Poison Control Centers and Medications at School

Jennifer Lowry, MD
Medical Director
Mid-America Poison Control Center
University of Kansas Medical Center
Case Presentation

• MAPCC called by school nurse regarding student who ingested blue capsule that contained “cocaine”
• Student had elevated HR and BP which was consistent with cocaine
• Specialist told nurse that student needed to go to ER
Case presentation continued

• Nurse said the EMS would not be called and hoped parents would take him

• Stressed to nurse that absorption may be erratic and student needed to be evaluated.

• Nurse did not appear to appreciate advise and left it up to the parents
Case presentation continued

- Several attempts by MAPCC to follow up with nurse on same day without success.
- Second day nurse called parents who said that student was doing fine.
- Drug eval showed capsule to be “Strattera”, not cocaine.
Scope of the Problem

- Children with complicated mental and physical health problems often mainstreamed into school setting.
  - Asthma
  - Diabetes
  - Cystic fibrosis
  - Cancer
  - ADHD
Scope of the Problem

- These children often require medication dispensed at schools
  - Approximately 5% of children receive medications in school on a typical day
  - Approx. half are for chronic health conditions
  - One survey documented 58 different medications dispensed
    - Nonprescription analgesics
    - Antibiotics
    - ADHD meds
    - Asthma meds
Scope of the Problem

• In past 20 years, number of children dx with emotional and behavioral problems has increased resulting in increased Rx psychiatric drugs
• Prevalence of antidepressant use in children increased from 1.6% in 1998 to 2.4% in 2002 (Delate et al. 2004)
Medications Administered

- High school students took fewer prescription and ADHD medications
- HS students took more nonprescription meds than other students
- Total of 163 different Rx meds and 28 OTC meds were administered in a typical school day

Medical Administration

• In the past, school administrators felt that supervising medications was “unimportant” for the school nurse

• Review of literature
  - Med management guidelines are lacking
  - Record keeping and storage practices are often inadequate
  - Medication administration is often delegated to nonlicensed personnel, including secretaries, administrators, teachers and the children themselves.

Reutzel TJ and Patel R. Journal of School Nursing 2001; 17: 131-8
ADHD

- Often prescribed methylphenidate or dextroamphetamine
- In one study looking at adolescent abuse, $\frac{3}{4}$ of abused meds came from adolescent’s own medications or the prescription of friend or sibling.
- Conclusion was that greater control is needed for dispensing these drugs

National Survey

• Nurses reported that 98% had written guidelines for med administration
• Average of 5.6% of students received meds daily
• Delegation to unlicensed professionals occurred >75% of time
• Almost half reported administration errors (“missed dose” most common)
• ? Person responsible for med administration

Reutzel et al. Journal of American Pharmacy Association 2001; 41: 67-77
Rules in Iowa

• Persons successfully completing a med admin course can administer meds
• Schools must establish a med admin policy including Rx and OTC meds
• Parent’s written request
• Meds in original container in secured area
• Emergency protocols
• Record of med admin on file
• Students may self administer if competent and have parent’s permission
Iowa Survey

• Principals (41%) and school nurses (34%) reported that they have ultimate legal responsibility for med admin.
• 97% had written guidelines
• Day to day responsibility fell to nurses but 24% fell to “other” (most often, secretaries)
• 90% said that they required training (1X, annually or every three years)

Farris et al. Journal of School Health 2003; 73: 331-7
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So, why does the Poison Control Center care?

- Calls from schools to PCC
- Drug diversion
- Health and safety of all kids in school
2006 Calls to MAPCC

• Total calls (Top 10)
  - Arts/crafts
  - Chemicals
  - Cosmetics
  - Cleaning Substances
  - Analgesics
  - Foreign Body
  - Food poisoning
  - Electrolytes/minerals
  - Cold and cough preps
  - Topical preparations

• Medication calls (Top 10)
  - Analgesics
  - Electrolytes/minerals
  - Cold and cough preps
  - Topical preparations
  - Stimulants
  - Anticonvulsants
  - Sedative/Hypnotics
  - Gastrointestinal meds
  - Eye/ear/nose preps
  - Dietary supplements
2006 Med Calls to Midwest PCCs (Top 10)

- Analgesics
- Stimulants
- Cold and cough preparations
- Topical preparations
- Antidepressants
- Sedative/Hypnotics
- Gastrointestinal medications
- Electrolyte/Mineral medications
- Vitamins
- Eye/Ear/Nose medications
Calls to Poison Control Centers

- Medication errors
- Student took OD at home before coming to school
- Student took OD at school
- Drugs of abuse at school
Exposures at Schools

- Males accounted for 58% of school exposures and 49% of nonschool exposures.
- The exposure was unintentional in 74% of school and 67% of nonschool exposures.
- Ingestion was the most frequently reported exposure route for school (64%) and nonschool (76%) exposures.
- Among those cases with known medical outcome, the most frequently reported medical outcome involved minor effects for both school exposures (58%) and nonschool exposures (46%).
- Nonpharmaceuticals were involved in 75% of school exposures and 48% of nonschool exposures.
- The most frequently reported substances involved in school exposures were arts, crafts, and office supplies (18%), while the most frequently reported substances involved in nonschool exposures were analgesics (17%).

Drug Diversion

- Misuse of Rx drugs has been growing problem in US affecting all age groups, including adolescents
- One study found that 11% of ADHD kids reported selling their medications
- 22% reported misuse of their medications
- Minority of patients admit to escalating dose and concomitant use with alcohol and drugs

Drug Diversion, cont’d

- Illicit use of stimulant medication was reported by 4.5% of study sample.
- 23.3% report being approached to sell, give, or trade their prescription drugs.
- High school students were at highest risk for abuse or being approached.

McCabe et al. Substance Use and Misuse 2004; 39: 1095-116
Monitoring the Future Survey

- An ongoing study of the behaviors, attitudes, and values of American secondary school students, college students, and young adults.
- Each year, a total of approximately 50,000 8th, 10th and 12th grade students are surveyed (12th graders since 1975, and 8th and 10th graders since 1991).
- Follow-up questionnaires are mailed to a sample of each graduating class for a number of years after their initial participation.
2006 MTF

• The use of prescription-type drugs like narcotics, tranquilizers, and sedatives remains at relatively high levels.

• Amphetamines constitute the only class of prescribed psychotherapeutic drugs used outside of medical regimen that have not been showing a recent increase in use.

• About one in every twenty-five 8th graders abused cough or cold medications fairly recently, as did about one in every fourteen 12th graders.
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Other Narcotics: Trends
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Tranquilizers: Trends
Amphetamines: Trends
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Amphetamines: Trends
Conclusion

• Poison Control Centers are available to help with exposures that present to the school nurse.
• Steps need to be taken to prevent diversion of Rx and OTC medications for abuse purposes.
• Increased education to schools (administration and students) is key to success.