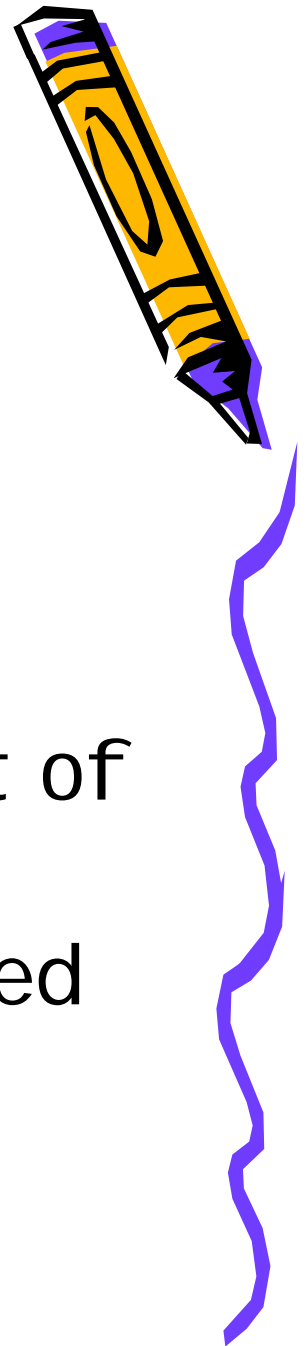


Pediatric Adherence for the School Nurse



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- Thanks also to the ongoing support of KU Center for TeleMedicine, the TeleKidcare program, and Connected Kansas Kids.





Compliance

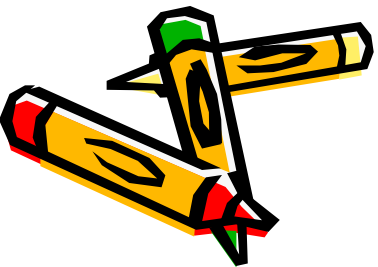
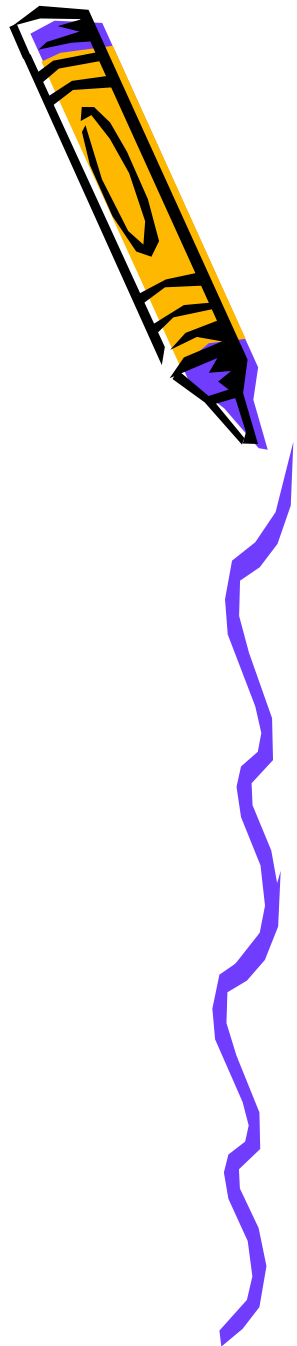
Adherence Definition

- “The extent to which a person’s behavior (in terms of taking medications, following diets, or executing lifestyle changes) coincides with medical or health advice.”
(Haynes, 1979)



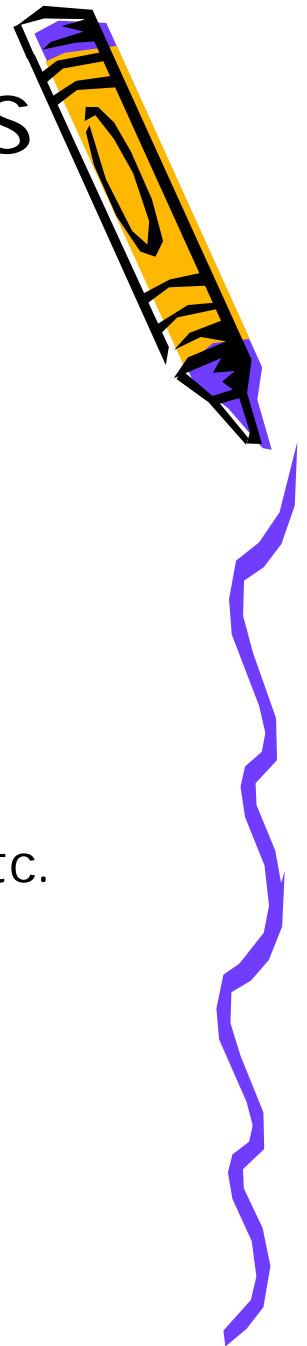
Types of Nonadherence

- Not knowing, health literacy
- Not following
- Choosing not to follow, "rational nonadherence"





Range of Recommendations



- Appointment keeping
 - Vaccinations as example
- Medications
 - How much? Timing, Continuation, Other recommendations—with food, etc.
- Psychotherapy recommendations
 - Psychotherapy homework
 - Daily note from school and home
 - Calendar monitoring—attendance, mood, dry/wet, etc.
- Lifestyle changes
 - Eating
 - Sleeping
 - Other





The Scope of Medication Nonadherence



Types of Medication Nonadherence



- Not filling prescription, Adderall example
- Not (or delays in) refilling prescription
- Omitting doses
- Drug holidays (no doses for several concurrent days)
- “Toothbrush Effect” or “White-coat” Adherence (increased adherence around visits)
- Overdosing or taking extra “make-up” doses



Medication Nonadherence Rates



- 1/3 of patients on short-term regimens
- 50-55% of patients on long-term regimens
- Adherence declines over course of illness



Nonadherence Rates by Disease (Drug) in Pediatrics

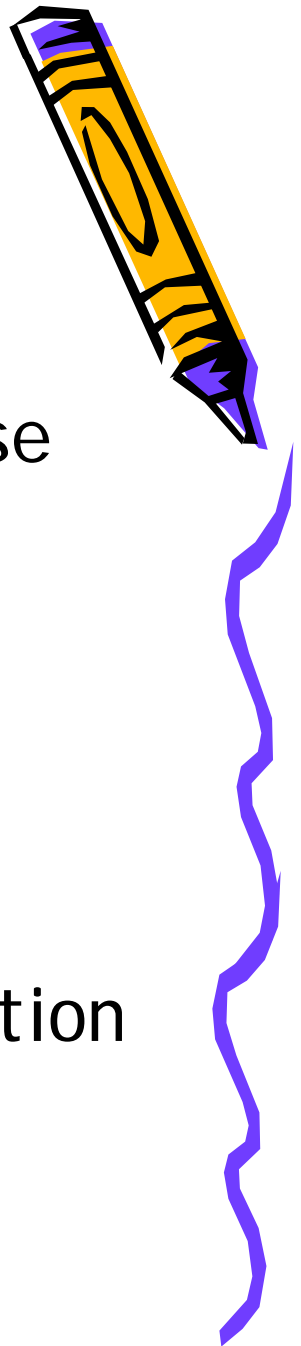


- Under and over use of medication
- Asthma (theophylline) = 34-88%
- Cancer (prednisone) = 19-42%
- JRA (salicylates) = 45%
- Epilepsy (anticonvulsants) = 21-56%



Other Areas

- Less data but adherence as bad or worse as medications
 - Insurance challenges
 - Long-term nature of recommendations
- Nonadherence to psychotherapy recommendation
- Nonadherence to lifestyle recommendation



Society-wide costs



- Cost of nonadherence in U.S. estimated at \$100 billion per year (Berg et al.; Annals of pharmacotherapy: 27: 2-21.)
- Costs associated with drug resistant infectious diseases in U.S. estimated at \$100-\$200 million per year (Gibbons; Science: 257: 1036-38)
- Increases economic burden on families and society in general



Local costs related to clinical care



- Providers unaware of nonadherence may order more invasive, risky, and costly procedures and may prescribe more potent meds with greater side-effects.
- Providers may fail to make appropriate changes in regimens (e.g., adjusting insulin doses for adolescents in response to pubertal growth spurts) if they over-attribute treatment failures to nonadherence.



Asthma-related Morbidity and Mortality

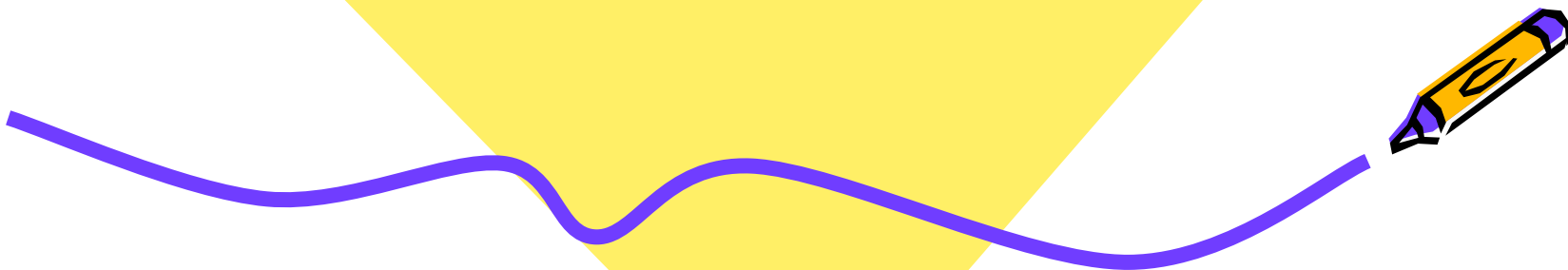


- More days with functional limitations and school absences.
- Increased ER visits and hospitalizations.
- Increase in asthma-related deaths (especially among African-American children with a rate 5x higher than Caucasian children).





Nonadherence Risk Factors





Overall adherence factors
**CANNOT REPRODUCE FOR
POSTED SLIDE, SEE ARTICLE**

Osterberg & Blaschke (2005), Adherence to Medication, NEJM, 353 (5), 487-498.



Patient Nonadherence Factors



- Adolescent
- Male
- Dissatisfaction with Medical Care
- Lack of Knowledge
- Poor Overall Adjustment & Coping
- Depression and risk taking RISK factors for generalized poor adherence



Family Nonadherence Factors

- Family Dysfunction
- Lack of Parental Knowledge
- Lower SES
- Lack of Parental Supervision



Disease Nonadherence Factors



- Patient Asymptomatic or in remission
- Increased number of symptoms
- Younger age at disease onset
- Disease not perceived as severe by family



Regimen Nonadherence Factors



- Complex, Demanding, and Costly regimens
- Delayed beneficial effects
- Limited Provider Supervision
- Negative regimen side effects



Adherence & Dose

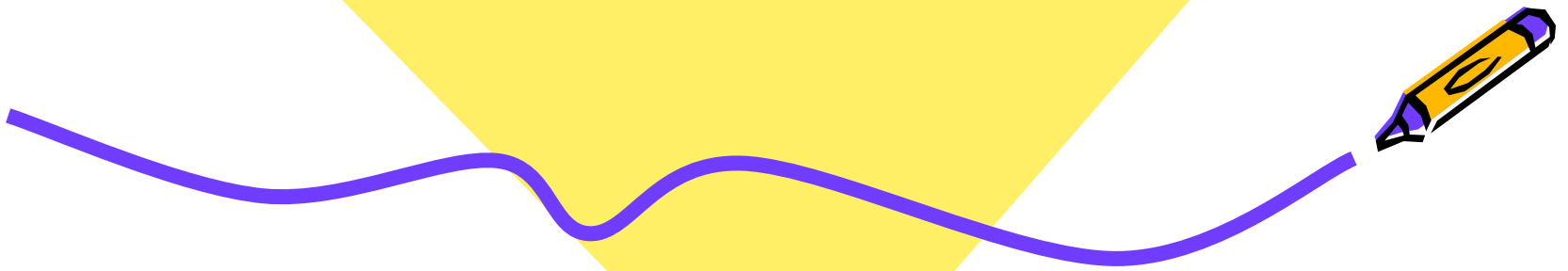
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from Osterberg & Blaschke (2005), Adherence to Medication,
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Measuring Nonadherence



Methods of Measuring Adherence.
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Osterberg & Blaschke (2005), Adherence to Medication, NEJM, 353 (5), 487-498.



Improving Self-Reported Adherence



- Directly evaluate adherence behaviors in an information-intensive approach (“Which medications are you taking? What dose? How often? Have you had any side-effects?”).
- Probe for nonadherence in a non-judgmental and non-threatening manner (“Many people have trouble remembering to take their medication. Do you ever forget to take yours? Do you ever stop taking your medication on purpose?”)



Improving Self-Reported Adherence



- PRAISE HONESTY
- Time frame for questioning about adherence should be limited to the previous 7 to 10 days.
- Ask families about barriers to adherence (personal, financial, social & cultural).

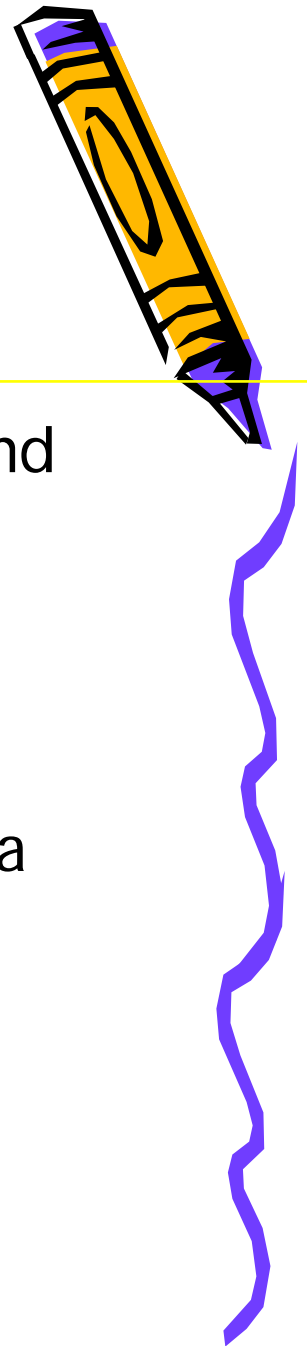




RX for Improving
Adherence



Adherence Enhancement Strategies



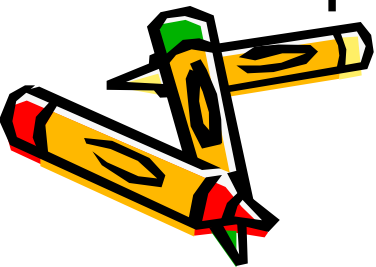
- **Educational** (about disease, treatments, and importance of adherence)
- **Behavioral** (cognitive and behavior change strategies to enhance adherence)
- **Organizational** (delivering health care in a way that facilitates adherence)



The What of Education (Content)



- The Disease (causes, course & prognosis)
- Treatments (what to do and why)
- Negative Side Effects (how to minimize)
- Adherence (importance and improvement strategies)



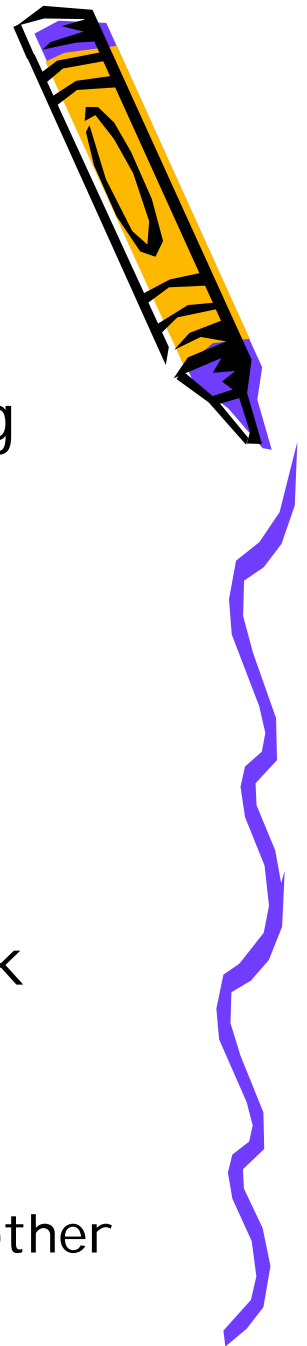
The How of Education (Strategies)



- As an ongoing process
 - Developmental stage
 - Each new school year
- Effective verbal communication (avoid jargon, stress instructions, repeat info., encourage questions)
- Translated material good start but not enough to address health literacy; also use of professional medical interpreting
- Written & other media
- Modeling and behavioral rehearsal



HOW CAN SCHOOL NURSE HELP?



- Liaison between school and healthcare, helping youth do work of childhood
- Repetition
- What family would like to or may need to ask provider?
 - Triage
 - Writing down questions
 - Basics—how do I use a thermometer? Etc.
- Assist family and colleagues to understand link between health and learning
- Link resources for information
 - www.connectedkansaskids.com

Resources about insurance, medication assistance, other



Behavioral Strategies

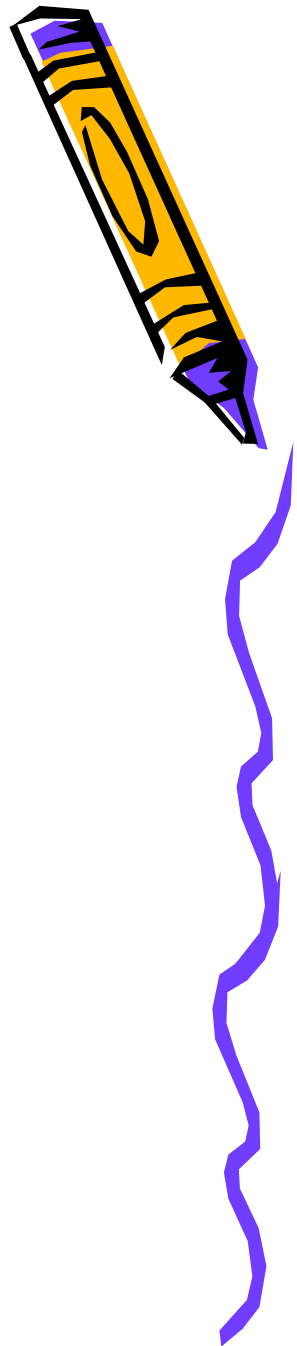


- Normalize need for continued monitoring with adolescence, especially with attention challenges
 - Parent
 - school
- Prompting adherence
- Adherence incentives
- Discipline strategies
- Self-management strategies (goal setting, self-monitoring, self-administered consequences, problem-solving, & cognitive reframing)



REHEARSAL

- Who, what, where, when, why
- Parent and child as partners in what really work within the day

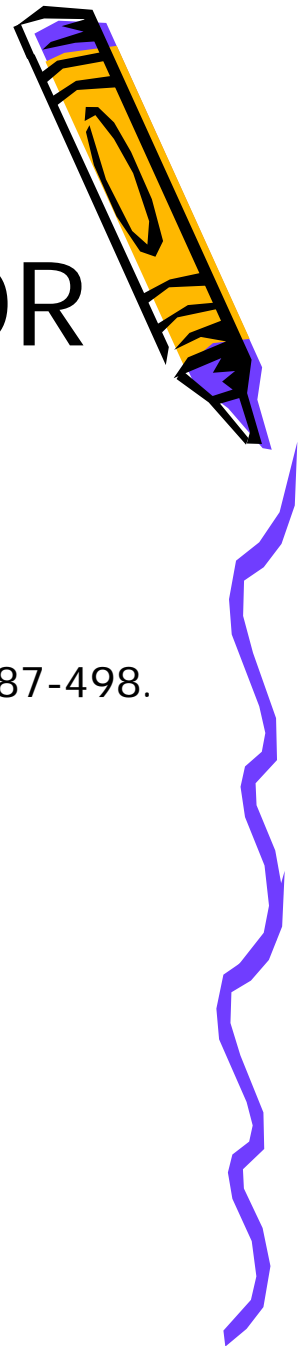


Organizational Strategies



- Central point of contact organizing different specialists
- Culture encourage asking questions
- Consumer-friendly clinical settings
- Simplify regimens
- Minimize negative side effects
- Technology/EMR





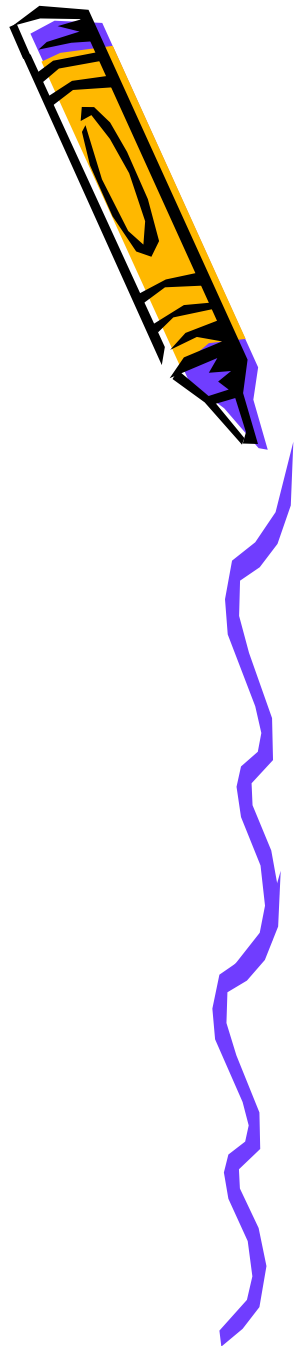
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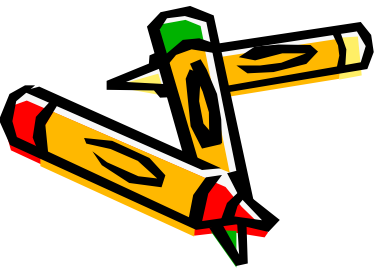
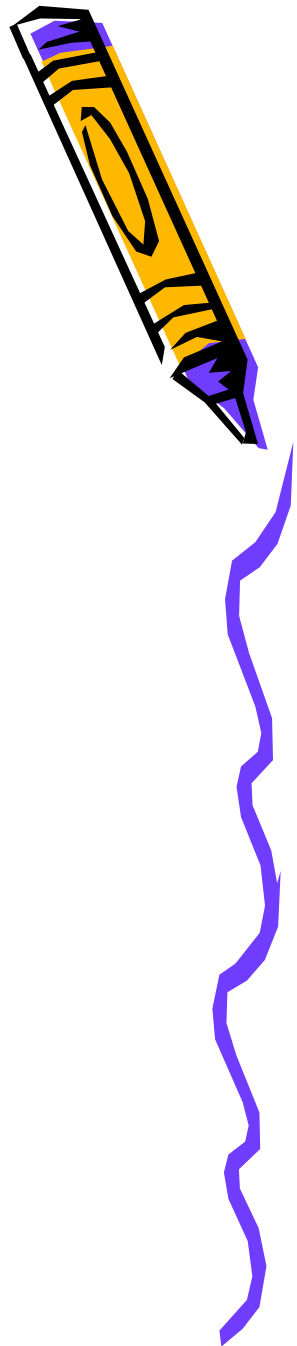
EXAMPLE 1: NOT KNOWING

- Renewal of medication



EXAMPLE 2: NOT FOLLOWING

- Pill swallowing example



EXAMPLE 3: RATIONAL NONADHERENCE

- Can't be sleepy before honors classes

