assisted ventilation or CPAP.

HOSPITAL PHARMACY TECHNICIAN WORK REDESIGN

Jennifer Noriel-Griarte, Pharmacy Technician Diploma, York Central Hospital Pharmacy Services, Rabina Rice, Pharmacy Technician Diploma, York Central Hospital Pharmacy Services, Monique Agostinelli, Drug Evaluation Pharmacist, BScPhm Pharm D, York Central Hospital Pharmacy Services, PRESENTING AUTHORS: Jennifer Noriel-Griarte, Rabina Rice, Monique Agostinelli, York Central Hospital Pharmacy Services

SUBMISSION SUMMARY: Over the years, the role of Pharmacy Technicians has changed drastically in the hospital setting. Today, Pharmacists and Technicians are a team in providing quality care for the community.

Pharmacy Technicians are responsible for routine tasks such as filling and delivering of patients' medications, pass medications, unit dose prepackaging, sterile manufacturing, maintain nursing unit wardstock, main stock inventory, workload measurement. The work redesign allows Technicians to perform new responsibilities involving: Kardex Reviews on manual Medication Administration Records, identifying discrepancies, initiating incident reports, performing dosage calculations for sterile solutions and chemotherapy, and obtaining patient demographic data for the Pharmacist (e.g. height and weight). This allows the Pharmacist to have more time and flexibility in practicing core clinical duties and optimizing patient care.

The work redesign project was piloted and implemented within 1 year. The project has improved job satisfaction for the Pharmacy Technicians and has had a positive impact on Pharmacist's ability to provide pharmaceutical care. They are now an integral part of the healthcare team in all patient care areas.

PROPOSED POSTER ABSTRACTS:

1. Medication dispensing and delivery; cost effective
2. Medication incidents; identifying discrepancies
3. Kardex Review of manual MARS; guidelines
4. Obtaining patient demographic data
5. Dosage calculations for sterile preparations and chemotherapy

Tuesday, February 4 10:15 – 10:45 – Exhibit Hall

THE EFFECT OF NEGATIVE MEDIA EVENTS ON MEDICATION TAKING BEHAVIOUR IN ADULTS - A SYSTEMATIC LITERATURE REVIEW

Alice YS Huh. BSc. Phm

Objective: A systematic review of literature exploring the effect(s) of negative media events on the medication taking behaviour of the general adult population? Intervention – Negative media events about prescription medication. Outcome of Interest – Effect on medication taking behaviour. Population – adults of independent decision making capacity.

Methods: Systematic search of the literature, selection process based on inclusion and exclusion criteria, validation of the citations selected and a structured data extraction sheet for consistent extraction of data.

Results: Four studies were identified. The studies were conducted mostly in women, and all the studies examined the behaviour surrounding the oral contraceptive pill. Three were questionnaire studies and one examined medication behaviour using administrative databases. Three studies found that media did impact medication-taking behaviour while one did not. Factors identified included the level of reliance on the physician for drug information as well as patients age.

Discussion and Conclusion: More studies are needed in other patient groups with other medications to elucidate other potential factors that influence medication taking in response to media events. Media reports are not always harmful, however its effects are important to recognize when considering how patient outcomes may be influenced by publicity.

Wednesday, February 5 10:15 – 11:00 – Frontenac Foyer

AN ASSESSMENT OF THE AFFILIATION BETWEEN AUTHORS AND SPONSORS OF PUBLISHED CLINICAL TRIALS OVER A 20-YEAR PERIOD: AN UNHEALTHY ALLIANCE?

Susan Buchkowsky, BSc (Pharm), Peter J. Jewesson, PhD FCSHP, Pharmaceutical Sciences Clinical Service Unit, Vancouver General Hospital, Vancouver Coastal Health Authority

Objectives: To characterize clinical drug trial author-sponsor affiliations, research funding sources and clinical outcomes trends over time.

Methods: 500 randomly selected clinical trial publications from 5 influential medical journals over a 20-year period were reviewed. For each journal, 10 randomly selected issues/year were scanned to identify papers meeting inclusion criteria. Five articles per journal-year were then randomly selected and reviewed to determine author affiliations, study drug funding sources, study outcomes and other factors.

Results: Industry funding, solely or in part, was identified for 36% of the clinical trial publications analyzed. Peer-reviewed funding was found in a further 36% of the studies, and the remainder of studies had no funding source declared. The incidence of industry-sponsored trials increased over the 20-year period to a maximum of 69% in 1996-2000. Author-industry affiliations increased to 66% in 1996-2000 for those trials with sole industry funding. The incidence of studies with author-industry affiliations increased for all five journals reviewed and was greatest for North American publications. Regardless of funding source, clinical outcome results favoured the study drug. The incidence of trials reporting positive outcomes for the study drug modestly increased for industry sponsorship groups, while the reverse was observed for peer-reviewed and no funding declared funding groups.

Conclusions: To our knowledge, this is the first published report to characterize author-sponsor affiliations according to funding source and time. Our results indicate that both pharmaceutical industry sponsored trials and author-sponsor affiliations are common and the incidence is increasing. This increase in industry involvement provides the potential for bias in clinical trial publications.

Key Words: affiliation, industry, author, sponsor, clinical, drug, research

OPTIMIZING MANAGEMENT OF THE CRITICALLY ILL PHARMACOGICALLY PARALYZED MECHANICALLY VENTILATED PATIENT

Lisa Burry, BScPharm, PharmD; Patricia Hynes-Gay, RN, MA, CNCC(C); Sangeeta Mehta, MD, FRCPC, Mount Sinai Hospital

Neuromuscular blocking agents (NMBAs), often used to manage ventilator asynchrony in patients refractory to heavy sedation, have complicated pharmacokinetics that make clinical application technically difficult. The continuous NMBA administration has been associated with a number of adverse effects including post-paralytic syndrome. Vigilant monitoring is required to minimize the risk of this complication without compromising efficacy.

The goals of the project were to 1) revise the existing NMBA formulary selections; 2) develop dosage titration guidelines; and 3) incorporate VTE and corneal abrasion prophylaxis into our previous pre-printed orders.

A comprehensive literature search for use of NMBAs in the ICU was conducted. Based on the best available evidence, prescribing guidelines were developed for the selection and administration of agents. Nursing-directed dosage titration guidelines were developed that incorporated sedation guidelines, congruent Train-of-Four and ventilation monitoring, and the concept of daily NMBA drug holiday. The draft was reviewed by 20 nurses and 2 senior ICU RTs, then approved by the Adult Critical Care Team and the Pharmacy & Therapeutics Committee. The final version was developed as a pre-printed order.

The next phase of the study will involve the implementation and evaluation of the algorithm for efficacy and safety. A prospective evaluation will be conducted to assess the selection of agents, the feasibility of following the dosage titration guidelines, and the complications associated with NMBA use (e.g. VTE, inappropriate sedation orders, duration of mechanical ventilation, development of post-paralytic syndrome). As a comparison, a retrospective chart review of patients pharmacologically paralyzed using our previous protocol will be conducted.

DEVELOPMENT OF AN ICU SPECIFIC EVIDENCE-BASED INTRAVENOUS ELECTROLYTE REPLACEMENT ALGORITHM

Sandy Lu, BScPhm Candidate, University of Toronto; Lisa Burry, BscPharm, PharmD; Ioanna Tzianetas, BScPhm; Stephen Lapinsky, MD, FRCPC, Mount Sinai Hospital.

Electrolyte deficiencies are common in ICU patients, especially those with sepsis and acute pancreatits. Lack of controlled data in this setting to support electrolyte replacement, especially for patients with renal failure, makes it difficult to prescribe precisely. Thus there are several possible problems: lack of consistency among prescribers, partial repletion and the need for repeat doses, over correction in patients with renal dysfunction, inappropriate laboratory measurements, and excessive administration of IV fluid.

The goals of our project were to 1) develop an ICU specific evidence-based electrolyte replacement algorithm; 2) provide recommendations for laboratory work; and 3) provide safe intravenous administration guidelines.

Two investigators (SL, LB) conducted a comprehensive literature search for the management of four major electrolytes deficiencies (K+, Mg+, PO43-, Ca2+). Based on the best available evidence an algorithm was developed that accounted for both the degree of electrolyte depletion and degree of renal dysfunction, while providing instructions for drug administration and laboratory monitoring parameters. Two investigators (IT, SL) reviewed the algorithm for accuracy and precision and acted as mediators when discrepancies were present in the literature. Complete guidelines were sent to the Adult Critical Care Team and Pharmacy & Therapeutics for approval.

The next phase of our study will involve the implementation and validation of the algorithm for efficacy and safety. A prospective evaluation of the algorithm's effect on electrolyte corrections, need multiple doses, and use of laboratory blood work will be conducted. As a comparison, a retrospective chart review for the management of electrolyte deficiencies will also be conducted.

PHARMACIST COMPUTER SKILLS AND NEEDS ASSESSMENT SURVEY

Robert M. Balen PharmD[1], Peter J. Jewesson PhD FCSHP [2], [1]Informatics Coordinator, Pharmaceutical Sciences Clinical Service Unit, Vancouver Hospital and Health Sciences Centre, 855 W. 12th Avenue, Vancouver BC, Canada, V5Z- 1M9, 2 Director Pharmaceutical Sciences Clinical Service Unit, Vancouver Hospital and Health Sciences Centre, and Professor Faculty of Pharmaceutical Sciences University of British Columbia.

INTRODUCTION: Healthcare professionals must be able to effectively use information technology in order to optimize patient care, research and education.

PURPOSE: To gain a better understanding of the computer skills and needs of our pharmacists.

METHODS: In May 2002, an 84-question written survey was distributed by mail to 106 practicing pharmacists in our multi-site 1500-bed acute adult tertiary care teaching hospital.

RESULTS: Fifty-eight surveys (55% of total) were returned within the two-week study period. Survey responses reflect the opinions of hospital pharmacists with a broad range of education and practice experience. Most respondents regularly used computers in the work environment for drug distribution, information management and communication purposes. Few reported experience with handheld computers. Software experience varied according to application. While patient care information software and email was commonly used, experience with spreadsheet, statistical, and presentation software was negligible. Internet search engine use was reported to be the most common method of seeking clinical information online. Lack of familiarity with computer related terms was prevalent. Self-reported basic computer skill was typically of moderate level and varied between certain computing tasks. File management was commonly described as a difficulty, while Internet access and navigation skills were rated highly. Most pharmacists believed they needed to upgrade their computer skills, particularly medical database and Internet searching, in order to improve their practice effectiveness.

CONCLUSION: Most pharmacists believed they needed to improve their computer skills. Medical database and Internet searching skills were perceived to be skills in greatest need of improvement. The majority of respondents believed that their professional practice effectiveness would improve if their computer skills were improved.

FACILITATING DELIVERY OF CONTINUING PHARMACY EDUCATION VIA STREAMING MEDIA IN A LARGE CANADIAN TERTIARY CARE TEACHING HOSPITAL

Elaine Chong, BSc(Pharm)[1]; Robert M. Balen BSc (Pharm), PharmD[2], [1]Doctor of Pharmacy Student, Faculty of Pharmaceutical Sciences, University of British Columbia, [2]Informatics Coordinator, Pharmaceutical Sciences Clinical Service Unit (CSU), Vancouver General Hospital (VGH), Vancouver Coastal Health Authority (VCHA)

BACKGROUND: Over 70 contact hours of live continuing education seminars are presented annually to members of our pharmacy department. Only a small proportion of all invitees are able to attend due to scheduling and traveling barriers.

OBJECTIVES: To enhance access to continuing education content by developing a process for recording live presentations and making them available for viewing via streaming media through the Internet and hospital local area network (LAN).

METHODS: Desired streaming media content authoring product features were delineated and seven criteria were generated. Literature and Internet searches were conducted to identify streaming media authoring software that would meet these criteria. Lecturers provided educational content consisting of slides in PowerPoint™ format. Live audio was recorded in real time during scheduled presentations using a microphone and the "record narration" function of PowerPoint™. After conversion to streaming media format using the selected authoring software, files were published to the department Internet site and copied to a shared directory on the hospital LAN. Playback was tested form both sources on a variety of computer configurations. The minimal computer configuration consisted of a 266 MHz Pentium I processor with 64 MB of RAM, using Windows 98 and Windows NT 4.0 operating systems. Both Netscape 4.05 and Internet Explorer 5.5 web browsers were tested for playback ability over broadband and 33.6 Kbps modem connections.

RESULTS: Twelve software products were identified. One product, Impatica for PowerPoint™ met the seven a priori criteria. Ten presentations were recorded and converted to streaming media format. Playback was satisfactory from all sources on minimal computer configurations at both connection speeds. No conflicts with existing corporate computer and Internet browser configurations were encountered. Feedback from viewers has been positive.

CONCLUSION: Streaming media is a viable option to improve access to internal seminar-style educational content. Delivery of this content via PC and the hospital LAN or Internet is a low production cost method that permits simple playback using standard PC configurations.

Key Words: Streaming Media, Pharmacy, Education, Internet

PERCEPTIONS OF PROFESSIONAL SERVICES OF A PHARMACY DEPARTMENT : A COMPARISON OF STAKEHOLDER GROUPS

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Objective: To determine perceptions of 4 stakeholder groups regarding awareness, quality and priority of professional services provided by our pharmacy department.

Methods: A 32-item survey was designed to elicit anonymous opinions regarding the drug distribution, clinical, education and research services provided. Surveys were distributed over a 90-day period to patients, nurses, physicians and pharmacists at the hospital.

Results: Four hundred and eighty-seven (19%) of the 2,568 distributed surveys were returned. Of the 460 surveys analyzed, there were 38 (8%) patient, 276 (60%) nurse, 102 (22%) physician and 44 (10%) pharmacist respondents . Patients were the least aware of the 32 services provided, while pharmacists were the most familiar. Nurses and physicians were aware of many of the 32 services provided, but were less aware of services not typically provided by a pharmacy and those offered in select areas or to specific stakeholders only. Most respondents rated the professional services as excellent or good. Respondents ranked the review of prescriptions for appropriateness; the dispensing of oral, intravenous and total parenteral nutrition preparations; the resolution of patient-specific drug distribution issues; group medication counseling sessions; continuing education programs and the Clinical Drug Research program as most important.

Conclusions: This study has provided us with valuable information about patient, nurse, physician and pharmacist perceptions regarding awareness, quality and priority of patient care, education and research services currently offered by the pharmacy department at this hospital. This information will be used in our plans to further enhance the awareness, magnitude and quality of professional services that we provide.

Key words: hospital pharmacy services, health personnel perceptions, patient perceptions, survey, questionnaire

OPTIMIZING CARE OF DIABETES PATIENTS WITH ISCHEMIC HEART DISEASE AT BURNABY HOSPITAL

Wendy A. Leong, PharmD, BCPS, MBA,… Lorna S. Leckie, RN, BA, CDE, #, Marshall Dahl, BSc, MD, PhD, FRCPC(endo),* Burnaby Hospital,# Burnaby Research, BC, Canada, University of British Columbia,* Vancouver, BC, Canada*

Ischemic heart disease (IHD) is the #1 cause of death in diabetes (DM) patients. The study objectives were: (i) to establish baseline patterns of practice; (ii) to identify key problems; and (iii) to improve care of DM-IHD patients at our busy, 515-bed, university-affiliated, primary and secondary care centre (i.e. 60,000 emergency visits per year).

This retrospective, open, randomized evaluation included all Type 2 DM patients admitted with a primary or secondary diagnosis of IHD, from April 1998 to March 1999. Results for the 130 study patients included: average (avg.) age of 71 years (yrs); avg. age at DM diagnosis 59 years; 45% female; 22% ethnic; 74% overweight; 75% hyperlipidemia; 78% HT; 63% smokers; 54% family history of IHD; and an avg. of 5 cardiovascular risk factors. DM complications included: 18% eye surgery; 2% limb amputation; 36% coronary angiography; 15% PTCA; and 14% CABG.

The most common reasons for admission were: IHD, CHF and AMI. During hospitalization, there was also: (a) a higher usage of ASA, diuretics, beta-blockers, digoxin, and ACE inhibitors; (b) hyperglycemia and hypoglycemia in 43% and 36%, respectively; (c) HT in 70% and (d) thrombolysis in 17%. Routine lab monitoring did not include HbA1C, lipids or microalbuminuria.

Of the 130 study patients, 75% were discharged alive and 8% died. Referrals to our Diabetic Education Centre, and Healthy Heart Program were low (19%, 9%, respectively). Our recommendations included: (i) more intensive control of blood glucose, IHD, hypertension and diet; and (ii) more DM-IHD patient education and discharge follow-up.

WHAT'S NEW IN ANTICOAGULATION PRACTICE? INNOVATIVE STRATEGIES FOR INPATIENT AND OUTPATIENT MANAGEMENT

Wendy A. Leong, PharmD, BCPS, MBA#, Terence G. Sparling, MD, FRCP(C)(Internal Medicine), FRCP(C)(Hematology)*, Burnaby Research# & University of British Columbia,* Vancouver, BC, Canada*

Thromboembolism (TE) affects large patient populations (e.g. cardiology, neurology and geriatrics) who often require warfarin. This project demonstrates excellent opportunities for clinical pharmacists to expand their role in anticoagulation practice.

This is an overview of 3 inter-related strategies: (1) Strategy 1 - an inpatient warfarin dosing service implemented in 1994; (2) Strategy 2 - an outpatient DVT treatment program implemented in 1995; and (3) Strategy 3 - an outpatient warfarin dosing service implemented in November 2001.

Three retrospective evaluations were conducted for Strategies 1 and 2. Strategy 3 was a prospective project, with program evaluation scheduled for 2002. An interdisciplinary team was involved in all 3 strategies.

Strategy 1 was re-evaluated in 1999 with a 50-chart review showing: average age 50 years; 32 females; average hospitalization 13.4 days; warfarin for DVT prophylaxis (40%), atrial fibrillation (28%), DVT/PE (14%); average time to therapeutic INR 2.9 days; no INR results over 6.0; and 1 GI bleed.

A 1995/1996 evaluation of Strategy 2 demonstrated a safe alternative to hospitalizations for selected DVT and PE patients. LMWH and warfarin dosing were managed by clinical pharmacists. No hemorrhage or recurrent TE was reported.

Strategy 3 was implemented at 2 pilot sites of a major chain drug store. The new program, based on consensus guidelines, included physician referral, certified anticoagulation pharmacists, warfarin co-prescribing, point-of-care INR testing (POCT), certified POCT assistants, etc.

These 3 strategies offer more convenience and choices for patients and physicians; and more opportunities for clinical pharmacists in anticoagulation management.

ANTICOAGULATION TRAINING, CERTIFICATION & RESOURCE TEAM FOR CANADA

Wendy A. Leong, PharmD, BCPS, MBA & The Anticoagulation Resource Team, Burnaby Research* & University of British Columbia,* Vancouver, BC, Canada*

No standard warfarin certification exists in Canada. Specialized training and education are highly recommended in consensus guidelines and by expert groups such as the Anticoagulation Forum. In 2002, an intensive anticoagulation training program was created for clinical pharmacists who had a strong interest in teaching and supporting outpatient anticoagulation (warfarin) management. With the support of Roche Diagnostics Canada, a 3.5-day anticoagulation workshop was developed.

The format included didactic lectures, case studies, hands-on training and written exams. The material was based on the U.S. Certified Anticoagulation Provider Program and other references. The 6 interactive modules included: pathophysiology of thromboembolic disease; pharmacology of antithrombotic drugs; warfarin pharmacology; point of care INR testing (POCT); patient assessment and monitoring; and patient education. Certification was granted upon successful completion.

Two anticoagulation workshops in Montreal (July 2002) and Halifax (September 2002) have yielded 20 and 11 certified anticoagulation pharmacists, respectively. Twenty-four of the 31 certified anticoagulation pharmacists have joined the Anticoagulation Resource Team (ART).

ART is a network of clinical pharmacists (mainly hospital/clinic-based) who promote optimal oral anticoagulation management through education and knowledge-sharing in Canada. ART members will provide assistance and local support to patients and community pharmacists in BC, Alberta, Saskatchewan, Ontario, Quebec and Nova Scotia. Community pharmacists will be encouraged to develop their practice, from POCT INR training to full anticoagulation dosing and management. The anticoagulation workshops and ART have been successful in increasing the confidence and skills of clinical pharmacists in warfarin management and POCT.

COMMUNITY-BASED WARFARIN CO-PRESCRIBING AND POINT OF CARE INR TESTING

Wendy A. Leong, PharmD, BCPS, MBA and The London Drugs Anticoagulation Service Team, Burnaby Research* and University of British Columbia,* Vancouver, BC, Canada*

Traditionally, hospital and community pharmacists have avoided warfarin management. The major problems are lack of warfarin expertise, subtherapeutic dosing, inconsistent lab monitoring and follow-up. For over 20 years, outpatient anticoagulation services have provided safer and more effective care (e.g. Ontario, Quebec, USA).

In November 2001, a community anticoagulation management program was implemented in BC at 2 London Drugs locations (Brentwood Mall & Kerrisdale). The outpatient service was created to assist physicians with warfarin dosing and management. The new program met the 12 Anticoagulation Forum consensus guidelines and the College of Pharmacists of BC's approval.

The service included: training and certification of 10 anticoagulation pharmacists, warfarin co-prescribing, warfarin protocol, point-of-care INR testing (POCT), certified POCT assistants, counseling rooms, physician referrals, etc. We created a mobile anticoagulation cart; patient chart (i.e. patient monitoring form, warfarin dosing grid, progress notes, etc); a reference binder; cheat sheets; POCT INR log book; patient education (e.g. signs and symptoms of hemorrhage and stroke), etc.

At each brief visit, the patient's INR and daily warfarin dosage are determined. The finger stick method (POCT INR) requires only 1 drop of blood with the result ready in 2 minutes. The pharmacist co-prescribes and schedules the patient's next INR.

Audits for safety and efficacy were completed in May 2002 and September 2002. The London Drugs service is reliable, faster and more convenient for physicians and patients. Satisfaction surveys were completed for patients, physicians and pharmacy staff with excellent feedback. The formal program evaluation will be completed by November 2002.

DRUG UTILIZATION REVIEW OF SURGICAL PROPHYLAXIS IN HIGH RISK CESAREAN SECTION

Jonathan S.C. Lau, B.Sc.(Pharm), Anthony Taddei, PharmD, Paula Kimoto, B.Sc.(Pharm) , Carrie Wong, M.D. (Fraser Health Authority, BC)

Background: Antibiotic prophylaxis can significantly reduce undesirable outcomes in high risk patients undergoing Cesarean Section.

Objective: To determine antibiotic prophylaxis patterns, outcomes and associated cost-savings issues in high risk patients undergoing Cesarean Section.

Methods: A retrospective chart review was performed on 275 consecutively selected patients who underwent Cesarean Sections in the Fraser Health Authority . 171 patients met the criteria.

Results: Rate of antibiotic prophylaxis between three hospitals ranged from 63.3% to 88.2%. Cefazolin or clindamycin was prescribed in 78.5% of cases. Cefotetan was prescribed in 11.5% of cases. Primary endpoint was composite clinical endpoint (CCE), consisting of febrile morbidity, endometritis and wound infection. Antibiotic prophylaxis reduced CCE from 29.3% to 8.5% (RR 0.29, $p<0.005$). Secondary endpoints were clinical infection (endometritis, wound infection) and endometritis. Antibiotic prophylaxis reduced clinical infection from 22.0% to 4.6% (RR 0.21, $p<0.005$) and endometritis from 22.0% to 3.8% (RR 0.17, $p<0.005$). Length of stay (LOS) was reduced from 4.9 days to 3.5 days ($p < 0.05$). Universal antibiotic prophylaxis can result in annual savings of $3,387 and 95 inpatient-days. Potential health system resource saving is $95,000.00 annually.

Conclusion: There is significant variation amongst hospitals in the FHA. Universal antibiotic prophylaxis with cefazolin or clindamycin for all high risk patients undergoing C-section should decrease infection rates, drug expenditures and length of stay.

THE INFLUENCE OF AN ENRICHED SUMMER PROGRAM ON PHARMACY STUDENTS' FUTURE CAREER DECISIONS.

Knoppert DC, MScPhm(1), Donck C(1), Prior M(1), Mall A(2), Sung M(2), Bombassaro AM, PharmD(2).St Joseph's Health Care London(1) and London Health Sciences Centre(2), London, Ontario.

Rationale : To provide an opportunity for highly motivated, impressionable pharmacy students to appreciate a career in hospital pharmacy.

Description: Students were scheduled 1 day per week in a non-distribution area. Opportunities were available to shadow pharmacists in various clinical settings. Additional education included journal club and the Pharmacotherapy Self Assessment Program. Collaboration between the 2 institutions allowed the students to participate in city-wide activities. At the end of the summer the students completed a survey to evaluate their experiences.

Results: Twelve students completed this program. Two students had previous experience in a hospital pharmacy. Ten students felt that the amount of preparation work for different activities was just right. All were positively influenced towards a career in hospital pharmacy. This was based on interactions with both pharmacists and technicians. Four students were influenced to apply for a residency program. All indicated that they would seriously consider employment at their site in the future.

Importance: A summer program that provides a stimulating and challenging environment can positively influence undergraduate pharmacy students. Given the shortage of pharmacists, and the financial incentives that are available in the community setting, it is critical that institutional pharmacy departments provide a positive, nurturing experience.

DEVELOPMENT OF A LABOUR AND DELIVERY MEDICATION COMPATIBILITY CHART

Shelley Jarbo, Pharmacy Student. Mount Sinai Hospital, Toronto, Ont, Michael Heffer BSc.Phm. MHSc. Mount Sinai Hospital, Toronto, Ont

Quality improvement initiatives that include front-line staff in the development phase of the project have been shown to improve the outcome and increase satisfaction with the resulting product. The perinatal pharmacy receives many drug information requests from the nursing staff in the Labour and Delivery (L&D) Suite, the majority of which relate to medication compatibility.

To address this issue, a new compatibility chart specifically tailored to the needs of the L&D nursing staff has been developed. Several focus groups were conducted with nursing staff to determine the most important aspects of a compatibility chart. From the focus group discussions, the aspects determined to be most important included; ease of locating information on the chart, portability, resistance to damage, appropriateness of information and chart accessibility.

A survey was then developed and distributed to L&D nursing staff to determine a consensus on the design and characteristics of the chart. Compatibility information was gathered from a comprehensive review of the literature including, textbooks, database searches of the primary literature as well as communication with product manufacturers.

The final chart is a colour coded, alphabetical listing of the 55 most common medications used in L&D, available on-line at the bedside in each labour room , posted in the medication room in the nursing station as well as a pocket size, laminated copy.

This tool represents a successful quality improvement initiative that utilized front-line employees in the development phase suggesting that a similar process would help facilitate practice changes improving staff workload and patient care.

QUINIDINE AND QUININE INDUCED ESOPHAGITIS

Andrea Kelly, BSc Phm, CD Bayliff, PharmD, Department of Pharmacy Services, London Health Sciences Centre, London, Ontario, Dr. RA Malthaner, MD, Department of Surgery, London Health Sciences Centre, London, Ontario

Pill-induced esophagitis is reported to occur with over 70 drugs. We report two potential cases of esophageal damage secondary to cinchona alkaloids.

A 79-year-old male taking quinine 200mg tid experienced nausea and black emesis. Endoscopy revealed a confluent, linear ulceration on the distal end of the esophagus. No prior history of peptic ulcer disease existed and the patient was not taking NSAIDs. Other medications included warfarin, digoxin, losartan, pravastatin, beclomethasone, ipratropium, salbutamol, vitamin C and zinc. Quinine was discontinued with symptomatic improvement.

A 73-year-old male was admitted to hospital not able to swallow. Previous endoscopies revealed erosive esophagitis with ulcerations and stricture. Barium swallow showed a narrow gastroesophageal junction. Biopsy was negative for metaplasia, dysplasia and malignancy. Eleven endoscopies and esophageal dilatations were performed prior to this admission (PTA) with increasing frequency (approximately every 2 weeks PTA). The patient's history included chronic epigastric pain, GERD, hiatal hernia, fundoplication, diverticulitis and an arrhythmia. Medications included quinidine 200mg qid, propafenone, lorazepam, fluticasone, fluvastatin, calcium, vitamin E, omeprazole, ranitidine, metoprolol and ASA (started 3 months PTA). Due to the possibility of quinidine-induced esophageal damage the drug was discontinued. Following discontinuation the patient still required esophageal dilatations. However, these dilatations were reduced in terms of frequency and the stricture was softer and more easily dilated. In addition, a planned esophagectomy was deferred and an esophageal stent placed.

These cases illustrate the importance for pharmacists to recognize drugs that can induce esophageal damage and increase awareness of the profound effect these medications may have on morbidity.

REVIEW OF A PHARMACIST-RUN HOSPITAL CLINIC BASED SMOKING CESSATION PROGRAM

Halapy H, Pharm D, MacCallum L, Pharm D, St. Michael's Hospital, Toronto, Ontario

Smoking increases the risk for cardiovascular events two to four fold. Since patients with diabetes and renal disease already have an elevated risk for cardiovascular events, we established a pharmacist-run smoking cessation clinic in our outpatient diabetes and renal clinics in order to reduce the number of smokers. Two pharmacists took referrals from physicians of the clinics for smoking cessation. Initial patient assessment included smoking history, past quit attempts, medical history and the administration of the Fagerstrom Tolerance Test (1). The pharmacists also provided counseling and education to the patients on the benefits of quitting, the barriers to quitting smoking, nicotine withdrawal, and smoking cessation therapies. Interventions by the pharmacists included setting a quit date, and coping strategies counseling. Follow-up was done at regular intervals either in person or via telephone for up to a 3 month period.

Sixty-one smokers in the renal and diabetes clinics were identified by the pharmacists, of whom 23 agreed to enroll in the smoking cessation program. The majority of patients elected to use either weaning (n=9), nicotine patches (n=7), or buproprion (n=3) as a method to aid smoking cessation. Nine of the 23 patients (39%) who enrolled were able to quit smoking. Of these 9 patients, 3 went on to relapse later and restart smoking. Therefore, the overall success rate with the smoking cessation program is 26%. This overall success rate is comparable to what is reported in the literature (2).

Compendium of Pharamceuticals and Specialties, 2002, CPhA Editorial Staff, p1121.

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A SYSTEMATIC REVIEW OF GASTROPARESIS MEDICATION LITERATURE IN PATIENTS WITH DIABETES

Halapy H, Pharm D, Loh C, BSc Phm, St. Michael's Hospital, Toronto, Ontario

Gastrointestinal reflux is a common occurrence in patients with diabetes. The removal of cisapride off the Canadian market, has rendered the selection of appropriate therapeutic agents more difficult. We therefore endeavored to systematically evaluate the current literature to facilitate treatment of these patients in our diabetes clinic practice. A search of the entire Medline database using MeSH headings (diabetes mellitus, gastroparesis) and keywords (gastroparesis, gastric statsis), and a search of EBM databases (Cochrane, ACP Journal Club, DARE) were performed. Articles' reference lists were also reviewed as part of the search strategy. Only randomized controlled trials involving patients with diabetes and head to head comparisons of pharmacologic agents to treat gastroparesis were selected for systematic appraisal. The criteria for article appraisal came from the Users' Guides to the Medical Literature. How to Use an Article About Therapy or Prevention (1,2). Two independent reviewers evaluated the articles.

Six articles meeting our criteria were found. Study results supported the use of metoclopramide (3 trials), erythromycin (2 trials), and domperidone (1 trial); however, a higher adverse effect rate was reported for metoclopramide. One study also evaluated bethanecol (with metoclopramide), but no clinical endpoints were evaluated for the bethanecol, suggesting only changes in gastric motor activity for the bethanecol. RCT's stating inclusion of patients with diabetes were lacking for other agents. This systematic literature evaluation will help with the selection of agents for the treatment of gastroparesis in patients with diabetes in clinical practice.

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DEVELOPMENT OF A BILINGUAL PHARMACY INTRANET WEBSITE

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A bilingual pharmacy intranet website within the McGill University Health Centre (MUHC) was developed in 2001. The main objectives were to improve communication and clinical information to the pharmacy, nursing and medical staffs via a central source and provide quick access to information.

A literature search was undertaken. Numerous internet sites and experts (webmasters, computer graphics artists, and project managers) were consulted. The nature of information to publish was determined and the best format to adopt (structure, security, and legal aspects) was evaluated. 23 pharmacists contributed to the contents of the site. Finally, policy and procedures were elaborated to ensure optimal quality of documents.

Various sections to be used by pharmacists and other health care professionals were developed, including a section devoted to pharmacy students and residents. The site possesses a well-elaborated hierarchy structure. The contents are abundant: 1351 web pages (HTML/PDF), 488 photos, 4596 internal and 1567 internet links, and a search engine.

In this period of professional staff shortages, the use of information technology constitutes an efficient means of communication. The development of a pharmacy intranet website has allowed for rapid access to up-to-date information regarding the activities of the department and has made available to the MUHC community, information related to the use of medication, thus, ensuring an efficient provision of pharmaceutical care and services to the hospitalized and ambulatory clientele.

THE IMPACT OF PROTOCOL-DIRECTED SEDATION IN THE MEDICAL-SURGICAL INTENSIVE CARE UNIT AT THE UNIVERSITY HEALTH NETWORK

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Purpose: Sedation protocols may have an impact on patient outcome and ICU costs. We developed, implemented, and evaluated a sedation assessment tool (SAT) and sedation protocol (SP). Endpoints included sedative drug usage, length of ICU stay (LOS), and ventilator-free days (VFD).

Methods: 130 patients pre-protocol and 127 patients post-protocol, were included in a prospective, before-and-after design. The Sedation-Agitation-Scale (SAS) was selected and a SP was developed. Educational tools (algorithms and video tape) were created and sessions held to teach the MSICU staff to aid implementation of the SP.

Results:

Variable	Pre	Post	P value
APACHE II (mean, SD)	17 .4, 9.7	19.0, 10.1	0.216
Length of ICU stay (LOS) (mean, median, SD)	5.2, 2.8, 6.1	6.0, 3.0, 8.5	0.482
Ventilator-Free Days (VFD) (mean, median, SD)	18.4, 26.0, 12.0	19.4, 25.2, 11.0	0.871
Mortality (%)	34 (26.%)	28 (22%)	

There was a trend toward a reduction in codeine, haloperidol, meperidine, midazolam, morphine and propofol use following the implementation of the SP. There was a non-significant increase in the use of lorazepam and diazepam with the exception of fentanyl.

Conclusions: A systematic approach to the selection of a sedation assessment scale with an accompanying sedation protocol can be accomplished at a tertiary care hospital. With the exception of lorazepam, diazepam and fentanyl, results shows a non-significant trend towards a decrease in sedative drug usage. There are no significant differences in LOS and VFD between the two groups.

Key Words: Sedation, Medical-Surgical Intensive Care Unit, Sedation Protocols, Sedation-Agitation-Scale, Sedative Drug Usage

ESTABLISHING A DEDICATED COMPUTER TERMINAL FOR PATIENT ACCESS TO ONCOLOGY TEACHING MATERIAL

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Rouge Valley Health System, Centenary Health Centre Site is a 400 bed tertiary care community hospital. The Oncology Program has an outpatient oncology clinic serving the populations of Scarborough and Durham region.

The Oncology Program recently expanded its patient teaching program with the establishment of a computer terminal dedicated for patient use. The computer is situated in the waiting area of the chemotherapy clinic allowing patient access while waiting for their treatment. Patient family members are also encouraged to utilize the computer while their family member receives treatment.

The computer terminal has been loaded with a series of oncology teaching CD roms. The "Jack Digital" series from Princess Margaret Hospital was selected due to the availability of titles and ease of use. To date, the computer terminal has been loaded with the CD roms for bladder cancer, breast cancer, colorectal cancer, Hodgkin's lymphoma, leukemia, lung cancer, Non-Hodgkin's lymphoma, ovarian cancer, pancreatic cancer and anemia. The CD roms review each disease site with an introduction, diagnosis, types, treatment, supportive care, diet, nutrition and lifestyle section.

The establishment of a dedicated computer terminal for patient use has increased access to teaching material in the oncology program. Patients are encouraged to access the CD roms which provides information in a clear and understandable manner. These CD roms help to supplement oncology information that is provided by the oncology team.

ESTABLISHING PREPRINTED ONCOLOGY ORDERS IN A COMMUNITY HOSPITAL OUTPATIENT ONCOLOGY CLINIC

Swasti Bhajan Mathur BScPhm, Tony Cheung BScPhm, Rochelle Europa BScPhm, Rouge Valley Health System, Centenary Health Centre Site, Toronto ON

Rouge Valley Health System, Centenary Health Centre Site is a 400 bed tertiary care community hospital. The Oncology Program has an outpatient oncology clinic serving the populations of Scarborough and Durham region.

With the multitude of outpatient oncology protocols available, it became apparent that a coordinated, simplified approach was required for ordering chemotherapy. In the spring, a task force was established to develop a preprinted template for the oncology protocols. The task force consisted on an oncologist, pharmacist, chemo clinic nurse and palliative care coordinator. The task force established a template which was distributed to the oncology team for review. The template had sections for patient information (height, weight, BSA and allergies), chemotherapy (name of drug, dose in mg/m2, route and schedule), blood parameters (absolute limits for white blood cells, absolute neutrophil count and platelets) and pre-chemotherapy antiemetics.

After several revisions, a final template format was established. Several core breast oncology protocols (ie AC, AC-T, CMF, FEC) were then implemented using this format. After an initial trial period of 2 weeks, further revisions were made. The template was then expanded to include the majority of oncology outpatient protocols used at the centre. A generic template was also established for new or uncommon protocols.

The preprinted protocols have been in use for several months and have been readily accepted. The preprinted protocols replaced the hand written orders enhancing clarity and decreasing the potential for errors.

PHARMACOKINETICS OF ORAL CIPROFLOXACIN IN NON-INFECTED PATIENTS ON CONTINUOUS CYCLING PERITONEAL DIALYSIS.

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Rationale: In order to avoid aminoglycosides, the International Society for Peritoneal Dialysis recommends cefazolin and ceftazidime for empiric peritonitis treatment. Ciprofloxacin covers the relevant gram-negative pathogens without the resistance issues associated with ceftazidime. However, ciprofloxacin pharmacokinetic data in patients on continuous cycling peritoneal dialysis (CCPD) is lacking.

Objectives: i) To determine the pharmacokinetics of oral ciprofloxacin in CCPD patients; ii) To compare serum and dialysate ciprofloxacin concentrations with minimum inhibitory concentrations (MIC) of gram-negative bacteria associated with peritonitis; and iii) To establish a guideline for oral ciprofloxacin dosing in the empiric treatment of CCPD-related peritonitis.

Methods: Eligible CCPD patients received two doses of ciprofloxacin 750mg orally q12h. Serial blood and end-of-dwell dialysate samples were collected during the first 12-hour interval, and a final blood sample and end-of-dwell dialysate sample was collected from the overnight dwell at the end of the second 12-hour interval. Ciprofloxacin concentrations were determined by a liquid chromatographic-fluorescence method. Pharmacokinetic calculations were completed assuming a one-compartment model.

Results: Eight patients completed the study. The mean pharmacokinetic parameters determined for ciprofloxacin were (mean ± SEM): serum t1/2 of 10.1 ± 1.2 hours, serum Cmax of 2.7 ± 0.5 mg/L, serum tmax of 1.6 ± 0.1 hours after the first dose and peritoneal clearance of 1.2 ± 0.1% of the mean calculated total body clearance. While all patients achieved serum AUC:MIC >125 for Escherichia coli and Klebsiella species after the first dose, only two patients achieved this goal for Pseudomonas aeruginosa. End-of-dwell dialysate concentrations were above the MIC for E. coli, Klebsiella spp., and P. aeruginosa after the second dose.

Conclusion: Ciprofloxacin 750mg orally q12h in CCPD patients may be useful in empiric management of bacterial peritonitis for gram-negative coverage and for the treatment of documented peritonitis caused by sensitive E. coli or Klebsiella species. However, traditional therapy with ceftazidime may be required for documented pseudomonal peritonitis. In addition, we observed adequate serum ciprofloxacin concentrations with this regimen to treat systemic gram-negative infections caused by sensitive E. coli or Klebsiella species.

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Introducing CSHP's newest Fellows

DOUGLAS DOUCETTE, CD, BSc(Pharm), PharmD, FCSHP

Doug Doucette earned his Bachelor of Science in Pharmacy from Dalhousie University (1989) and Doctor of Pharmacy from the University of Toronto (1995).

Doug Doucette is a Pharmacist Officer at the rank of Major in the Canadian Forces. Since joining the military in 1985, he has served at Canadian Forces Hospitals in Gagetown, New Brunswick, and twice in Halifax. In 1997, he spent six months in Bosnia-Hercegovina (former Yugoslavia) providing clinical services to the Canadian military's Advance Surgical Center and medical supplies and equipment repair services from the co-located Forward Medical Equipment Depot. In 1999, Doug spent several weeks in a military clinic providing pharmacy services to 1000 Kosovar refugees housed at CFB Borden. From 1997 to 2001, he was coordinator and preceptor for the Canadian Forces' Maintenance of Clinical Skills Program for Pharmacist Officers based primarily at Edmonton's Royal Alexandra Hospital in the Adult Intensive Care Unit and on the Orthopedic, Neurotrauma and General Surgery Units. He served as Commanding Officer of Regional Medical Equipment Depot Calgary and is presently commanding the Central Medical Equipment Depot Petawawa, the last remaining facility of its type in the Canadian Forces.

Doug has lectured and facilitated classes and seminars at Dalhousie University and the University of Alberta. He was an author of one of the CSHP Direct Patient Care Modules (1996) and has facilitated numerous workshops and seminars to pharmacists across Canada in pharmaceutical care and direct patient care practice skills. He is a past member of the CSHP Pharmaceutical Care Advisory Committee and former Education Co-Coordinator of Western Provinces' Banff Seminar. Doug was Chairperson of the CSHP Task Force on the Potential Impact of the Entry-Level Doctor of Pharmacy Degree in Canada and continues to represent the Society in discussions with faculties in reference to entry-level degree issues. Doug has numerous publications to his credit and is a reviewer for Canadian Journal of Hospital Pharmacy and Canadian Council on Continuing Education in Pharmacy.

In his spare time, Doug enjoys composing and performing music on his guitars, playing golf and hockey, running, mountain biking, fishing and spending time with family in the beautiful Ottawa Valley.

MARY H.H. ENSOM, BS(PHARM), PHARM.D., FASHP, FCCP

Dr. Mary Ensom (formerly Chandler) is Professor and Director of the Doctor of Pharmacy Program, Faculty of Pharmaceutical Sciences, University of British Columbia and Clinical Pharmacy Specialist, Children's & Women's Health Centre of British Columbia.Mary earned her B.S. (Pharm.) degree in 1977 and Pharm.D. in 1985, both from the University of Kentucky. In between degrees, she was a hospital pharmacist and developed clinical services such as pharmacy-based patient education programs at hospitals in South Carolina, Washington, and Kentucky. She completed a 2-year postdoctoral fellowship in Clinical Pharmacokinetics at the University of Kentucky in 1987, served on the faculty there and also as Director of the Clinical Pharmacokinetics Service at the University of Kentucky Medical Center for 10 years (1987-97) before joining the Faculty at UBC in 1997. Mary's long-term research interests have been in clinical pharmacokinetics and pharmacodynamics (e.g., effects of gender, age, and other pathophysiologic states on pharmacokinetics and pharmacodynamics; novel approaches to therapeutic drug monitoring; and hormonal influences and drug action and disposition in women), with more recent emerging interests in pharmacogenetics and pharmaceutical outcomes evaluations. During her career, she has supervised or co-supervised more than 90 hospital pharmacy residents and postdoctoral fellows. Mary has published more than 225 articles, book chapters, and research abstracts. She has received a number of research awards from ACCP, AACP, and ASHP; the 1990 Astra Clinical Pharmacy Research Award; and 6 outstanding teacher awards. Mary is an Associate Editor for the Can J Hosp Pharm, serves on the Editorial Boards of Pharmacotherapy and The Annals of Pharmacotherapy, and is a Section Editor for the J Inform Pharmacother. She recently completed a 5-year term as ACCP's representative to the United States Pharmacopeia and currently chairs CSHP's Research Committee and serves on numerous committees of other international pharmacy organizations such as ACCP, ASHP, and ACPA.

HARRY S. HOPKINS

Harry graduated from the University of Saskatchewan with a Bachelor of Science in Pharmacy in 1971. He completed a CSHP accredited Hospital Pharmacy Residency at the Ottawa Civic Hospital in Ottawa, Ontario as one of the first two residents at the Ottawa Civic Hospital Pharmacy. After the residency Harry spent 1 year in community practice before returning to the hospital setting. Harry has worked in several hospital pharmacy positions: Staff Pharmacist at the Ottawa Civic Hospital(1973-74); Staff Pharmacist at the Ottawa General Hospital(1974-80); Clinical Staff Pharmacist at the Ottawa General Hospital(new facility built in 1980) for the Hematology/Oncology/Gastroenterology programs(1980-86); Assistant Director of Pharmacy and Clinical Pharmacist for Gynecology-Oncology(1986-91); Assistant Director of Pharmacy and Clinical Pharmacist for Gynecology-Oncology as well as Clinical Supervisor for the Clinical Specialist in the Blood and Marrow Transplant Program and staff Pharmacists in Hematology/Oncology/Radiation Oncology plus the Ottawa Regional Cancer Center(1991-96); Clinical Specialist for the Blood and Marrow Transplant Program(1996 to present).Harry has been involved in the establishment of Unit-Dose, CIVA, Pharmacy Computer systems and Clinical Pharmacy programs at the Ottawa General Hospital. Harry is a preceptor for Pharmacy Residents at the Ottawa Hospital in the Blood and Marrow Transplant Program. He is an active member of the Canadian Society of Hospital Pharmacists, is on the CSHP-Ontario Branch Executive, the Canadian Association of Pharmacists in Oncology and the Canadian Blood and Marrow Transplant Group. He is also a Quality Assurance assessor for the Ontario College of Pharmacists Practice Review. Harry has presented at CSHP local, provincial and national events. Most recently Harry has been the co-planner and co-chairperson for the inaugural International Blood and Marrow Transplant Pharmacists Conference(2001) in Keystone, Colorado, the second annual meeting in Orlando, Florida(2002) and planning for the third annual meeting in Keystone, Colorado(2003)

Introducing CSHP's newest Fellows

CARLO MARRA

Carlo Marra received his B.Sc.(Pharm.) in 1992 and completed a hospital pharmacy residency at Vancouver General Hospital in 1993. From 1993 to 1995, Carlo completed a Doctor of Pharmacy degree from UBC and subsequently worked as a research pharmacist with a special interest in pharmacoeconomics until 1999. Since 1999, Carlo has been enrolled in the Ph.D. programme in the Department of Health Care and Epidemiology, Faculty of Medicine at U.B.C. In this programme, he has concentrated on health economics, pharmacoepidemiology and outcomes research in the area of musculoskeletal diseases and has received fellowship and/or grant support from the Canadian Arthritis Network, CIHR, the Arthritis Society, and the Michael Smith Foundation for Health Research.

At the CSHP BC Branch level, Carlo has served on the Executive as Programmes Chair, President-Elect, President and Past-President. From a CSHP National perspective, Carlo has functioned as the chair for the Branch Website Development Committee and the Task Force to Prepare a Website Development Business Plan and has been a member of the Practice and Specialty Network Committee. Carlo has also served as an appraiser for the CSHP Awards and as a reviewer for the Canadian Journal of Hospital Pharmacy.

Carlo has co-authored over 35 peer-reviewed publications in journals such as Arthritis and Rheumatism, Journal of Rheumatology, Pharmacoeconomics, Annals of Pharmacotherapy, and the Canadian Journal of Anaesthesia. In addition, he has presented almost 40 presentations of original research at national and international conferences and has co-authored four book chapters. Carlo has also received several national and provincial CSHP research and publication awards.

DR. GLEN J. PEARSON

Glen Pearson graduated with a Bachelor of Science degree in biology from the University of Western Ontario in 1987. He then proceeded to the Philadelphia College of Pharmacy & Sciences where he completed both his Bachelor of Science in Pharmacy (1989) and Doctor of Pharmacy (1991) degrees. Currently, he is pursuing a Master of Medical Science degree in Clinical Epidemiology through distance learning from the School of Medical Practice and Population Health at the University of Newcastle in Australia.

Glen began his career as the Clinical Coordinator of Critical Care/Cardiology at St. Joseph's Health Centre in Toronto (1991-92). He then accepted the position of Clinical Coordinator of Cardiology & Cardiovascular Surgery at The Toronto Hospital, General Division (1992-97). At this time, he joined the faculty of the Doctor of Pharmacy Program in the Faculty of Pharmacy at the University of Toronto, first as a Lecturer (1992-96) and then an Assistant Professor (1996-97). Subsequently, he moved to Halifax assuming the responsibilities of Clinical Coordinator of Cardiology at the Queen Elizabeth II Health Sciences Centre and Assistant Professor in the College of Pharmacy at Dalhousie University (1997-2001). Currently, he is a member of the Division of Cardiology at the University of Alberta where he is the Co-Director of the Cardiac Transplant Clinic and Deputy Medical Director & Director of Research of the Cardiovascular Risk Reduction Clinic. As an Assistant Professor of Medicine in the Faculty of Medicine & Dentistry, he provides clinical education to medical and cardiology residents and teaches the cardiology module designed for the first year medical students. He also serves a Clinical Consultant to Capital Health Regional Pharmacy Services and provides specialty cardiology rotations to both undergraduate and graduate pharmacy students and residents.

In addition to his clinical and academic responsibilities, Glen maintains an active interest in practice-based cardiovascular research. Currently, he is the principal investigator or co-investigator of a number of research projects. He has published a number of articles on his research and practice in pharmacy and medical journals. He has also delivered numerous continuing education lectures to pharmacists, physicians, and nurses on cardiovascular pharmacotherapeutics and related topics.

Glen maintains active membership in a number of professional organizations including CSHP, the Canadian College of Clinical Pharmacy (CCCP), Canadian Cardiovascular Pharmacists Network (CCPN), the Canadian Cardiovascular Society, the American College of Clinical Pharmacy, and the American Society of Health Systems Pharmacists. Glen is the current President of CCCP, a member of NAPRA's National Professional Practice Committee, and a past Chairperson of CCPN. He has also been actively involved and held a number of positions in CSHP, including Chairperson of the Task Force on Pharmacists Prescribing (1995-2001), National Delegate for Ontario Branch (1993-96), Publications Advisory Committee (1995-97), Standards Committee (1994-96), and Awards Committee for Ontario Branch (1991-94). Glen was appointed as the CSHP representative to NAPRA's National Standards of Practice Committee from 1996 to 1999. He has also served as an appraiser for the CHSP Awards Committee and a reviewer for the journal (CJHP) for the past 10 years.

ALICE TSENG

Alice Tseng obtained her Bachelor of Science in Pharmacy (1991) and Doctor of Pharmacy (1994) degrees from the University of Toronto, and completed a hospital Pharmacy Residency at the Toronto Western Hospital (1992). Alice worked as the HIV Primary Care Pharmacist at the Wellesley Hospital from 1994-96, and since 1996, has been the HIV Pharmacotherapy Specialist at the Immunodeficiency Clinic, Toronto General Hospital.

Alice was one of the first pharmacists in Canada to establish a specialty practice in HIV ambulatory care. Alice co-founded the CSHP Ontario HIV Pharmacists Specialty Group (1995) and the Canadian HIV/AIDS Pharmacists Network (1997), and has chaired both groups. Alice is an Assistant Professor with the Faculty of Pharmacy, University of Toronto, and is involved in undergraduate and Doctor of Pharmacy teaching. She also routinely precepts Pharm.D. candidates from other universities in Canada and the U.S. In conjunction with colleagues from St.Michael's Hospital, Alice developed and coordinates an HIV specialty pharmacy residency program.

Alice has authored or co-authored 40 publications and book chapters related to HIV pharmacy practice. She lectures frequently throughout Canada, the United States and Russia, and has presented close to 30 papers at national and international HIV research conferences. Her research interests include therapeutic drug monitoring, antiretroviral drug interactions, adverse reactions, and medication adherence. She is a regular grant reviewer for the Canadian Foundation for AIDS Research, the Ontario HIV Treatment Network, and the University of Toronto.

Alice serves on the Board of Directors of the AIDS Committee of Toronto, the largest AIDS service organization in Canada. She is on the National Ethics Review Committee for the Canadian HIV Trials Network, and serves on the Infectious Diseases Editorial Advisory Board for the Annals of Pharmacotherapy. Alice is a reviewer for CJHP, a frequent invited lecturer for many local, provincial, and national CSHP events, and a recipient of several provincial and national CSHP awards.

Introducing CSHP's newest Fellows

LIEUTENANT-COLONEL RÉGIS VAILLANCOURT

LCol Vaillancourt obtained his Bachelor of Pharmacy from Université Laval in 1983, his hospital pharmacy residency certificate from the National Defense Medical Center (in affiliation with University of Toronto) in 1987, and his Doctor of Pharmacy from the University of Toronto in1995.

Since joining the military in 1980, he has served as a military pharmacist in Valcartier, Québec; Ottawa, Ontario; and Chilliwack, B.C. He has worked as a staff pharmacist, as a clinical co-ordinator, and as a residency co-ordinator in various military hospitals. He has also been employed as a pharmacist in a Field Ambulance, and as Commanding Officer of a medical equipment depot. Since completing his Doctor of Pharmacy degree, he has worked as the Canadian Forces Clinical Pharmacy Advisor, and recently assumed the role of Pharmacy Branch Advisor. He is now responsible for directing all aspects of military pharmacy practice within the Canadian forces. To enhance the performance of his duties, he has worked extensively with both the Ontario College of Pharmacists and l'Ordre des pharmaciens du Québec. He also serves as a board member of NAPRA, and sits as the vice-president of the Military and Emergency Pharmacy section of the FIP.

To maintain his clinical skills as a pharmacist, he provides patient care on a part-time basis at both the University of Ottawa Heart Institute - Cardiac Surgical Unit and Roger Larouche Pharmacy in Hull. LCol Vaillancourt has been active as lecturer at many CME forums, and has authored articles on the practical provision of pharmaceutical care. He has authored CME modules on the management of diabetes and CHF.

LCol Vaillancourt is an avid gardener and dedicates his spare time to his friends and family.

LINDA VAILLANT

Linda Vaillant obtained her Bachelor of Pharmacy Degree from the Faculty of Pharmacy at the University of Montreal in 1989. She did her residency at the Royal Victoria Hospital and obtained her Master Degree in Hospital Pharmacy Practice in 1990, also from University of Montreal.

From then on, Linda worked at Royal Victoria Hospital in many clinical sectors (emergency, operating room, neonatal intensive unit, oncology, etc.). In 1993, Linda became a clinical coordinator for the pharmacy department and was also put in charge of the oncology pharmacy. Linda became an expert in oncology pharmacy practice and was deeply involved with groups of professionals in that area. She gave numerous conferences and got to present at international meetings. Linda led the work of many pharmacists who wanted to define tools to help their practices, which brought to the publication of guides and guidelines for pharmacists. She was also a current speaker for the Faculty of Pharmacy of the University of Montreal on all oncology topics, for undergraduates as well as post-graduates in pharmacy.

Linda during that time decided to go back to school to start a M.B.A. part-time program . She decided to complete that degree by doing a full time semester in the United Kingdom, at the Warwick Business School. Her specialty was taken in International Management and Marketing. Linda finally obtained her M.B.A. Degree from a famous business school in Montreal called École des Hautes Études Commerciales, in 1997.

From 1997 to 1998, Linda became project manager for the pharmacy department at Royal Victoria Hospital. In 1998, Linda moved to her actual position as Director of Pharmacy of the Montreal Heart Institute.

Linda has been very involved with the Canadian Society of Hospital Pharmacists (C.S.H.P.), working on the first agreement between the Association des Pharmaciens des Établissements de Santé (A.P.E.S., in Quebec) and C.S.H.P. She also acted as a delegate for C.S.H.P. for 3 years. Linda has been a member of the Council of A.P.E.S. for 7 years. She is currently the president of A.P.E.S. which is the professional association representing the hospital pharmacists (1100 members) in Quebec.

CSHP WOULD LIKE TO RECOGNIZE THE GENEROUS CONTRIBUTIONS OF THE FOLLOWING SPEAKERS.

Brian Beven
The Hospital for Sick Children
Toronto, Ontario

Swasti Bhajan Mathur
Rouge Valley Health System
Toronto, Ontario

Diane Brideau-Laughlin
South-East Regional Health Authority
Moncton, New Brunswick

Tom Brown
University of Toronto
Sunnybrook and Women's College HSC
Toronto, Ontario

Tammy J. Bungard
Division of Cardiology, University of Alberta
Edmonton, Alberta

Lisa Burry
Mount Sinai Hospital
Toronto, Ontario

Bill Cornish
Sunnybrook and Women's College HSC
Toronto, Ontario

Allison Dekker
The Hospital for Sick Children
Toronto, Ontario

Lisa Dolovich
Centre for Evaluation of Medicines
Hamilton, Ontario

Kathy Griffiths
The Hospital for Sick Children
Toronto, Ontario

Winnie Ho
The Scarborough Hospital – General Division
Toronto, Ontario

Uchenwa Iroaga Genus
University Health Network
Toronto, Ontario

Cynthia Jackevicius
University Health Network
Toronto, Ontario

Derek Jorgenson
Toronto Western Hospital
Toronto, Ontario

Jay S. Keystone, MD, FRCPC
Toronto General Hospital
Toronto, Ontario

Heather Kertland
St Michael's Hospital
Toronto, Ontario

Julie Kim
St Michael's Hospital
Toronto, Ontario

Don Kuntz
Regina Health District
Regina, Saskatchewan

Anisha Lakhani
Fraser Health Authority
Vancouver, British Columbia

Kori Leblanc
St Michael's Hospital
Toronto, Ontario

Ruth Lee
Hamilton Health Sciences Corp.
Toronto, Ontario

Wendy Leong
Burnaby Research and UBC
Burnaby, British Columbia

Jennifer Lowerison
Calgary Health Region
Calgary, Alberta

Lori MacCallum
St Michael's Hospital
Toronto, Ontario

Courtney Maguire
Mount Sinai Hospital
Toronto, Ontario

Fawziah Marra
BC Centre for Disease Control
Vancouver, British Columbia

Allison McGeer
Mount Sinai Hospital
Toronto, Ontario

Barrie McTaggart
McMaster University Medical Centre
Hamilton, Ontario

Terrence Montague
Merck Frosst Canada Ltd.
Kirkland, Quebec

Emily Musing
University Health Network
Toronto, Ontario

Annie Ngan
Cancer Care Ontario
Toronto, Ontario

Anne Nguyen
North Shore Health Region
North Vancouver, British Columbia

Robin K. O'Brien
BC Cancer Agency
Vancouver, British Columbia

Christine Papoushek
Toronto Western Hospital
Toronto, Ontario

Fran Paradiso-Hardy
Sunnybrook and Women's College HSC
Toronto, Ontario

Anil Patel
Ottawa Hospital-Civic Campus
Ottawa, Ontario

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Vivian Quiring and Associates Inc.
Toronto, Ontario

Judy Schoen
Calgary Health Region
Calgary, Alberta

Winnie Seto
The Hospital for Sick Children
Toronto, Ontario

Andrew E. Simor
Sunnybrook and Women's College HSC
Toronto, Ontario

Richard S. Slavik
Vancouver Hospital and Health Sciences Centre
Vancouver, British Columbia

Biljana Spirovski
Humber River Regional Hospital
Toronto, Ontario

Rubina Sunderji
Vancouver General Hospital
Vancouver, British Columbia

Rosemary Tanzini
St Michael's Hospital
Toronto, Ontario

Mike Tierney
The Ottawa Hospital
Ottawa, Ontario

Angela Trop
The Hospital for Sick Children
Toronto, Ontario

David U
ISMP Canada
Toronto, Ontario

Scott Walker
Sunnybrook and Women's College HSC
Toronto, Ontario

Lori Wazny
London Health Sciences Centre
London, Ontario

Donna Wheeler-Usher
Pharmacy Consultant
Halifax, Nova Scotia

Donna M. M. Woloschuk
Winnipeg Regional Health Authority
Winnipeg, Manitoba

Gary Wong
Toronto General Hospital
Toronto, Ontario

Kirsten Woodend
Canadian Pharmacists Association
Ottawa, Ontario

Andrew Wyllie
Mount Sinai Hospital
Toronto, Ontario

Sharon Yamashita
Sunnybrook and Women's College HSC
Toronto, Ontario

Muhammad Zuberi
Toronto General Hospital
Toronto, Ontario

APPLICATION FOR MEMBERSHIP

(Please print) (Fees are valid until June 30, 2003)

Name

(please include professional degrees e.g. B.Sc.Pharm.)

Title

(Position e.g. director of pharmacy, pharmacy student, resident)

If student, anticipated year of graduation/completion

(Name of Hospital/Faculty)

(Business Address)

(Province) (Postal Code)

(Mailing Address, if different than above)

(Province) (Postal Code)

(Email – IMPORTANT – E-nnouncements are provided regularly to our members)

(Business Phone) (Home Phone)

Language preferred: ❑ English ❑ French

Type of membership you are applying for:

❑ Active ❑ Leave of Absence ❑ Active-in-training

❑ Student ❑ Corporate ❑ Supporting ❑ Joint ❑ Retired

Did anyone encourage you to join CSHP? (see reverse)

(print name of referring member)

Have you completed a hospital residency program ❑ Yes

Hospital:

Year Completed:

Total Fee Paid:

❑ Cheque/money order ❑ VISA/MasterCard

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(Signature for credit card charge)

Mail or fax to:

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1145 Hunt Club Rd., Suite 350,
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tel. 613.736.9733 fax 613.736.5660

2002/2003 Membership Fees

(Fees are valid until June 30, 2003)

Active/Supporting

	Branch Fee	National Fee	GST/HST*	TOTAL
Alberta	——-	193.79	13.57	207.36
British Columbia	——-	193.79	13.57	207.36
Manitoba	15.00	193.79	13.57	222.36
New Brunswick	20.00	193.79	29.07	242.86*
Newfoundland	10.00	193.79	29.07	232.86*
Nova Scotia	20.00	193.79	29.07	242.86*
Ontario	65.00	193.79	18.12	276.91*
Quebec	20.00	193.79	13.57	227.36
Saskatchewan	——-	193.79	13.57	207.36

Active-In-Training (Residents)

	Branch Fee	National Fee	GST/HST*	TOTAL
Alberta	——-	52.49	3.67	56.16
British Columbia	——-	52.49	3.67	56.16
Manitoba	15.00	52.49	3.67	71.16
New Brunswick	——-	52.49	7.87	60.36*
Newfoundland	10.00	52.49	7.87	70.36*
Nova Scotia	20.00	52.49	7.87	80.36*
Ontario	5.00	52.49	4.02	61.51*
Quebec	4.00	52.49	3.67	60.16
Saskatchewan	——-	52.49	3.67	56.16

Student

	Branch Fee	National Fee	GST/HST*	TOTAL
Alberta	——-	36.89	2.58	39.47
British Columbia.	——-	36.89	2.58	39.47
Manitoba	——-	36.89	2.58	39.47
New Brunswick	——-	36.89	5.53	42.42*
Newfoundland	2.00	36.89	5.53	44.42*
Nova Scotia	——-	36.89	5.53	42.42*
Ontario	5.00	36.89	2.93	44.82*
Quebec	4.00	36.89	2.58	43.47
Saskatchewan	——-	36.89	2.58	39.47

*copy of your current student card required to secure student rates

- GST applicable to all national fees. GST also applies to Ontario branch fee. GST registration #R106866940
- HST applicable only to national portion of fee in New Brunswick, Newfoundland and Nova Scotia (15%)

CALL FOR ABSTRACTS FOR POSTERS

2003 Annual General Meeting

Delta Hotel, St. John's, Newfoundland

August 17 – 19, 2003

GENERAL INFORMATION

Category

Author must specify the category that best suits the particular poster.

1. Clinical Research
2. Pharmaceutical/Basic Research
3. Case Reports
4. Pharmacy Practice and Administration
5. Drug Use Evaluations
6. Systematic Review, including Meta-analysis

Submissions

You are asked to submit by May 10, 2003:

The original abstract with author and affiliation included, on a plain white sheet of paper, single spaced (following the Criteria). Attach the signature portion of this form to your original.

Please also provide the abstract on a 3-1/2" diskette or by e-mail to ddavidson@cshp.ca in MS Word, formatted for PC.

Please also provide one (1) "blind double-spaced" copy on a 3-1/2" diskette or by e-mail to ddavidson@cshp.ca in MS Word, formatted for PC. Blind refers to deleting all identification (authors' names, institutional affiliations, cities, and signatures). **Failure to comply could mean rejection of submission.**
Mail submission to CSHP, 1145 Hunt Club Road, Suite 350, Ottawa, Ontario, K1V 0Y3, Attention: Abstracts.

Review of Abstracts and Deadlines: All abstract submissions must be postmarked no later than May 10, 2003. The decision regarding acceptance will be made and authors notified within 6 to 8 weeks. Authors of accepted abstracts are not provided with travel funds to attend the conference and are expected to pay the registration fee. Every attempt will be made to notify accepted applicants as soon as possible. Early registration fees will apply to all accepted poster applicants.

Poster Presentation abstracts will be reviewed without knowledge of the author's name or affiliation.

Acceptance is based on scientific merit, originality and level of interest, significance to CSHP members, and compliance with Criteria instructions. Encore presentations will be considered. The original citation must be submitted.

Signature

Submitting author must sign the following form and fill in the appropriate information. This signature verifies you have the approval of all co-authors to present the abstract if accepted by the Educational Services Committee.
(To be attached to the original abstract.)

Call for Abstracts for Posters

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e-mail:

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STYLE RULES

TITLE should be brief and clearly indicate the nature of the presentation. Do not use abbreviations in the title. List authors (presenter first), degrees, institution affiliation, city, and province. Omit titles and appointments.

ORGANIZE BODY OF ABSTRACT according to the selected category as follows:

1. **Clinical Research** – a) rationale of study; b) objectives of study; c) study design and methods used; d) results of study including statistical analysis used; e) conclusion of study, which should be related to the study objectives and results.
2. **Pharmaceutical/Basic Research** – a) rationale of study; b) objectives of study; c) methods used; d) results; e) conclusion and implication to practice.
3. **Case Reports** – a) rationale for case report (why is this case of interest?); b) identification and description of case and problem; c) analysis of problem; d) importance of case to pharmacy practitioners.
4. **Pharmacy Practice and Administration** – a) rationale for report (may include brief statement of what the report is intended to illustrate, or the need which led to the development of this project); b) clear description of the concept, service, role, or situation; c) sequential steps taken to identify and resolve problem, to implement change, or to develop and implement new program; d) end result and evaluation; e) the concept's importance and usefulness to current and/or future practice.
5. **Drug Use Evaluations** – a) rationale or purpose of report; b) objectives of report; c) design and methods used in evaluation; d) results and cost analysis (if done); e) conclusions and implication of results to institution and/or future pharmacy practice.
6. **Systematic Review Including Meta-analysis** – a) rationale for review of topic; b) objectives of review; c) methods used (specify search sources, study selection, study appraisal, study synthesis); d) results of review (may include statistical analysis); e) conclusion of review and implication to practice.

It is very important that the usefulness, importance, and/or purpose of the project be clearly explained. Omit all names and geographical references in the body of the abstract. Failure to do so will disqualify your submission.

CRITERIA FOR ABSTRACT PREPARATIONS

- Recommended font: Times 12
- Title must be in capital letters; do not indent or use abbreviations in title;
- Maximum 250 words;
- Indent 3 spaces in the first line of each paragraph;
- Authors' names and degrees underlined; do not underline affiliation or city;
- List presenting author first;
- List each author's institutional affiliation and city (if more than one author is from the same institution, list that institution only once after the last author from that institution);
- Use standard abbreviations. Place special or unusual abbreviations in parentheses after spelling them the first time they appear;
- Use numerals to indicate numbers, except to begin sentences;
- Use only nonproprietary (generic) names of drugs, material, devices, equipment, etc.

Submissions: You are asked to submit by **May 10, 2003:**

1. The original abstract with author and affiliation included, on a plain white sheet of paper, single spaced (following the Criteria). Attach the signature portion of this form to your original.
2. Please also provide the abstract on a 3-1/2" diskette or by e-mail to ddavidson@cshp.ca in MS Word, formatted for PC.
3. Please also provide one (1) "blind double spaced" copy on a 3-1/2" diskette or by e-mail to astjules@cshp.ca in MS Word, formatted for PC. Blind refers to deleting all identification: authors' names, institutional affiliations, cities, and signatures. **Failure to comply could mean rejection of submission.**

Mail submission to: CSHP, 1145 Hunt Club Road, Suite 350, Ottawa, Ontario, K1V 0Y3, Attention: Abstracts.

Please complete the information below and attach to "blind double-spaced" copies:

Please complete the following information and attach to blinded, double-spaced copies:

Type:

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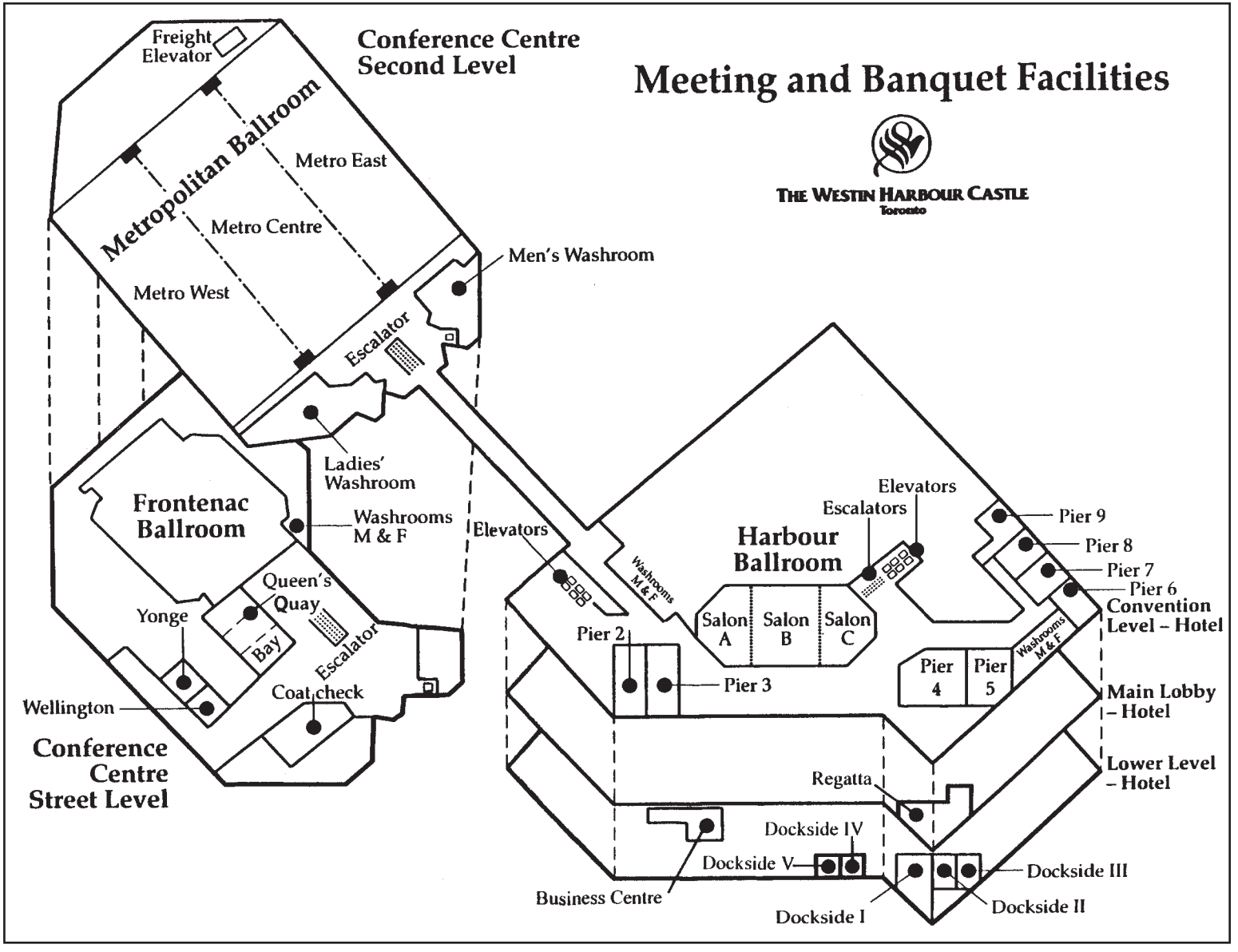
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Coat check
Wellington
Conference Centre Street Level
Harbour Ballroom
Escalators
Elevators
Pier 9
Pier 8
Pier 7
Pier 6
Convention Level – Hotel
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Salon B
Salon C
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Pier 3
Pier 4
Pier 5
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Lower Level – Hotel
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Dockside III
Dockside II
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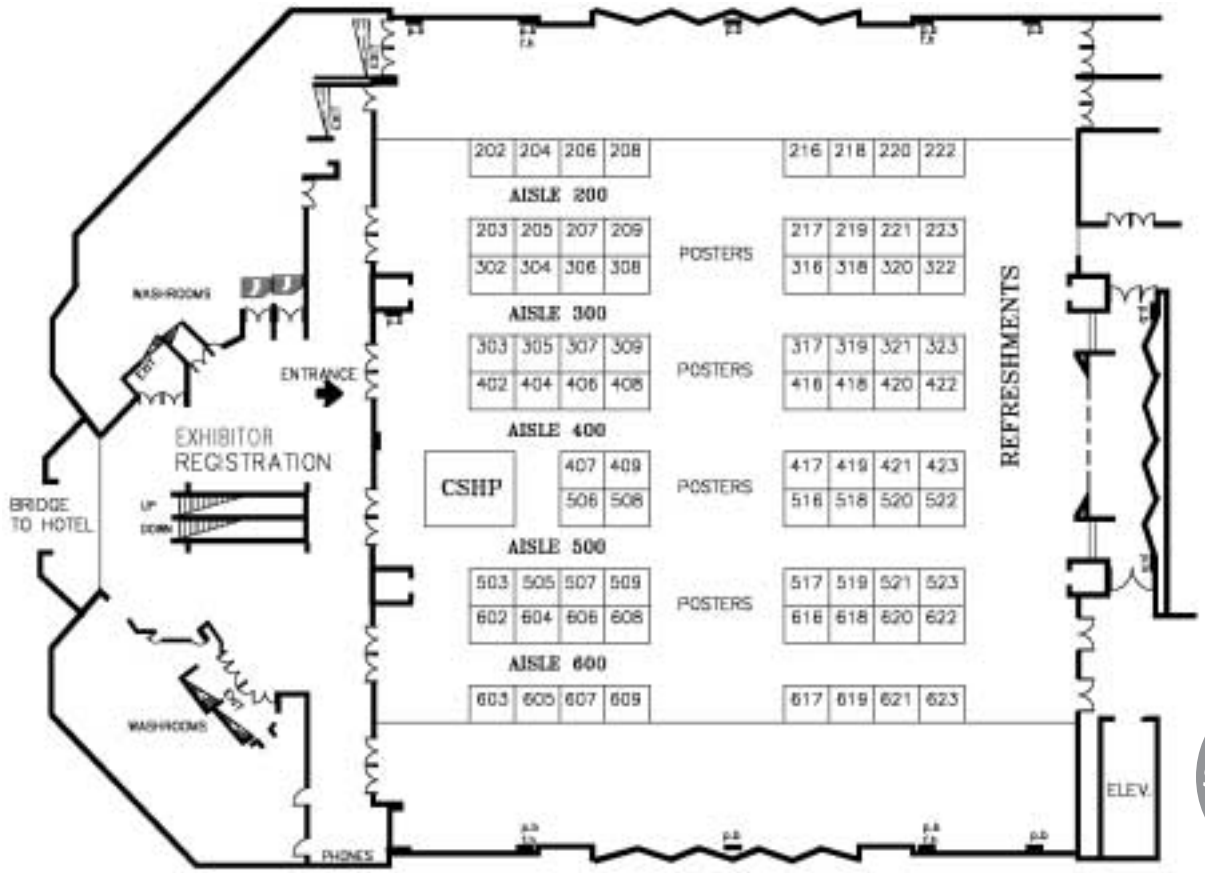

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(Black and White)
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Venofer®

iron sucrose injection

20 mg elemental iron/mL
Therapeutic Class: Hematinic

DESCRIPTION

VENOFER (Iron Sucrose Injection) is a brown, viscous, sterile, nonpyrogenic aqueous solution containing 20 mg elemental iron per mL in the form of an iron(III)-hydroxide sucrose complex as the active ingredient, and water for injection. NaOH may be used to adjust the pH to 10.5 - 11.1. The sterile solution has an osmolarity of 1250 mOsmol/L.

Iron(III)-hydroxide sucrose complex has a molecular weight of approximately 43,200 daltons and a molecular formula as follows:

$$[Na_2Fe_5O_8(OH)\bullet 3(H_2O)]_n\bullet m(C_{12}H_{22}O_{11})$$

where: n is the degree of iron polymerization and m is the number of sucrose molecules in complex with the iron(III)-hydroxide.

VENOFER is available in 5 mL single dose vials. The product contains no preservatives or dextran polysaccharides.

ACTION AND CLINICAL PHARMACOLOGY

VENOFER (Iron Sucrose Injection) consists of polynuclear ferric hydroxide cores surrounded by noncovalently bound sucrose molecules. Following intravenous administration of VENOFER, iron sucrose is dissociated by the reticuloendothelial system into iron and sucrose.

In 22 hemodialysis patients on erythropoietin therapy treated with iron sucrose at 100 mg of iron three times weekly for three weeks, significant increases in serum iron and serum ferritin and significant decreases in total iron binding capacity occurred four weeks from the initiation of iron sucrose treatment.

In healthy adults treated with intravenous doses of VENOFER, the iron component exhibits first order kinetics with an elimination half-life of 6 h, total clearance of 1.2 L/h, non-steady state apparent volume of distribution of 10.0 L and steady state apparent volume of distribution of 7.9 L. Since iron disappearance from serum depends on the need for iron in the iron stores and iron utilizing tissues of the body, serum clearance of iron is expected to be more rapid in iron deficient patients compared to healthy individuals. The effects of age and gender on the pharmacokinetics of VENOFER have not been studied.

In healthy adults treated with intravenous doses of VENOFER, the iron component appears to distribute mainly in blood and to some extent in extravascular fluid. In a study evaluating VENOFER at 100 mg of iron labelled with $^{52}Fe/^{59}Fe$ in patients with iron deficiency, it was found that a significant amount of the administered iron distributes in the liver, spleen and bone marrow. The bone marrow is an iron trapping compartment and not a reversible volume of distribution.

The sucrose component of VENOFER is eliminated mainly by urinary excretion. In a study evaluating a single intravenous dose of VENOFER containing 1510 mg of sucrose and 100 mg of iron in 12 healthy adults, 68.3% of the sucrose was eliminated in urine in 4 h and 75.4% in 24 h. About 5% of the iron was eliminated via renal excretion over 24 h.

INDICATIONS AND CLINICAL USE

VENOFER (Iron Sucrose Injection) is indicated in the treatment of patients with dialysis-associated anemia.

CONTRAINDICATIONS

The use of VENOFER (Iron Sucrose Injection) is contraindicated in patients with evidence of iron overload, patients with known hypersensitivity to VENOFER, and patients with anemia not caused by iron deficiency.

WARNINGS

HYPERSENSITIVITY REACTIONS

POTENTIALLY FATAL HYPERSENSITIVITY OR ANAPHYLACTIC-TYPE REACTIONS CHARACTERIZED BY SHOCK, LOSS OF CONSCIOUSNESS, COLLAPSE, HYPOTENSION, DYSPNEA, OR CONVULSION HAVE BEEN REPORTED RARELY IN PATIENTS RECEIVING VENOFER (IRON SUCROSE INJECTION) (SEE ADVERSE REACTIONS). FATAL IMMEDIATE HYPERSENSITIVITY REACTIONS HAVE BEEN REPORTED IN PATIENTS RECEIVING THERAPY WITH A VARIETY OF PARENTERAL PREPARATIONS CONTAINING IRON CARBOHYDRATE COMPLEXES. FACILITIES FOR CARDIOPULMONARY RESUSCITATION MUST BE AVAILABLE DURING DOSING IN CASE OF SERIOUS ANAPHYLACTOID REACTIONS (SEE ADVERSE REACTIONS). PHYSICIAN VIGILANCE IS REQUIRED WHEN ADMINISTERING ANY INTRAVENOUS IRON PRODUCT.

HYPOTENSION

HYPOTENSION HAS BEEN REPORTED FREQUENTLY IN PATIENTS RECEIVING INTRAVENOUS IRON. HYPOTENSION FOLLOWING ADMINISTRATION OF VENOFER MAY BE RELATED TO RATE OF ADMINISTRATION AND TOTAL DOSE ADMINISTERED. CAUTION SHOULD BE TAKEN TO ADMINISTER VENOFER AS RECOMMENDED (SEE DOSAGE AND ADMINISTRATION).

PRECAUTIONS

General

Because body iron excretion is limited and excess tissue iron can be hazardous, caution should be exercised in the administration of parenteral iron formulations, and treatment should be withheld when there is evidence of tissue iron overload. Patients receiving VENOFER (Iron Sucrose Injection) require periodic monitoring of hematologic parameters, including hemoglobin, hematocrit, serum ferritin and transferrin saturation. Generally accepted guidelines recommend withholding administration of intravenous iron formulations from patients demonstrating a transferrin saturation >50% or serum ferritin >800 ng/mL (see DOSAGE AND ADMINISTRATION and SYMPTOMS AND TREATMENT OF OVERDOSAGE). Transferrin saturation values increase rapidly after IV administration of iron sucrose; thus, serum iron values may be reliably obtained 48 hours after IV dosing.

Local Reactions

Care must be taken to avoid paravenous infiltration. If this occurs, the infusion of VENOFER should be discontinued immediately. Ice may be applied to cause local vasoconstriction and decrease fluid absorption; massage of the area should be avoided.

Oral Iron Use

Oral iron should not be administered concomitantly with parenteral iron preparations. Like other parenteral iron preparations, VENOFER may be expected to reduce the absorption of concomitantly administered oral iron preparations.

Pregnancy

Teratology studies performed in rats at IV doses up to 13 mg iron/kg/day (more than 9 times the maximum recommended human dose for a 70 kg person) and rabbits at IV doses up to 13 mg iron/kg on alternate days (approximately 9 times the maximum recommended human dose for a 70 kg person) have not revealed definitive evidence of impaired fertility. Fetal growth effects at these doses appeared related to low maternal food consumption and low body weight gain. There are, however, no adequate and well controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, VENOFER should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus. When iron sucrose was administered at deliberate overdoses to rabbit dams (up to 215 mg/kg/day) marked fetal/placental iron overload was noted. It is unlikely that significant fetal iron overload would occur in iron deficient pregnant women receiving therapeutic doses of VENOFER to correct iron deficiency (see PRECAUTIONS - General).

Nursing Mothers

VENOFER is excreted in the milk of rats. It is not known whether VENOFER is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised when VENOFER is administered to nursing women.

Pediatric Use

The safety and effectiveness of VENOFER in pediatric patients has not been established.

Geriatric Use

Clinical studies of VENOFER did not include sufficient numbers of subjects aged 65 and over to determine whether they respond differently from younger subjects. Reported clinical experience has not identified differences in responses between elderly and younger patients. In general, dose selection for an elderly patient should be cautious, usually starting with lower doses, reflecting the greater frequency of decreased hepatic, renal, or cardiac function, and of concomitant disease or other drug therapy.

Drug Interactions

Drug interactions involving VENOFER have not been studied.

ADVERSE REACTIONS

The safety of VENOFER (Iron Sucrose Injection) has been documented in 231 chronic renal failure patients exposed to doses of 100 mg iron IV as iron sucrose given up to three times weekly for up to ten doses in three separate clinical trials.

The following adverse events, whether or not related to VENOFER administration, were reported by >5% of those patients: hypotension (36%), cramps/leg cramps (23%), nausea, headache, vomiting, and diarrhea.

Adverse events, whether or not related to VENOFER administration, reported by >1% of these patients are categorized below by body system and ranked in order of decreasing frequency within each body system. Some of these symptoms are seen in dialysis patients not receiving intravenous iron.

Body as a Whole: headache, fever, pain, asthenia, malaise.
Cardiovascular: hypotension, chest pain, hypertension, hypervolemia.
Gastrointestinal: nausea, vomiting, abdominal pain.
Central and Peripheral Nervous Systems: dizziness.
Musculoskeletal: cramps/leg cramps, musculoskeletal pain.
Respiratory: dyspnea, cough.
Skin and appendages: pruritus, application site reaction.

Anaphylactoid reactions were not observed in these clinical studies, but have been reported with iron sucrose, generally at doses higher than 100 mg and/or with fast infusion rates.

Post-Marketing Experience: From the spontaneous reporting system, 46 out of an estimated more than 787,361 patients exposed to VENOFER between 1992 and 2000 reported anaphylactoid reactions, including 15 patients who experienced serious or life-threatening reactions associated with VENOFER administration (see WARNINGS – Hypersensitivity Reactions). Almost all of these patients received single doses greater than 100 mg iron.

Other adverse events, in order of decreasing frequency, reported rarely with VENOFER use, were: hypotension, nausea, headache, edema, metallic taste/taste perversion, vomiting, abdominal pain, phlebitis, urticaria, flushing, dyspnea, pyrexia, rash, dizziness, tachycardia, tachypnea and wheezing. Doses higher than 100 mg are associated with a higher incidence of adverse events. Necrotizing enterocolitis, not necessarily causally associated with VENOFER use, has been reported rarely in very low birth weight premature infants.

SYMPTOMS AND TREATMENT OF OVERDOSAGE

Dosages of VENOFER (Iron Sucrose Injection) in excess of iron needs may lead to the accumulation of iron in storage sites, resulting in hemosiderosis. Periodic monitoring of iron parameters such as serum ferritin and transferrin saturation may assist in recognizing iron accumulation. VENOFER should not be administered to patients with iron overload and should be discontinued when serum ferritin levels exceed usual norms (see PRECAUTIONS – General).

Symptoms associated with overdosage or infusing VENOFER too rapidly include hypotension, headache, vomiting, nausea, dizziness, joint aches, paresthesia, abdominal and muscle pain, edema, and cardiovascular collapse. Most symptoms have been successfully treated with IV fluids, corticosteroids and/or antihistamines.

DOSAGE AND ADMINISTRATION

The dosage of VENOFER (Iron Sucrose Injection) is expressed in terms of mg of elemental iron. Each 5 mL vial contains 100 mg of elemental iron (20 mg/mL).

The recommended dosage of VENOFER for the repletion treatment of iron deficiency in dialysis patients is 5 mL of VENOFER (100 mg of elemental iron) delivered slowly by the intravenous route during the dialysis session. Frequency of dosing should be not more than three times weekly. Most anemic patients will require a minimum cumulative dose of 1000 mg of elemental iron, administered over 10 sequential dialysis sessions, to achieve a favourable hemoglobin or hematocrit response. Patients may then continue to require therapy at the lowest dose necessary to maintain target levels of hemoglobin, hematocrit and iron storage parameters within acceptable limits. Doses of iron sucrose at 20-50 mg iron have been shown to result in clinically meaningful responses in some patients in the maintenance phase.

Administration: VENOFER must only be administered intravenously, by slow injection or infusion, generally into the dialysis line.

Slow Intravenous Injection: In chronic renal failure patients, VENOFER may be administered by slow intravenous injection at a rate of not more than 1 mL (20 mg iron) undiluted solution per minute [i.e., 5 minutes per vial] not exceeding one vial of VENOFER [100 mg iron] per injection. Discard any unused portion.

Intravenous Infusion: VENOFER may also be administered by infusion. This mode of administration may be preferable to minimize the risk of hypotensive episodes (see WARNINGS – HYPOTENSION). The content of each vial must be diluted exclusively in a maximum of 100 mL of 0.9% NaCl immediately prior to infusion. Use immediately after diluting in saline. Unused diluted solution should be discarded.

PHARMACEUTICAL INFORMATION

Proper Name: Iron Sucrose
Chemical Names: Iron (III)-hydroxide sucrose complex
Ferric-hydroxide Sucrose Complex
Saccharated Iron Oxide
Structural Formula: Exact structural formula not known.
Molecular Weight: Approximately 43,200 daltons

Reconstitution Table

Vial Size	Volume of Diluent to be Added to Vial	Nominal Concentration per mL
5 mL	Maximum 100 mL 0.9% NaCl	1 mg/mL (when the maximum of 100 mL 0.9% NaCl is added).

When prepared as an infusion, use immediately. Do not store.

NOTE: Do not mix VENOFER with other medications or add to parenteral nutrition solutions for intravenous infusion. As with all parenteral drug products, intravenous admixtures should be inspected visually for clarity, particulate matter, precipitate, discolouration and leakage prior to administration, whenever solution and container permit. Solutions showing haziness, particulate matter, precipitate, discolouration or leakage should not be used. Discard unused portion.

STABILITY AND STORAGE RECOMMENDATIONS

Store at 15-25°C. Do not freeze. Discard unused portion.

PARENTERAL PRODUCTS

VENOFER must only be administered intravenously by slow injection or infusion (see DOSAGE AND ADMINISTRATION).

AVAILABILITY OF DOSAGE FORMS

VENOFER (Iron Sucrose Injection) is available in 5 mL single dose vials, sold in boxes of 10. Each 5 mL contains 100 mg (20 mg/mL) of elemental iron as an iron(III)-hydroxide sucrose complex in water for injection.

REFERENCES

National Kidney Foundation. K/DOQI Clinical Practice Guidelines for Anemia of Chronic Kidney Disease, 2000. *Am J Kidney Dis* 37:S182-S238. Charytan C, Levin N, Al-Saloum M, *et al.* Efficacy and safety of iron sucrose for iron deficiency in patients with dialysis-associated anemia: North American clinical trial. *Am J Kidney Dis* 37 (2): 300-307, 2001. Van Wyck DB, Cavallo G, Spinowitz BS, *et al.* Safety and efficacy of iron sucrose in patients sensitive to iron dextran: North American clinical trial. *Am J Kidney Dis* 36 (1): 88-97, 2000. Danielson BG, *et al.* Pharmacokinetics of iron (III)-hydroxide sucrose complex after a single intravenous dose in healthy volunteers. *Arzneim-Forsch/Drug Res* 46(I); 6: 615-621, 1996. Beshara S, Lundqvist H, Sundin J, *et al.* Kinetic analysis of ^{52}FE-labeled iron (III)-hydroxide sucrose complex following bolus administration using positron emission tomography. *Brit J of Haematology* 104: 288-295, 1999. Pribilla W. Animal experiments investigating the iron transfer between mother and fetus after the intravenous administration of iron. *Acta Haemat* 12:371-384, 1954. Wöhler F. The iron supply to the fetus. Reprinted from *Archiv für Kinderheilkunde* 155 (3); 1957.

Product monograph available upon request.

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Venofer® has a low incidence of anaphylactic reactions and a proven safety profile.[1,2,†]

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During two clinical studies, there was no evidence of Venofer cross-sensitivity whenadministered to dextran-sensitive patients. (total dextran-sensitive patients; n=33)[1,3]

With over 50 years of worldwide clinical experience and a proven safety profile, Venofer therapy adds up.[1,3]

Venofer is indicated in the treatment of patients with dialysis-associated anemia.

Adverse events >5% [hypotension (36%), cramps/leg cramps (23%), nausea, headache, vomiting, and diarrhea (n=231)].

Warnings: Hypersensitivity reactions. Potentially fatal hypersensitivity or anaphylactic-type reactions characterized by shock, loss of consciousness, collapse, hypotension, dyspnea, or convulsions have been reported rarely in patients receiving Venofer. Fatal immediate hypersensitivity reactions have been reported in patients receiving therapy with a variety of parenteral preparations containing iron carbohydrate complexes. Facilities for cardiopulmonary resuscitation must be available during dosing in case of serious anaphylactoid reactions (see adverse reactions). Physician vigilance is required when administering any intravenous iron product.

Pr Venofer®
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IV Iron Therapy That Adds Up.

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† Spontaneous reporting system recorded an estimated 46/787,361 patients with Venofer-associated anaphylactoid reactions (including 15 patients with serious or life-threatening reactions) between 1992 and 2000.

1. Charytan C *et al*. Efficacy and safety of iron sucrose for iron deficiency in patients with dialysis-associated anemia: North American Clinical Trial. *Am J Kidney Dis* 2001;37(2):300-307. 2. Venofer® product monograph, April 2001. 3. Van Wyck DB *et al*. Safety and efficacy of iron sucrose in patients sensitive to iron dextran: North American Clinical Trial. *Am J Kidney Dis* 2000;36(1):88-97.

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