Appendix 1 (part 1 of 2). Survey of hospital pharmacists concerning hospital practices related to high-dose, extended-interval aminoglycoside therapy for pediatric inpatients

Demographics

1. **What province/ territory are you in? (select from drop-down list)**
2. **What type of organization do you work for?**
   - ☐ Multi-site organization
   - ☐ Single site institution
3. **Hospital classification (select all that apply):**
   - ☐ Tertiary
   - ☐ Community
   - ☐ Academic
   - ☐ Not applicable
4. **What is the size of the pediatric services division in your organization?**
   - ☐ Less than 25 beds
   - ☐ 25–100 beds
   - ☐ More than 100 beds
5. **Does your institution provide pediatric services only? (yes or no)**
6. **What is your role in provision of pediatric pharmacy services?**
   - ☐ Staff pharmacist
   - ☐ Clinical coordinator/ practice leader
   - ☐ Manager
   - ☐ Director
   - ☐ Other, please specify (free text)
7. **What type of pediatric pharmacy services are carried out at your institution?**
   - ☐ Clinical
   - ☐ Distributive
   - ☐ Mixed clinical and distributive

The following questions refer to pediatric inpatients, excluding patients in the neonatal intensive care unit (NICU).

8. **Do you ever use high-dose extended-interval (HDEI) aminoglycosides (AMGs) in your pediatric inpatients? (yes or no)**

The following questions are only for those indicating their institution uses HDEI AMG.

9. **Which patient weight value do you use for dosing HDEI AMGs in pediatrics? * For the following DDW = IBW + 0.4 (ABW – IBW) where ideal body weight (IBW) (kg) = 2.396 e^0.01863 (height in cm) (select all that apply)**
   - ☐ Actual body weight (ABW)
   - ☐ Desired dosing weight (DDW)
   - ☐ ABW when ABW is less than DDW
   - ☐ Standard growth chart for percentile based on age and height
   - ☐ Standard growth chart using 50th percentile if only age is known
10. **Do you use either of the following AMGs as HDEI? (select all that apply)**
    - ☐ Gentamicin
    - ☐ Tobramycin
11. **When would you opt to use HDEI gentamicin/tobramycin in pediatric inpatients (excluding patients in the NICU)? (select all that apply - for each response selected, more questions will follow asking for specific information)**
    - ☐ Specific age
    - ☐ Specific weight
    - ☐ Certain infections
    - ☐ Certain levels of care
    - ☐ Certain comorbidities

11(a) At what age would you start using HDEI gentamicin/ tobramycin in pediatric inpatients (excluding patients in the NICU)?
e.g., if 14 days post-natal enter '14' in age units and select 'days' from drop-down menu

11(b) At what age would you begin to use adult dosing for HDEI gentamicin/tobramycin instead of pediatric dosing (excluding patients in the NICU)?
Enter age in years

11(c) At which weight would you consider using HDEI gentamicin/tobramycin in pediatric inpatients (excluding patients in the NICU)?
Enter weight in kilograms

11(d) Which infections would you use HDEI gentamicin/ tobramycin to treat?
Please indicate the specific dose for each of the infections you would use HDEI to treat. (free text)

Cystic fibrosis	Dose (mg/kg)
Urinary tract infections	Dose (mg/kg)
Febrile neutropenia	Dose (mg/kg)

11(e) Would you use HDEI gentamicin/tobramycin to treat any other infections? Please indicate dose or leave blank if no others. (free text)

Type of infection	Dose (mg/kg)

11(f) For which comorbidities would you consider using HDEI gentamicin/tobramycin in pediatric inpatients (excluding patients in the NICU)? (select all that apply)
- ☐ Renal impairment (Please indicate lower end of cut off [in mL/min] for when you would use HDEI in renal impairment)
- ☐ Hearing impairment (known vestibular disease or clinical hearing loss)
- ☐ Pregnancy
- ☐ Ascites
- ☐ Severe burns

11(g) Please specify any other criteria that are used as inclusion criteria for HDEI gentamicin/tobramycin in pediatric inpatients (excluding patients in the NICU). (free text)

12. **Does your institution follow the same dosing and monitoring practices for both gentamicin and tobramycin? (yes or no)**
    If no, question 11 was repeated for the AMG not questioned initially.

Supplemental material for Roy C, Gray C, Ruda L, Bell A, Bolt J. High-dose, extended-interval gentamicin and tobramycin for pediatric inpatients: a survey of Canadian hospital pharmacists. *Can J Hosp Pharm*. 2016;69(5):367-75.

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13. When monitoring for HDEI AMGs does your institution routinely monitor serum levels? (yes or no)

13(a) If no, please explain why serum levels are not monitored. (free text)

14. Please indicate all aspects of serum level monitoring your institution carries out for HDEI AMGs in pediatric inpatients (select all that apply):
- ☐ Troughs
- ☐ Peaks
- ☐ AUC
- ☐ Random samples
- ☐ Following Hartford nomogram
- ☐ Other, please specify (free text)

Troughs

14(a) Time of measurement
- ☐ 0–60 min prior to infusion
- ☐ 18 h post infusion

14(b) Indicate if you monitor this level after a certain number of days of therapy (enter day). (free text)

14(c) Target level (less than "x" mg/L) (free text)

14(d) Dose adjustments:
- ☐ Change interval using individual kinetics
- ☐ Change dose using individual kinetics
- ☐ Change interval using nomogram
- ☐ Change dose using nomogram
- ☐ Other, please specify (free text)

Peaks

14(e) Lower end of target level (enter in mg/L)

14(f) Upper end of target level (enter in mg/L)

14(g) Dose adjustments:
- ☐ Change interval using individual kinetics
- ☐ Change dose using individual kinetics
- ☐ Change interval using nomogram
- ☐ Change dose using nomogram
- ☐ Other, please specify (free text)

14(h) Indicate if you monitor this level after a certain number of days of therapy (enter day)

Area under the curve (AUC)

14(i) Time of measurement of first sample (enter number of hours post start of infusion)

14(j) Time of measurement of second sample (enter number of hours post start of infusion)

14(k) Lower end of target level (enter in mg*h/L)

14(l) Upper end of target level (enter in mg*h/L)

14(m) Dose adjustments:
- ☐ Change interval using individual kinetics
- ☐ Change dose using individual kinetics
- ☐ Change interval using nomogram
- ☐ Change dose using nomogram
- ☐ Other, please specify (free text)

14(n) Indicate if you monitor this level after a certain number of days of therapy (enter day)

Random Samples

14(o) Please specify timing of random samples in hours. (free text)

15. With what frequency does your institution monitor for nephrotoxicity in pediatric inpatients (excluding patients in the NICU)? (select all that apply)
- ☐ Renal panel daily (including serum creatinine and blood urea nitrogen)
- ☐ Renal panel twice weekly
- ☐ Renal panel with frequency individualized per patient
- ☐ Renal panel at other intervals: (please specify) (free text)
- ☐ Other, please specify (free text)

16. Does your institution routinely monitor for ototoxicity in pediatric inpatients (excluding patients in the NICU)? (yes or no)

16(a) If you monitor for ototoxicity do you use (select all that apply):
- ☐ Audiometry
- ☐ Symptom assessment (i.e., dizziness, ringing in the ears, difficulty hearing)

Frequency (respond to all that apply)

16(b) After a certain number of days of treatment (enter number of days)

16(c) Annually (yes or no)

16(d) If patient reports symptoms (yes or no)

16(e) Other, please specify (free text)

16(f) Indication (select all that apply):
- ☐ All patients
- ☐ Cystic fibrosis patients
- ☐ Patients with urinary tract infections
- ☐ Febrile neutropenia patients
- ☐ Other, please specify (free text)

The following questions are for all survey participants, whether or not HDEI AMGs are used.

17. Do the pharmacists at your institution have the authority to independently adjust dosing for pediatric inpatients on AMGs? (yes or no)

18. Do the pharmacists at your institution have the authority to independently order monitoring parameters for pediatric inpatients on AMGs? (yes or no)

18(a) If yes, what parameters are monitored? (select all that apply):
- ☐ Serum drug levels
- ☐ Serum creatinine
- ☐ Blood urea nitrogen
- ☐ Body weight
- ☐ Complete blood count with differential
- ☐ Urine output measurement
- ☐ Other, please specify (free text)

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