



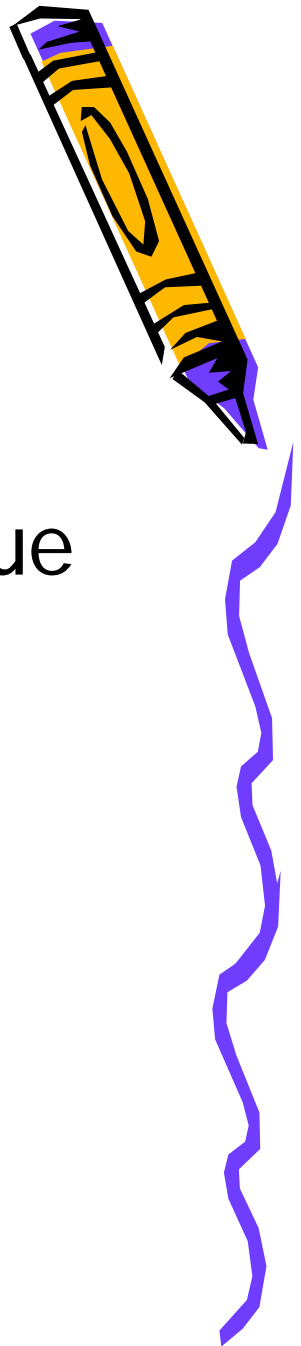
# Poison Control Centers and Medications at School

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# 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

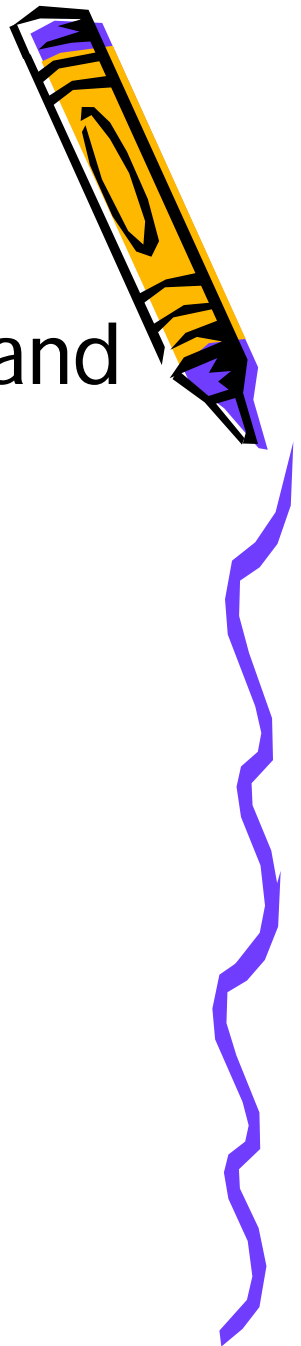


- Several attempts by MAPCC to follow up with nurse on same day without success.
- Second day nurse called parents who said that student was doing fine.
- Drug eval showed capsule to be "Strattera", not cocaine.



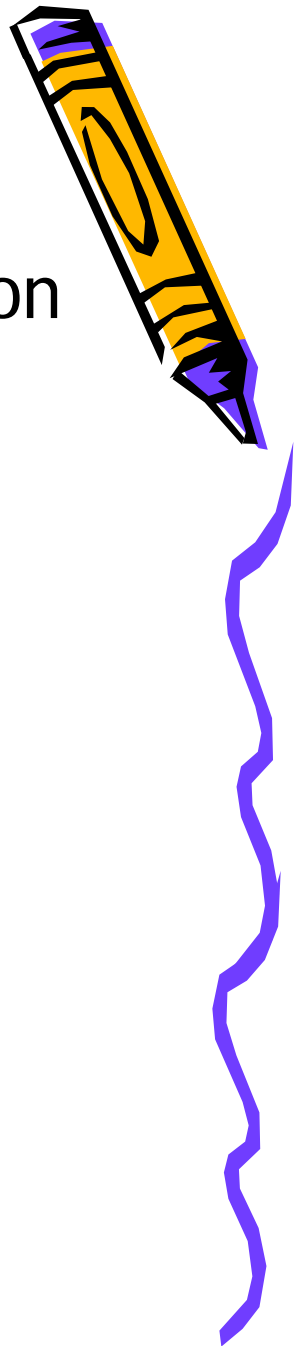
# Scope of the Problem

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



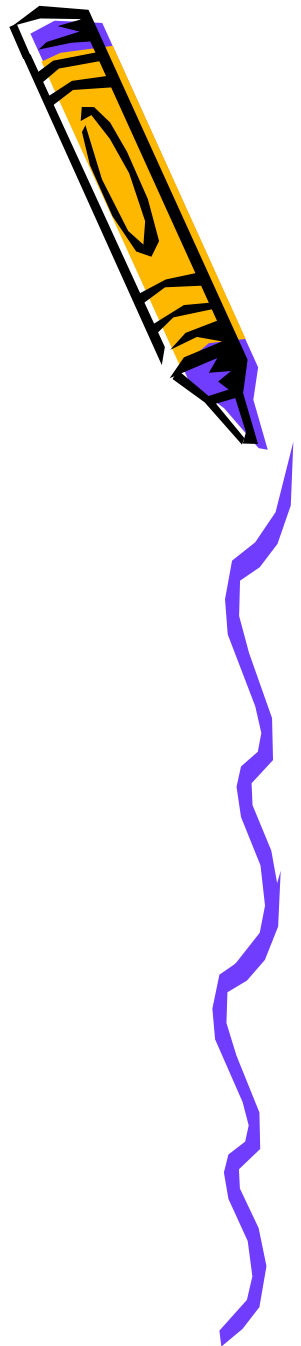
# Scope of the Problem

- 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

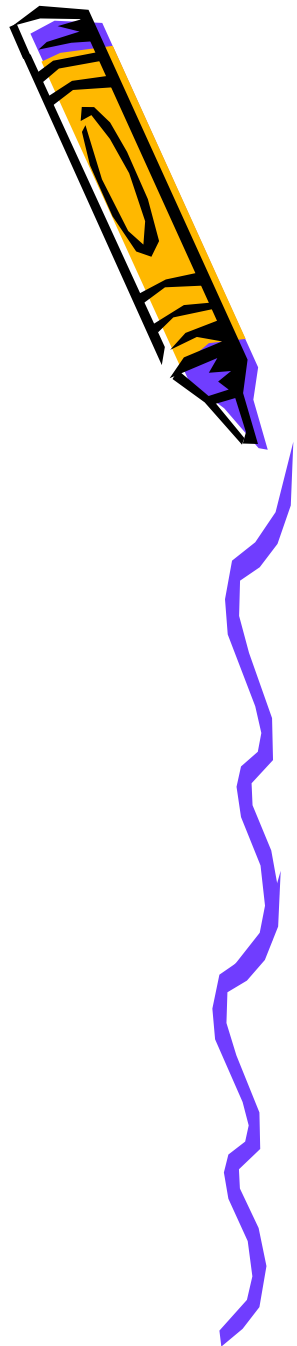
- High school students took fewer prescription and ADHD medications
- HS students took more nonprescription meds than other students
- Total of 163 different Rx meds and 28 OTC meds were administered in a typical school day





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SEE ARTICLE

McCarthy et al. The Journal of School  
Nursing 2006; 22: 102-107



# 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

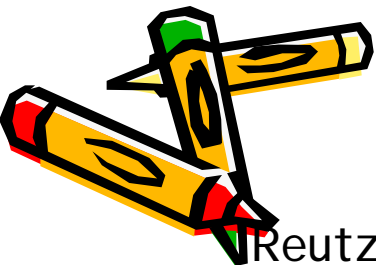
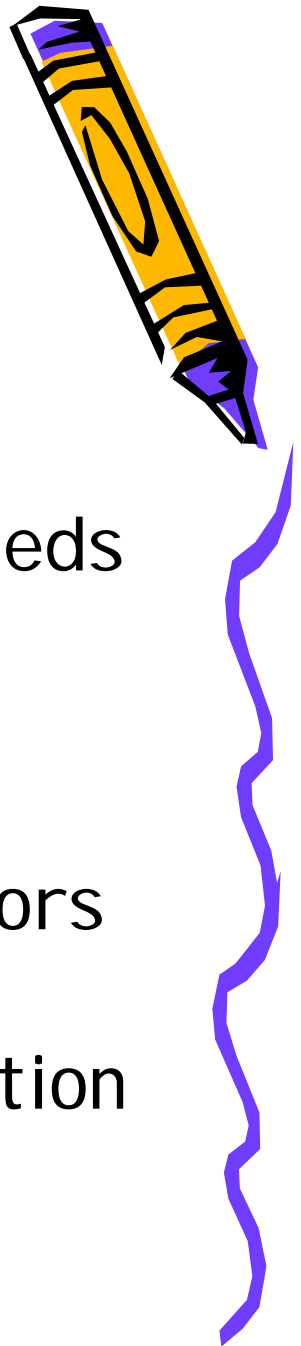


- Often prescribed methylphenidate or dextroamphetamine
- In one study looking at adolescent abuse,  $\frac{3}{4}$  of abused meds came from adolescent's own medications or the prescription of friend or sibling.
- Conclusion was that greater control is needed for dispensing these drugs



# 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

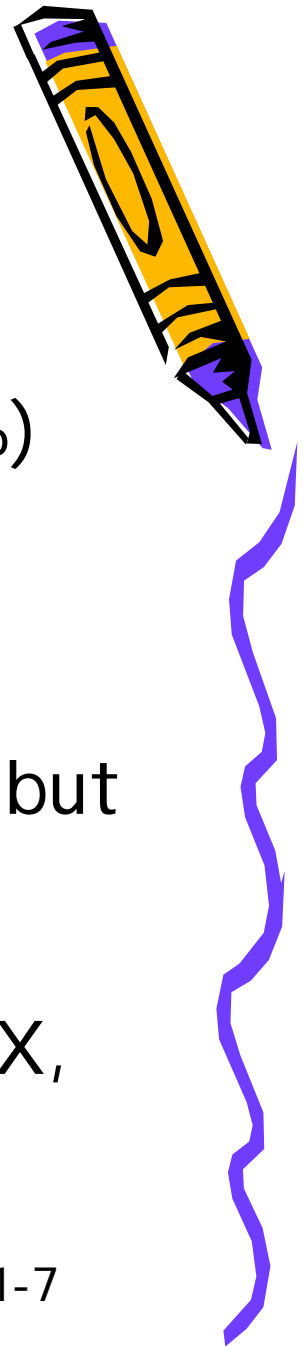


# Rules in Iowa

- 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



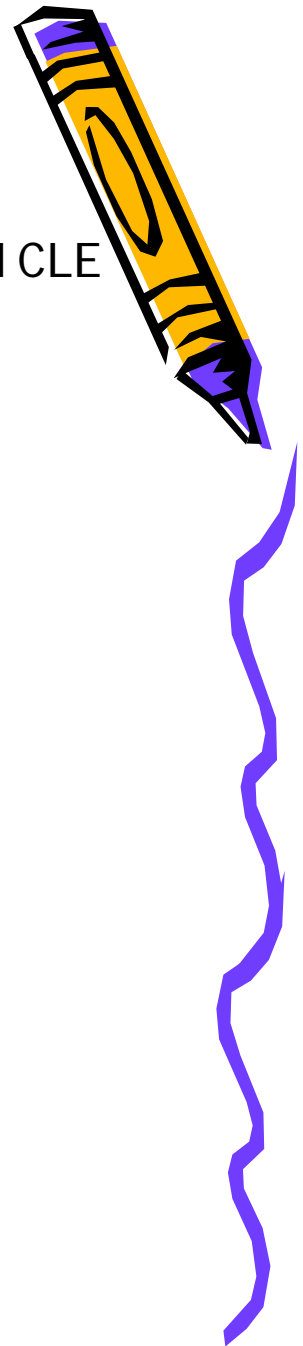
# Iowa Survey



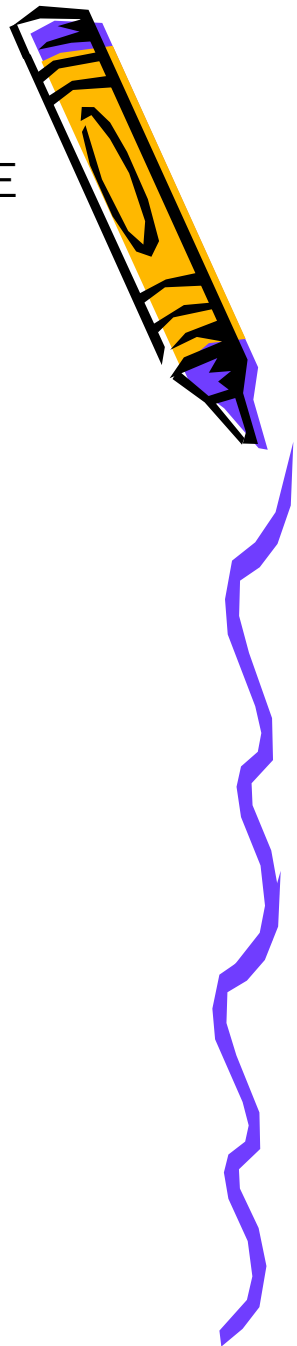
- Principals (41%) and school nurses (34%) reported that they have ultimate legal responsibility for med admin.
- 97% had written guidelines
- Day to day responsibility fell to nurses but 24% fell to "other" (most often, secretaries)
- 90% said that they required training (1X, annually or every three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



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Farris et al. Journal of School Health 2003; 73: 331-7

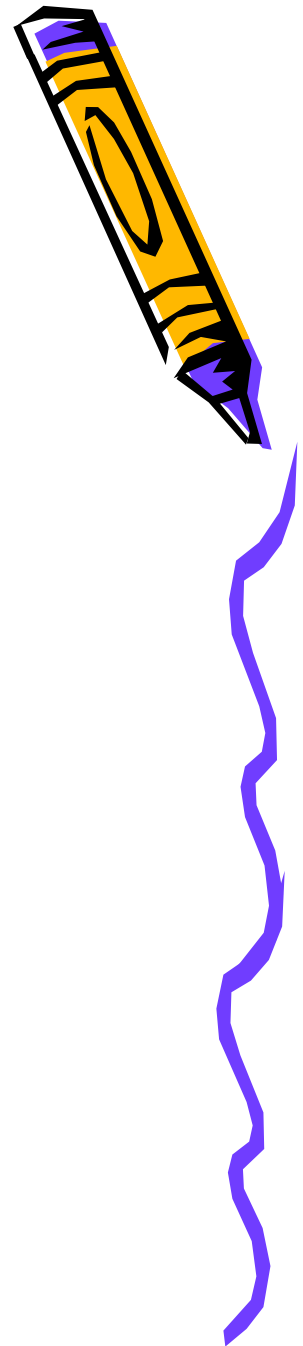


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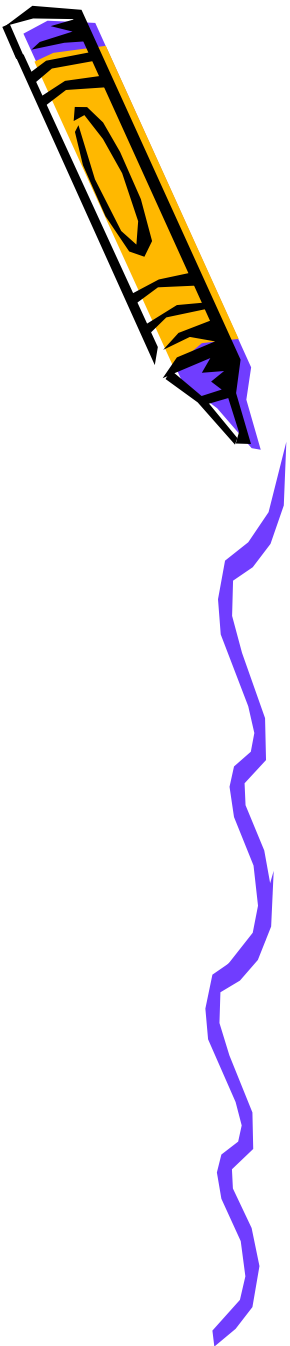




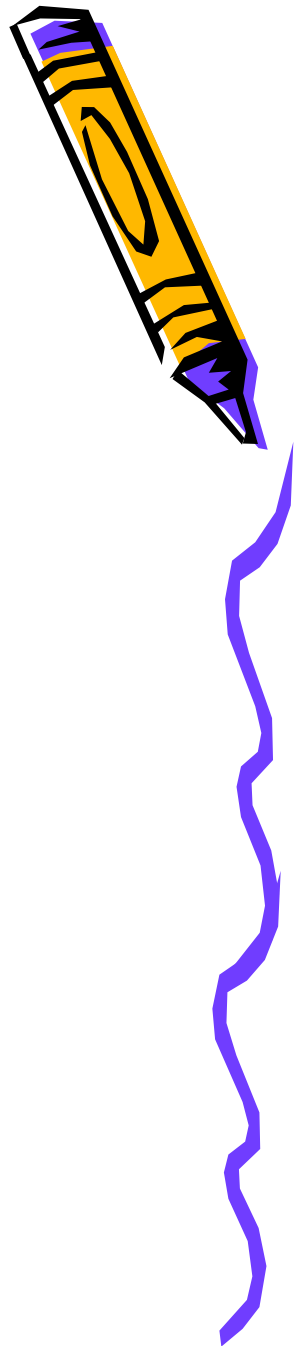
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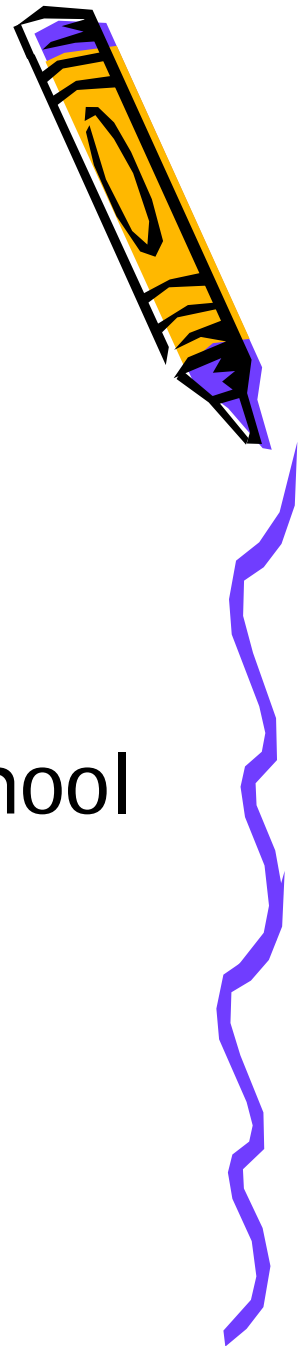
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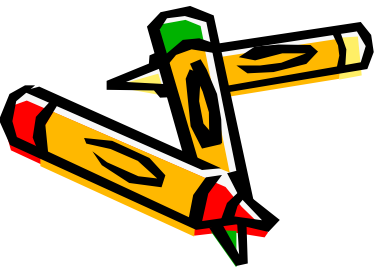
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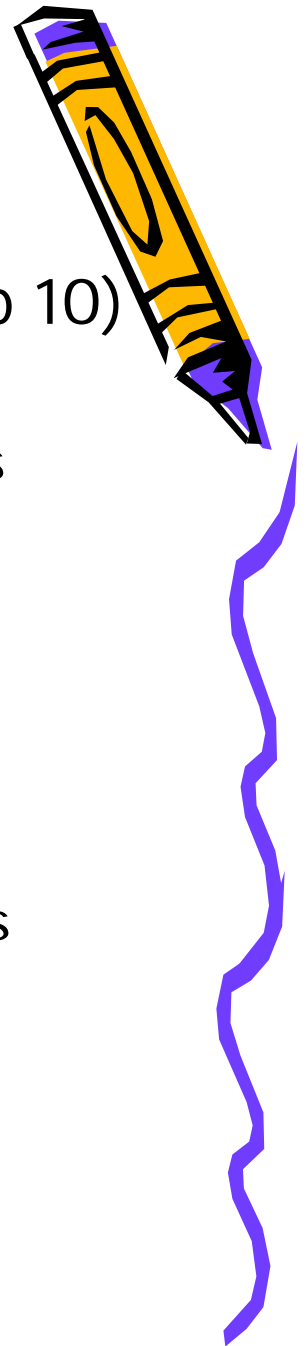
# So, why does the Poison Control Center care?



- 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

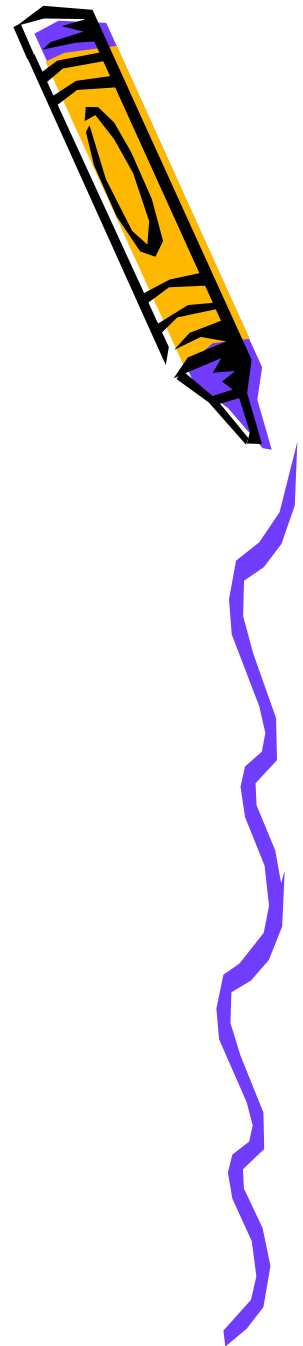
- Medication calls (Top 10)

- Analgesics
- Electrolytes/minerals
- Cold and cough preps
- Topical preparations
- Stimulants
- Anticonvulsants
- Sedative/Hypnotics
- Gastrointestinal meds
- Eye/ear/nose preps
- Dietary supplements

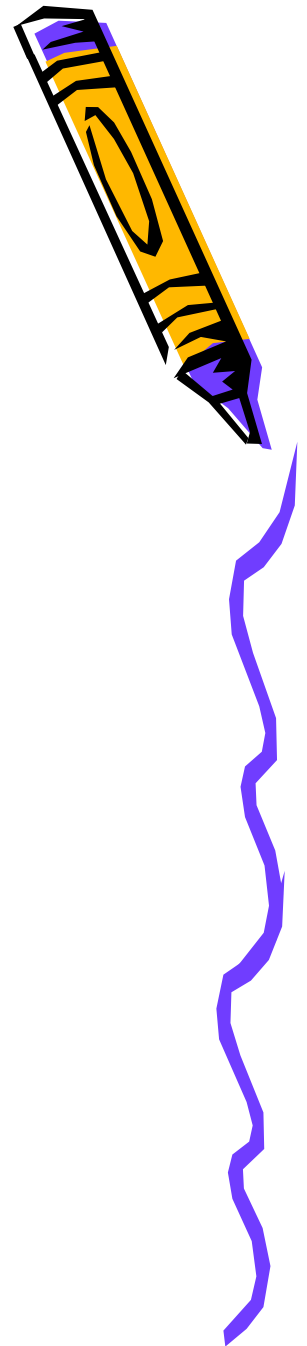


# 2006 Med Calls to Midwest PCCs (Top 10)

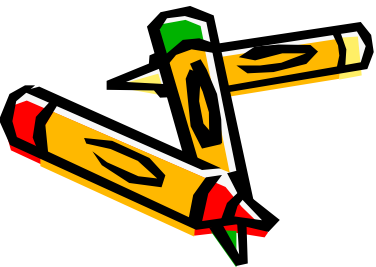
- Analgesics
- Stimulants
- Cold and cough preparations
- Topical preparations
- Antidepressants
- Sedative/Hypnotics
- Gastrointestinal medications
- Electrolyte/Mineral medications
- Vitamins
- Eye/Ear/Nose medications



# 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%).



Forrester MB. J Toxicol Environ Health A. 2006 Feb;69(3-4):263-8.



# Drug Diversion

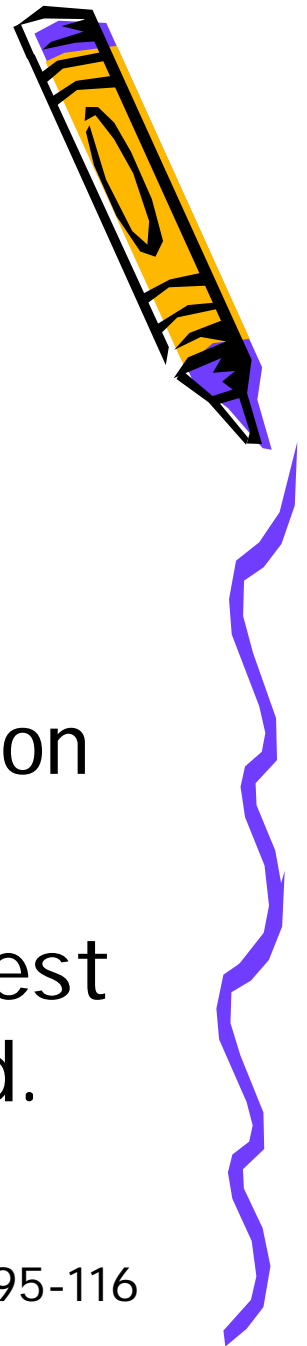


- Misuse of Rx drugs has been growing problem in US affecting all age groups, including adolescents
- One study found that 11% of ADHD kids reported selling their medications
- 22% reported misuse of their medications
- Minority of patients admit to escalating dose and concomitant use with alcohol and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



Wilens et al. J Am Acad Child Adolesc Psychiatry 2006; 45: 408-14

# 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.



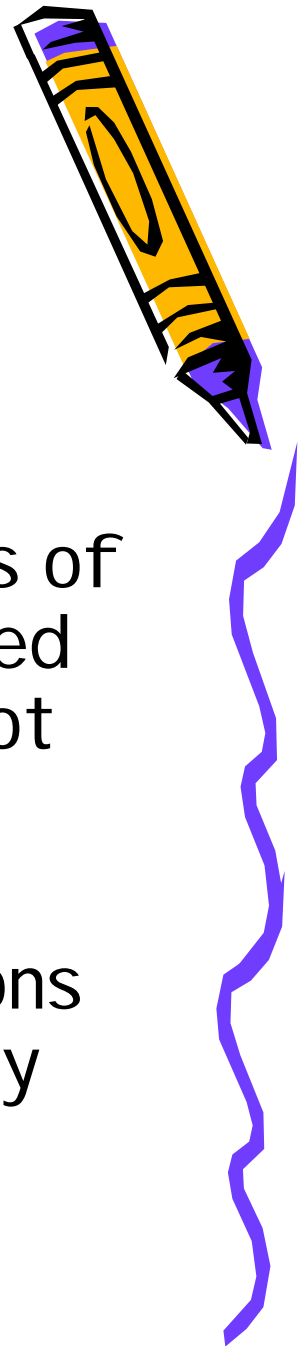
# Monitoring the Future Survey



- 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

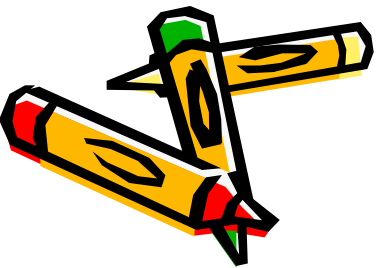
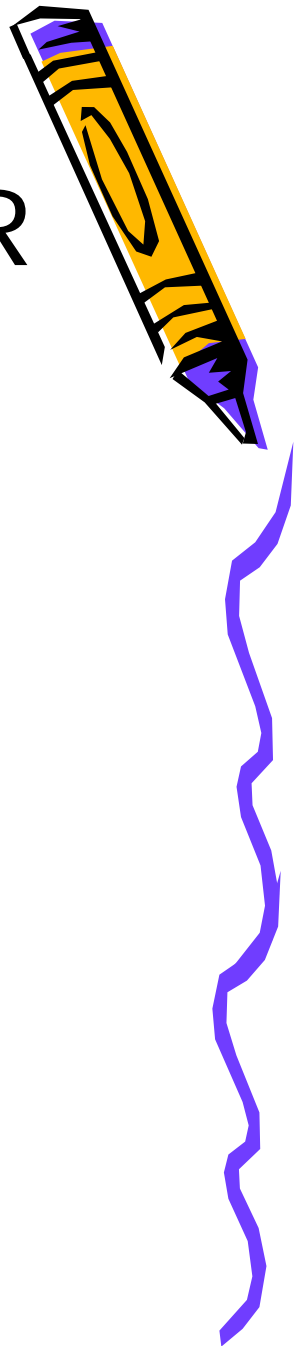


- The use of prescription-type drugs like narcotics, tranquilizers, and sedatives remains at relatively high levels.
- Amphetamines constitute the only class of prescribed psychotherapeutic drugs used outside of medical regimen that have not been showing a recent increase in use.
- About one in every twenty-five 8th graders abused cough or cold medications fairly recently, as did about one in every fourteen 12th graders.

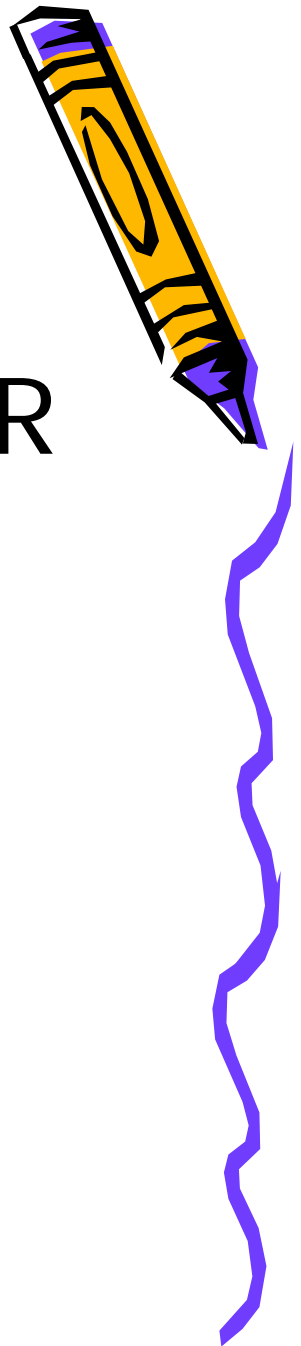


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Other Narcotics: Trends

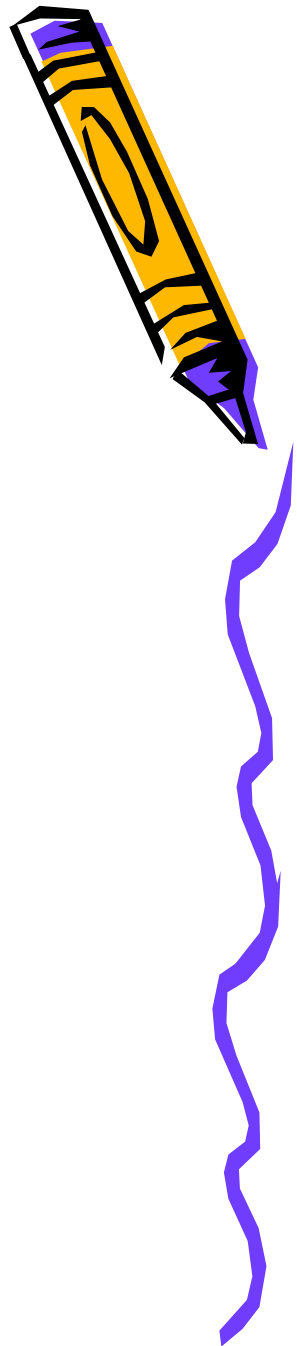


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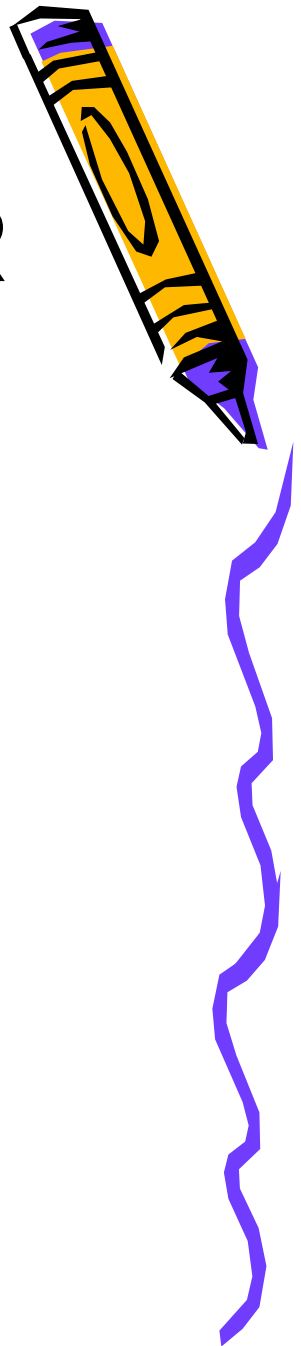


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Tranquilizers: Trends



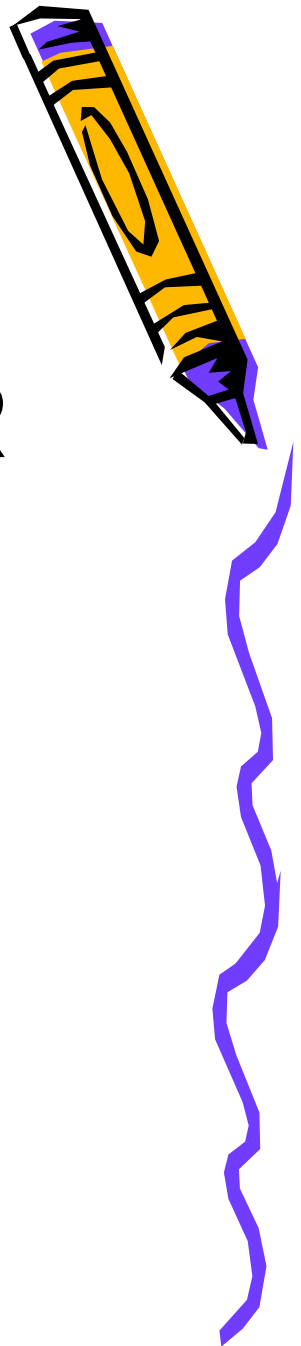
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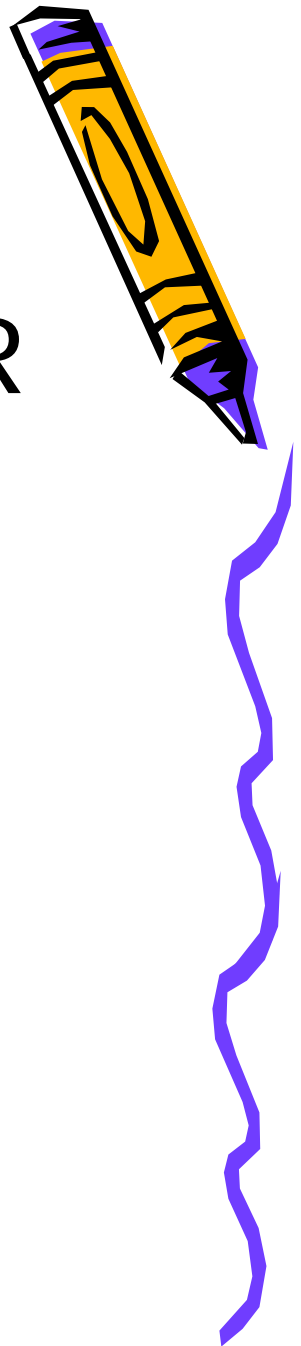
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**Amphetamines: Trends**



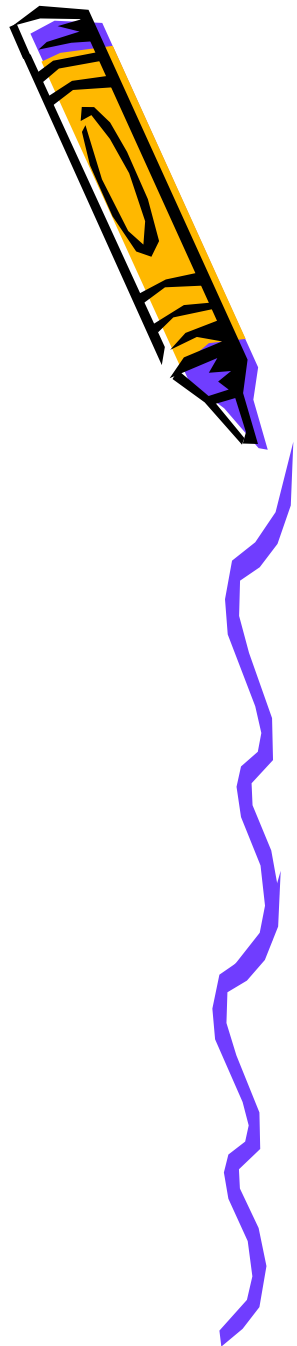
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**Amphetamines: Trends**



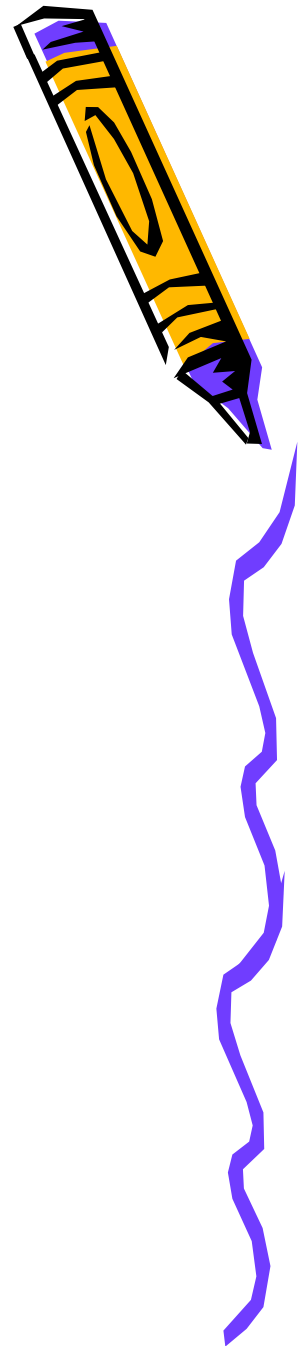
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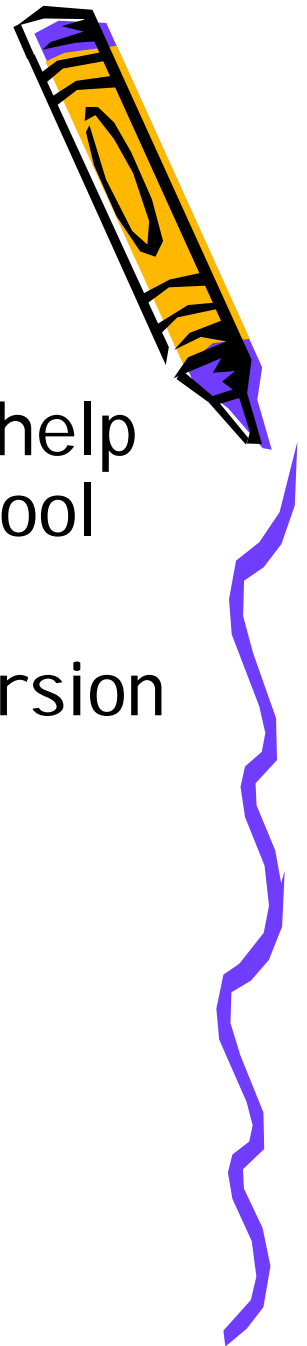


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**Amphetamines: Trends**



# 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



**POISON**

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