



# Managing Head Lice in Schools

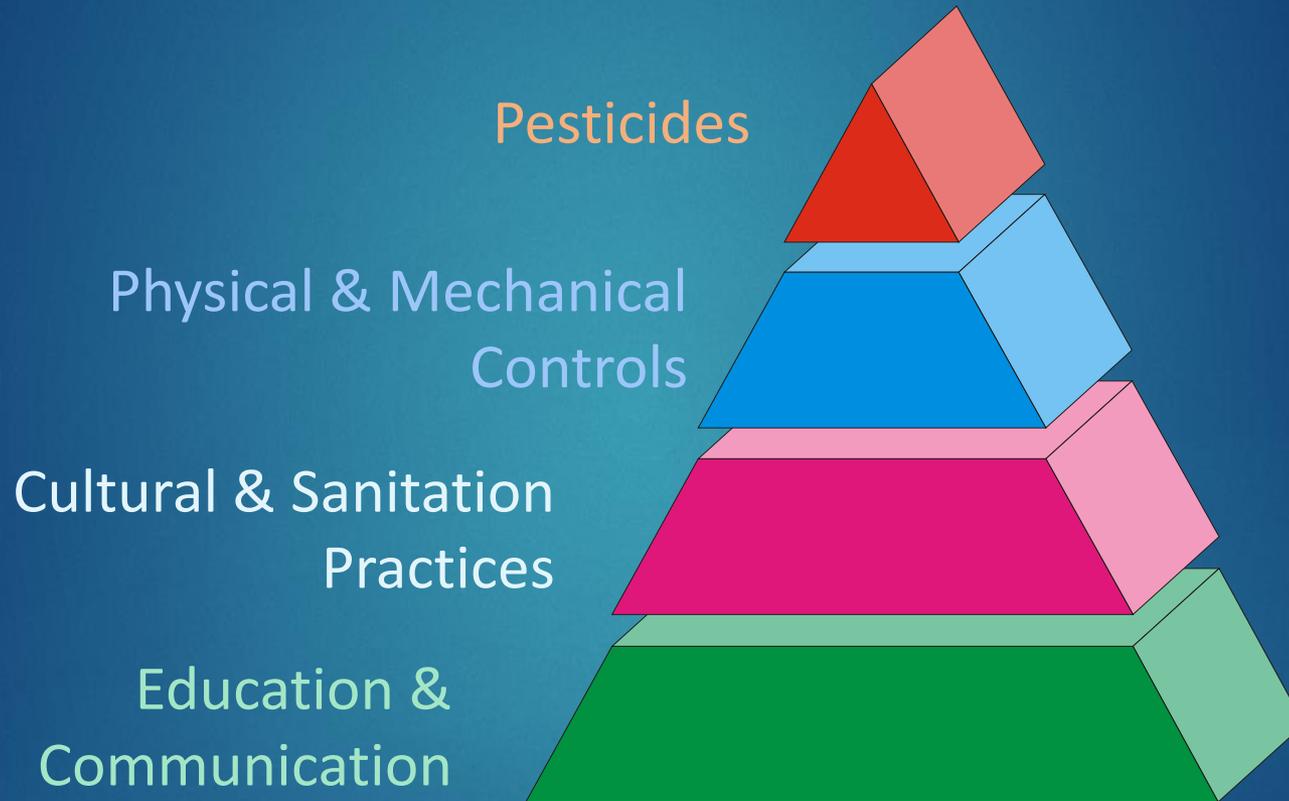


# School IPM Refresher



- ▶ Integrated Pest Management (IPM) is a smarter, usually less costly option for effective pest control in the school community.
- ▶ An IPM program employs common sense strategies to reduce sources of food, water and shelter for pests in your school buildings and grounds.
- ▶ IPM programs take advantage of all pest management strategies, including the judicious use of pesticides.

# IPM Basics



# Key Concepts

- ▶ Inspect and monitor for pests and pest conducive conditions
- ▶ Prevent and avoid pests through exclusion and sanitation
- ▶ Use treatments that minimize impacts on health and the environment
- ▶ Everyone has a role - custodians, teachers, students, principals, and pest management professionals



# Benefits of School IPM

- ▶ **Smart:** addresses the root cause of pest problems
- ▶ **Sensible:** provides a healthier learning environment
- ▶ **Sustainable:** better long-term control of pests



# Presenters



**Richard Pollack, Ph.D.**

- Senior Environmental Public Health Officer, Harvard University
- Public Health Entomologist, Harvard School of Public Health
- Chief Scientific Officer, IdentifyUS
- International expert, presenter and author on medically relevant pests



**Nichole Bobo, MSN, RN**

- Nursing Education Director, National Assoc. of School Nurses
- Oversight of NASN head lice programming
- Formerly on faculty of Univ. of Louisville (KY) and Regis Univ. (CO)
- 25 years of clinical nursing experience and adult nurse practitioner



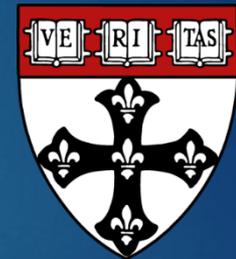
**Deborah Pontius, MSN, RN, NCSN**

- Health Services Coordinator/Chief School Nurse, Pershing Co. (NV) School District
- Clinician with daily care for students, and health services administrator developing policy and procedures
- Member, National Board of Certification for School Nurses
- Author of numerous *Pediculosis* articles

# Managing Head Lice in Schools

## Richard J. Pollack, PhD

- IdentifyUS LLC
- Harvard University &
- Harvard T.H. Chan School of Public Health



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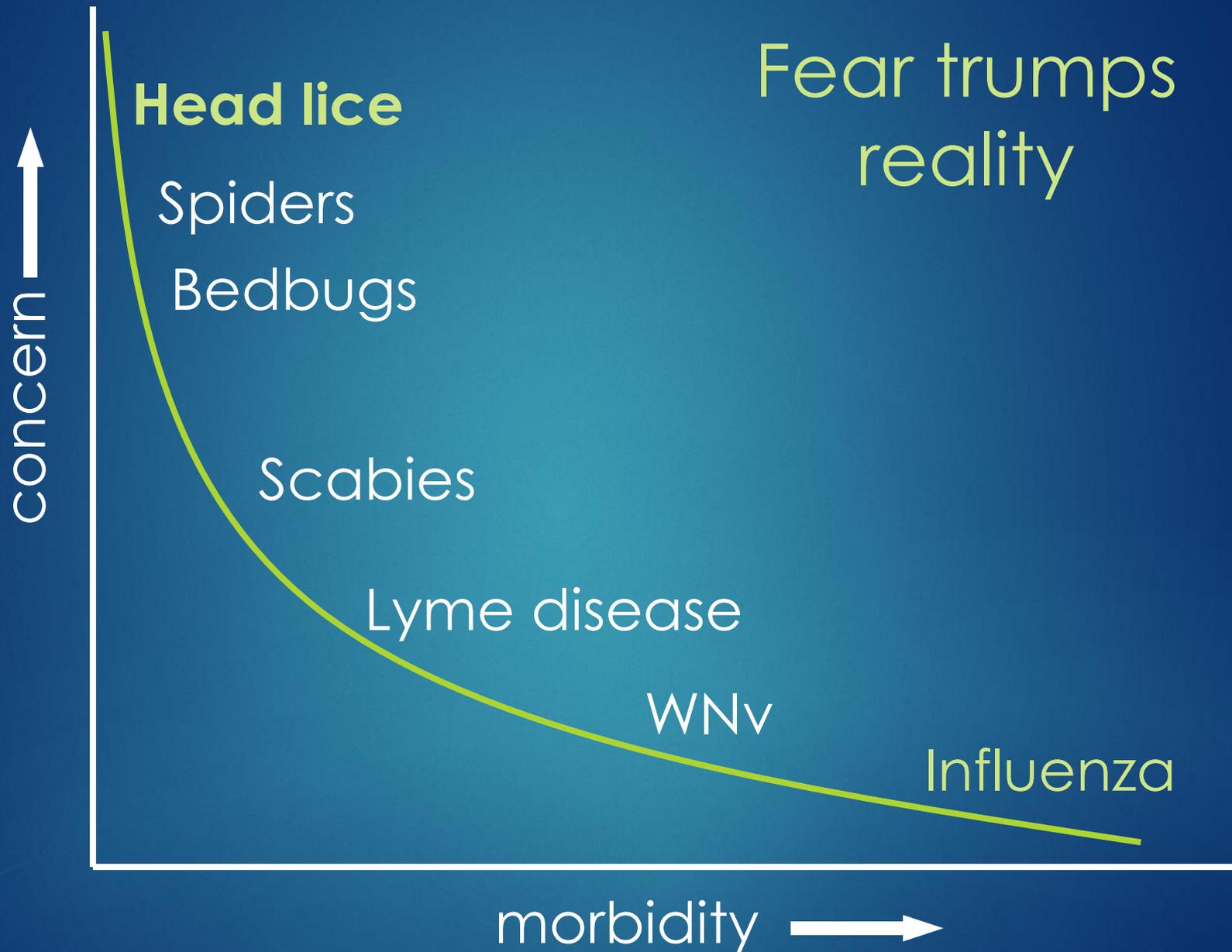
The presenter declares that he has no conflict of interest.

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# Managing Head Lice in Schools

- **Biology**
- **Epidemiology**
- **Dispel myths**
- **Medical & public health significance**
- **Management**

Audience: School administrators, medical personnel, teachers, parents



# Infested scalp hair



# Infested scalp hair

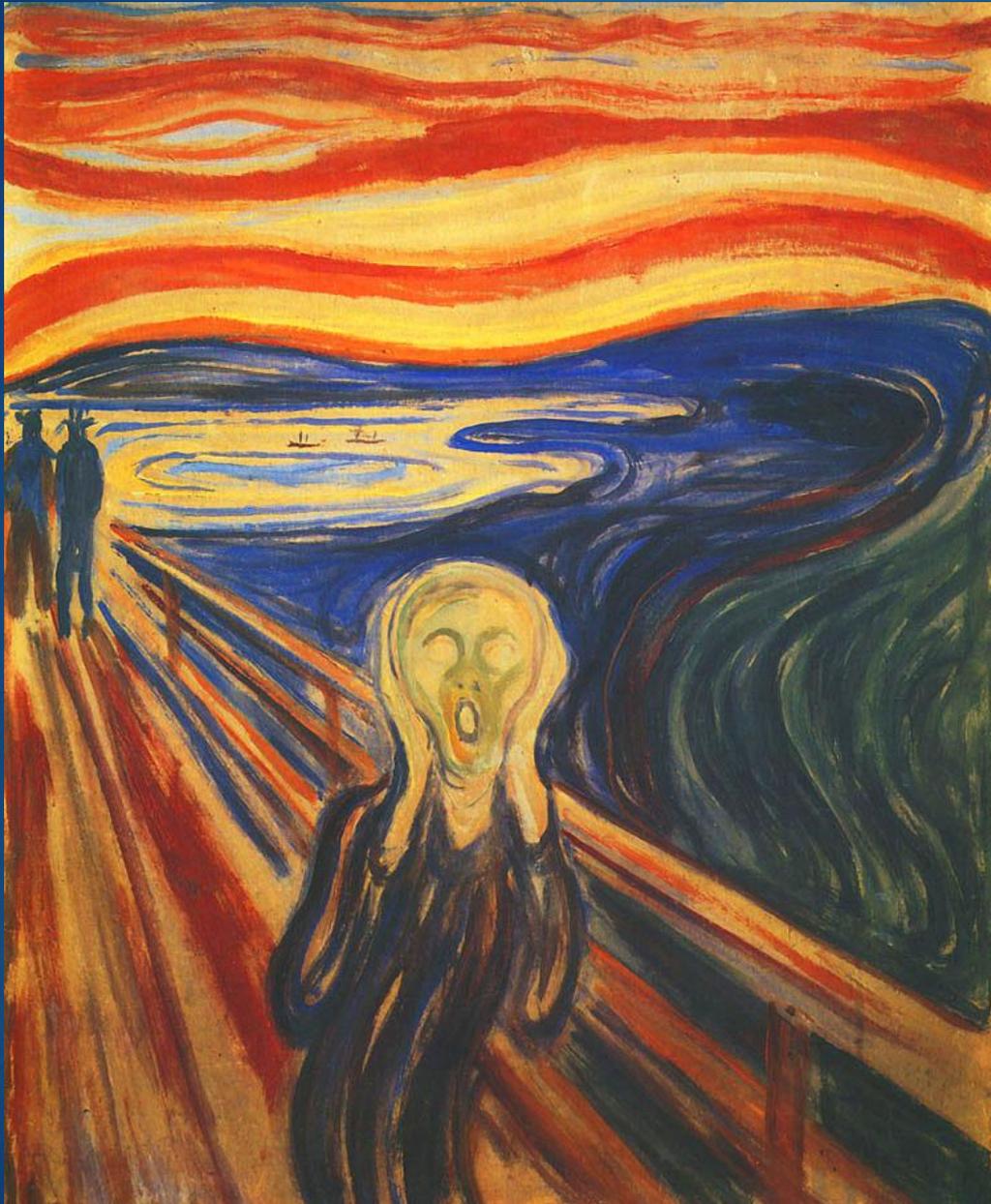


Misinformed  
and angry  
parents



Misinformed  
and angry  
personnel





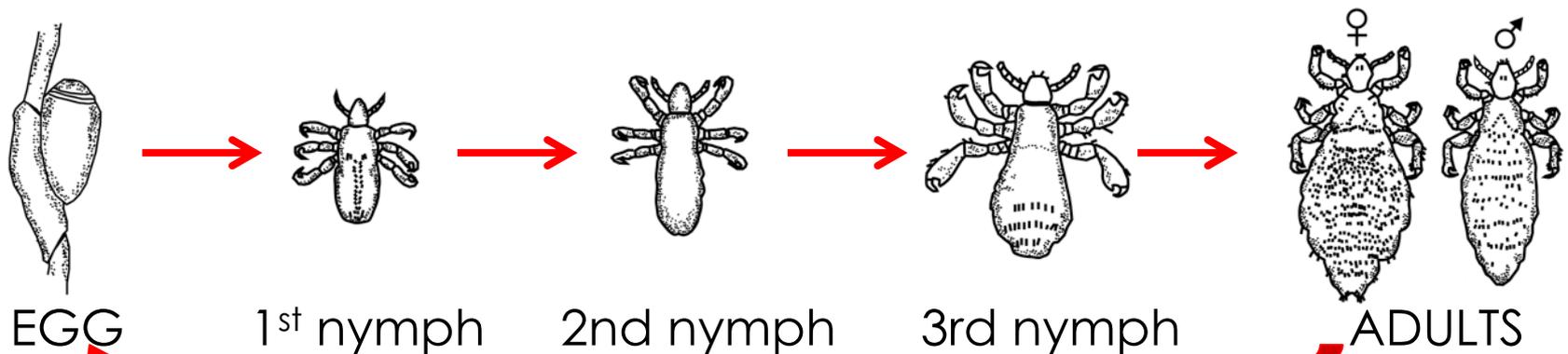
Distressed  
school  
officials !

# It is a myth that head lice:

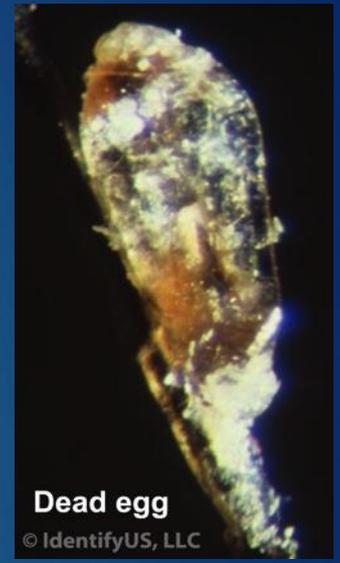
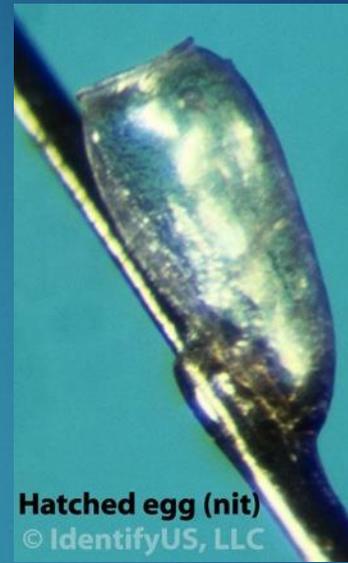
- are a sign that a person or home is unclean
- can jump, fly & survive long off a host
- infest buildings
- are readily shared on combs, brushes and hats
- burrow into skin or transmit infections
- are resistant to all treatments
- should prevent a child from attending school

# Head lice

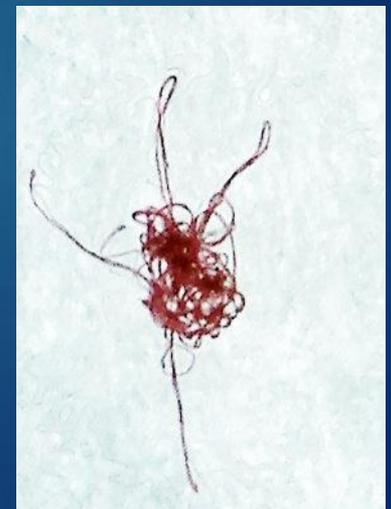
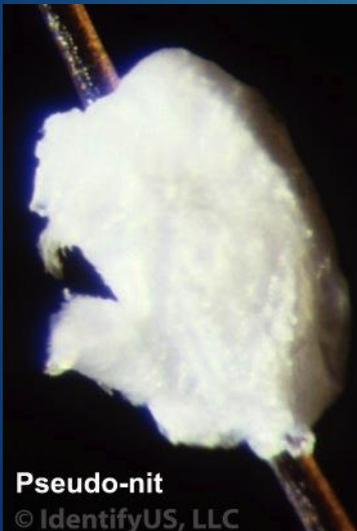
- are insects
- infest only people (usually children), not pets
- occur solely on the scalp hair
- feed only on blood
- do not burrow into skin



# Head louse eggs ('nits')



...and imposters



# Not all bugs on the scalp are head lice



Springtail  
non-biting, non-  
infesting

© M. Plonsky. All rights reserved  
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Head louse  
adult female



Booklouse  
non-biting, non-  
infesting

© Texas A&M University Department of  
Entomology  
Photo by M.E. Merchant

# Overdiagnosis is the rule, not the exception.

Pediatr Infect Dis J, 2000;19:689-93  
Copyright © 2000 by Lippincott Williams & Wilkins, Inc.

Vol. 19, No. 8  
Printed in U.S.A.

## Overdiagnosis and consequent mismanagement of head louse infestations in North America

RICHARD J. POLLACK, PHD, ANTHONY E. KISZEWSKI, DSC AND ANDREW SPIELMAN, SCD

**Background.** Lay personnel and many health care workers in the United States believe that head louse infestations caused by *Pediculus capitis* are exceedingly transmissible and that infested children readily infest others. Schoolchildren therefore frequently become ostracized and remain so until no signs of their presumed infestations are evident. Repeated applications of pediculicidal product and chronic school absenteeism frequently result.

gest that the practice of excluding presumably infested children from school may be more burdensome than the infestations themselves.

### INTRODUCTION

Human head lice (*Pediculus capitis*) infest people worldwide and are most prevalent in school age children.<sup>1</sup> Parents, school personnel and health providers in North America seem to regard such conditions as exceedingly transmissible, and infested children are

## A nonsensical claim:

*“6 - 12 million cases [of head lice] per year in the U.S.”*

Enrolled (2009 US Census Bureau)	No. (millions)
Nursery / Kindergarten	8.8
Grades 1-4	15.3
<b>Total</b>	<b>24.1</b>

A misguided extrapolation of marketing statistics

# Prevalence

- Average amongst 5-10yo kids ~1%
  - much lower in other age groups
- 'Outbreaks' are imagined
  - invariably result from misidentification!

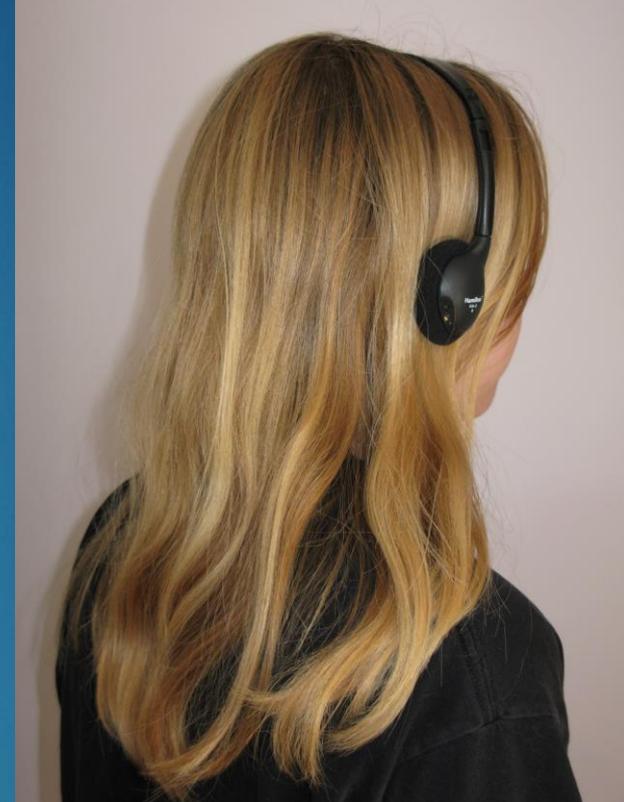
# Diagnostic Acumen?

Diagnostician	Correct assessment of infestation status (%)	
	Extinct & active	Active
Nurse / school nurse	70	32
Teacher / daycare	63	34
Relative	61	36
Barber / beautician	36	18
MD	21	9
Self	15	8



Pollack et al. Overdiagnosis and Consequent Mismanagement of Head Louse Infestations in North America. *Pediatr Infect Dis J.* 2000; 19:689-93

# How does a person acquire head lice?



Probably not from these or other fomites  
(inanimate objects)

# The overly-maligned comb

How could a louse – even if alive – grasp this situation?

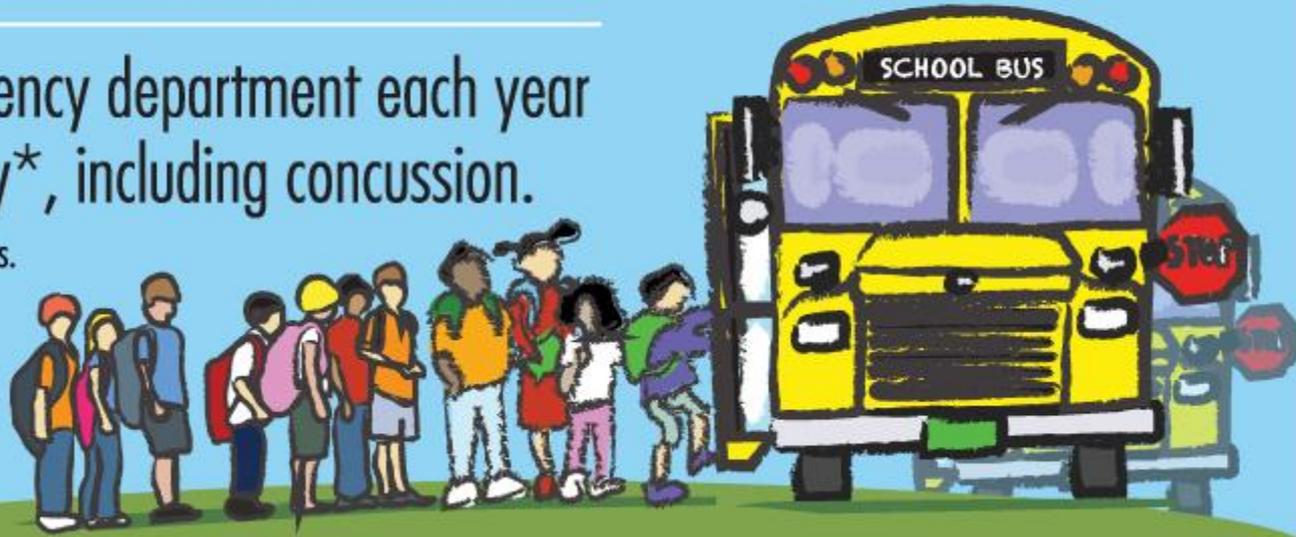


# ALMOST *half* A MILLION KIDS

are treated in an emergency department each year for traumatic brain injury\*, including concussion.

\* alone or along with other injuries or conditions.

**THAT'S MORE THAN 5,000**  
OF THE NATION'S LARGEST SCHOOL BUSES  
**FILLED TO CAPACITY.**



[http://www.cdc.gov/headsup/images/infographics/concussion\\_infographic\\_kids\\_tbi\\_er\\_bus.jpg](http://www.cdc.gov/headsup/images/infographics/concussion_infographic_kids_tbi_er_bus.jpg)

The lousiest helmet is one that is not used.

Do batting and bike helmets spread head lice? If they do, it would be incredibly rare. Certainly not a reason not to use them.



Most likely by direct head-to-head contact as children engage in otherwise wholesome activities.

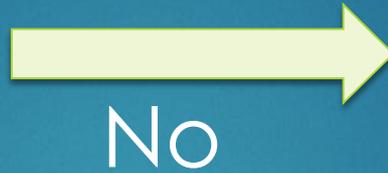
# Burden of head louse infestations

- Parasite load
  - Lice: generally <10
  - Eggs: few to hundreds (most hatched or dead)
- Most cases without symptoms
  - itching transient and usually mild
  - secondary infection (scratching)
  - systemic manifestations uncommon

- Financial costs
  - <\$10 to >\$1,000 (with lice)
  - often >\$1,000 when lice only imagined
- Loss of school time
  - 1 day to > 1 year

# Managing presumed head louse infestations

'Nits'  
discovered  
on hair?

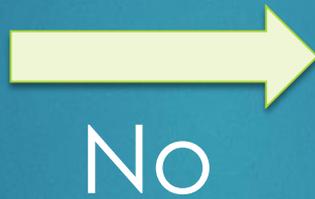


- Relax.
- Do NOT treat for lice.



- Inspect hair for live (crawling) lice.
- Compare samples to images at [identify.us.com](http://identify.us.com) or submit a sample or images for evaluation.

Live  
(crawling)  
lice on  
hair?



- Periodically reinspect hair for live lice.
- Do not treat.

# How can you get rid of head lice?

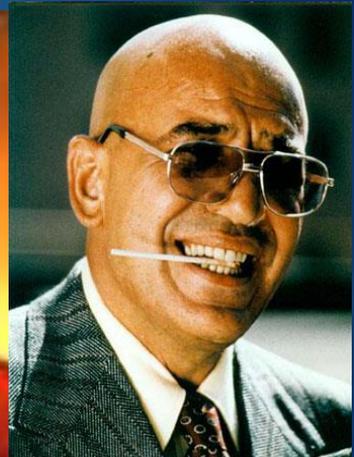
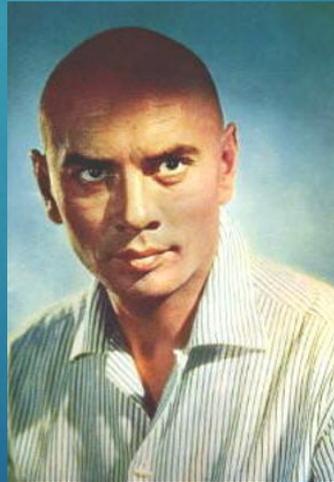


Anti-lice  
treatments

OTC & Rx



Mechanical  
removal



Habitat modification

Is the hair readily combed with a louse comb?



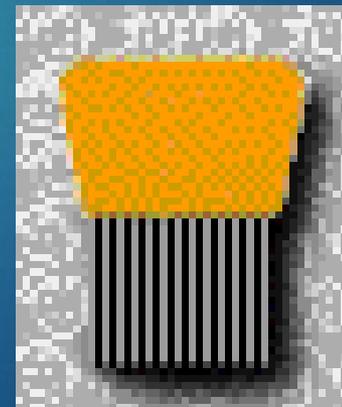
- Treat as per product instructions).
- Retreat as appropriate.
- Consider resistance.

<https://identify.us.com/idmybug/head-lice/head-lice-documents/lice-mgmt-chart-home.pdf>

<https://identify.us.com/idmybug/head-lice/head-lice-documents/lice-mgmt-chart-school.pdf>

- Comb thoroughly.
- Use conditioner.
- Repeat as needed.
- Consider treatment.

# Mechanical removal



# Over-the-counter (OTC) pediculicides

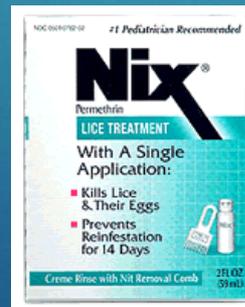
FDA-registered

Pyrethrins      Natural extracts, chrysanthemums

Pyrethroids      Synthetic analogues of pyrethrins

Dimethicone      Lubricant / conditioning agent

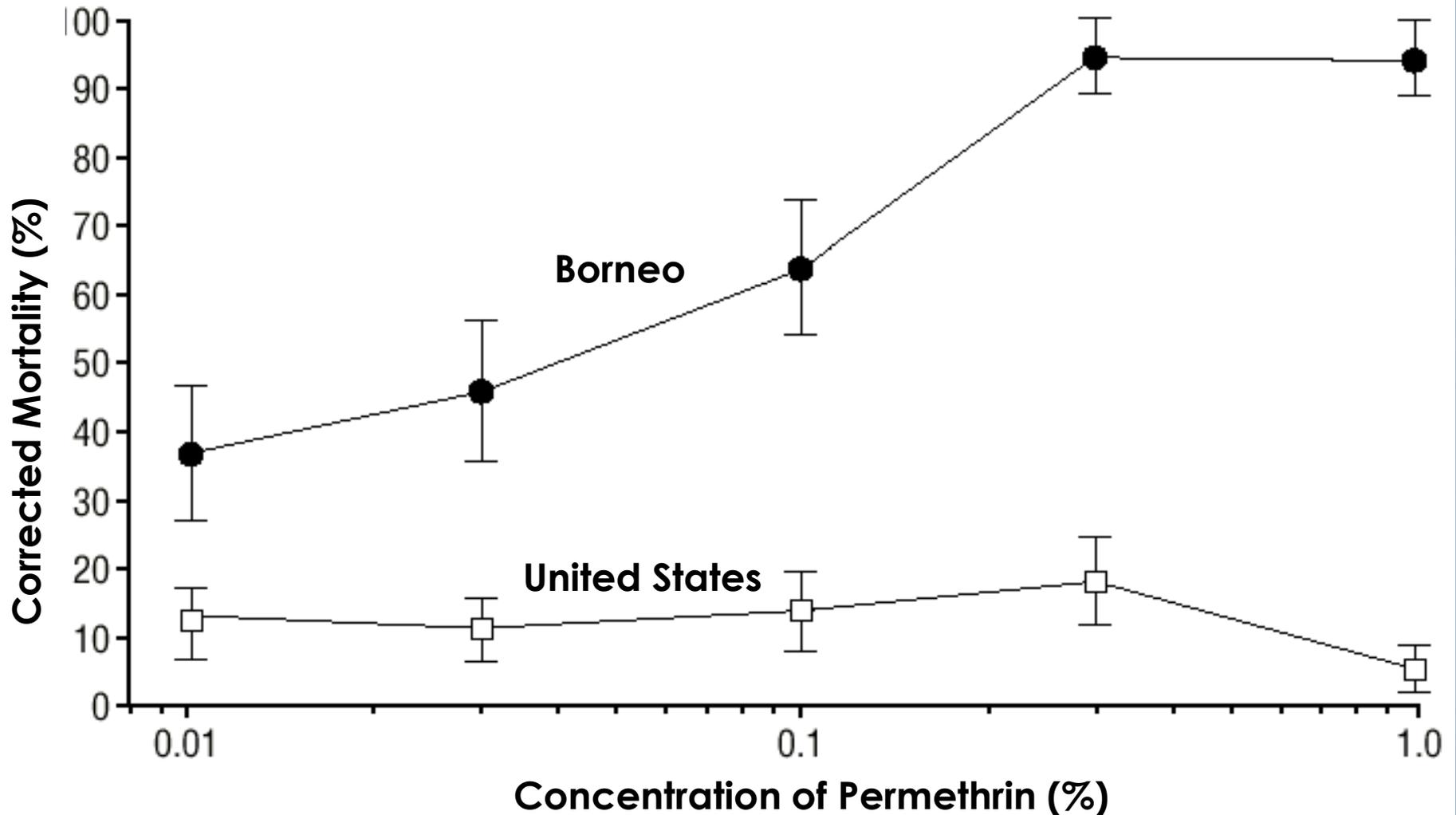
Inexpensive, easy to use, low risk, sometimes effective





# Differential Permethrin Susceptibility of Head Lice Sampled in the United States and Borneo

Pollack et al. 1999. Arch. Pediatr. Adolesc Med. 153:969-73



# Rx Pediculicides (FDA registered)

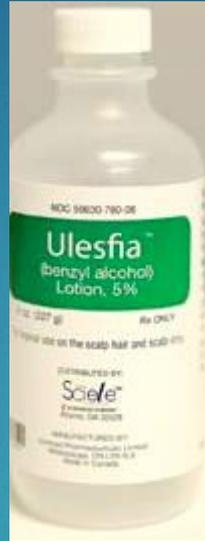


Lindane



Malathion

“Ovide”



Benzyl Alcohol

“Ulesfia”



Spinosad

“Natroba”



Ivermectin

“Sklice”

# Rx Pediculicides (FDA registered)

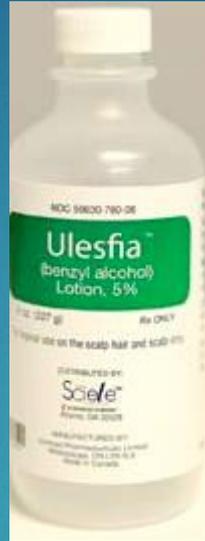


Lindane



Malathion

“Ovide”



Benzyl Alcohol

“Ulesfia”



Spinosad

“Natroba”



Ivermectin

“Sklice”

May potentially pose unacceptable risks, particularly if misused.

# Recovery looking up for burn victim

By Gavin Lesnick

Thursday, March 26, 2009

An 18-year old Evansville woman who sustained serious burns to more than half her body last month is showing marked improvement at the University of Louisville Hospital, her mother said this week.



Jessica Brooks was burned Feb. 22 after *dousing her hair with gasoline* in an attempt to get rid of lice. The pilot of a nearby water heater ignited the fumes, engulfing her in flames.

<http://www.courierpress.com/news/2009/mar/26/recoverylooking-upfor-burnvictim/>

Adding insult to injury: Did she have lice in the first place?

# Louse / nit removal services

## An unregulated industry

### Diagnose

Rarely hold medical credentials.

### Comb & snip hair

Rarely licensed as barbers / beauticians.

### Formulate, sell and apply anti-lice products

Rarely approved by FDA or EPA, nor are the salons licensed as pest control professionals.

## Recommended responses ✓

- Confirm specimen ID
- Notify parent / guardian at the end of the day
- Provide educational information on the biology & management of head lice

# Unjustified responses

- Excluding / quarantining student & possessions
- Violating confidentiality or notifying other students / parents
- Mass screening
- Applying pesticides to classrooms & buses
- Reporting cases to youth / social services
- Bagging clothing
- Restricting use of headphones / helmets



## No-nit policies to reduce incidence and/or prevalence

What's wrong with them?

- No objective basis for no-nit or no-lice policy
- No medical or public health justification
- Training, equipment, regulation issues
- Mistakenly assume transmission within school
- Wrongly assume 'nits' are viable and/or transmissible
- Burdensome to children, school personnel, parents

# Why many school systems have changed their policies

- Lack of medical / public health justification
- Inappropriate use of school nurse time
- Child, parental & staff distress
- Unnecessary absences from school
- Goals: Evidence-Based Practice



<http://www.cdc.gov/parasites/lice/head/schools.html>

- Students diagnosed with live head lice do not need to be sent home early from school; they can go home at the end of the day, be treated, and return to class after appropriate treatment has begun
- Personal hygiene or cleanliness in the home or school has nothing to do with getting head lice
- The burden of unnecessary absenteeism to the students, families and communities far outweighs the risks associated with head lice



- “No healthy child should be excluded from or allowed to miss school time because of head lice or nits.”
- “School personnel involved in detection of head lice infestation should be appropriately trained. The importance and difficulty of correctly diagnosing an active head lice infestation should be emphasized.”
- “Head lice screening programs have not been proven to have a significant effect over time on the incidence of head lice in the school setting and are not cost-effective.”



## Pediculosis Management in the School Setting

It is the position of the National Association of School Nurses that the management of pediculosis (infestation by head lice) should *not disrupt the educational process. No disease is associated with head lice, and in-school transmission is considered to be rare.*

Children found with live head lice should remain in class.

<http://www.nasn.org/PolicyAdvocacy/PositionPapersandReports/NASNPositionStatementsFullView/tabid/462/ArticleId/40/Pediculosis-Management-in-the-School-Setting-Revised-2011>

# IPM for Head Lice

Head lice are obligate parasites & are not free living.

- Hence, head lice are a medical issue, not a pest control problem.
- School & pest management personnel can do nothing to prevent or eliminate head lice.

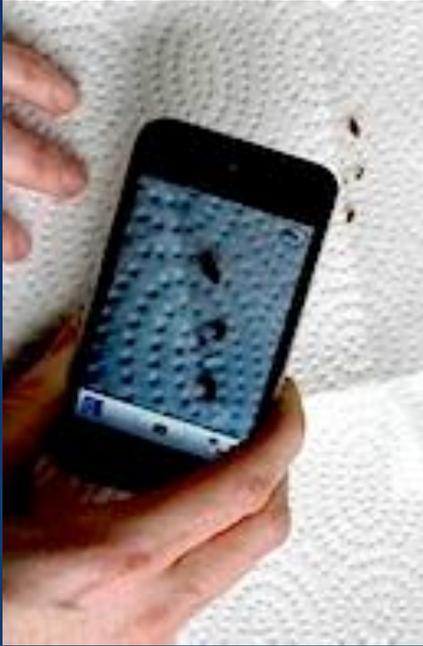
IPM efforts directed against head lice should be highly focused.... on the head.

- Schools can provide educational resources and rely on medical experts.
- No basis to treat environment or for anyone other than the child's care giver and medically trained personnel to examine a child.

# Perspective

- Head lice: an occasional malady of childhood
- The most trivial of the social 'diseases' a child may acquire. Compare to:
  - Viruses: Cold & influenza
  - Parasites: Pinworms
  - Fungal: Athlete's foot, ringworm
- Head lice indicate that the child has friends.

# Rapid, Independent, Confidential & Expert evaluations of pests and digital images.



<https://identify.us.com>

- Offer independent assurance
- Insulate school nurse from controversy
- Reduce unnecessary absentee rates & treatments

American Academy of Pediatrics:

<http://pediatrics.aappublications.org/content/135/5/e1355.full.pdf>

National Association of School Nurses:

<https://www.nasn.org/PolicyAdvocacy/PositionPapersandReports/NASNPositionStatementsFullView/tabid/462/ArticleId/40/Pediculosis-Management-in-the-School-Setting-Revised-2011>

US Centers for Disease Control and Prevention:

<http://www.cdc.gov/parasites/lice/head/index.html>

[IdentifyUS](https://identify.us.com/idmybug/head-lice/index.html)

<https://identify.us.com/idmybug/head-lice/index.html>

# Managing Head Lice in Schools – NASN Perspective

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*CENTER OF EXPERTISE FOR SCHOOL  
INTEGRATED PEST MANAGEMENT  
U.S. ENVIRONMENTAL PROTECTION AGENCY  
OCTOBER 20, 2015*



Nichole Bobo, MSN, RN  
Director of Nursing Education  
[nbobo@nasn.org](mailto:nbobo@nasn.org)

Expertise for School IPM

# Objectives

- ▶ Identify the key components of NASN's position on the management of head lice in schools
- ▶ Describe the NASN tools and resources to support school nursing practice related to the management of head lice in schools

# NASN's Position

(2011)



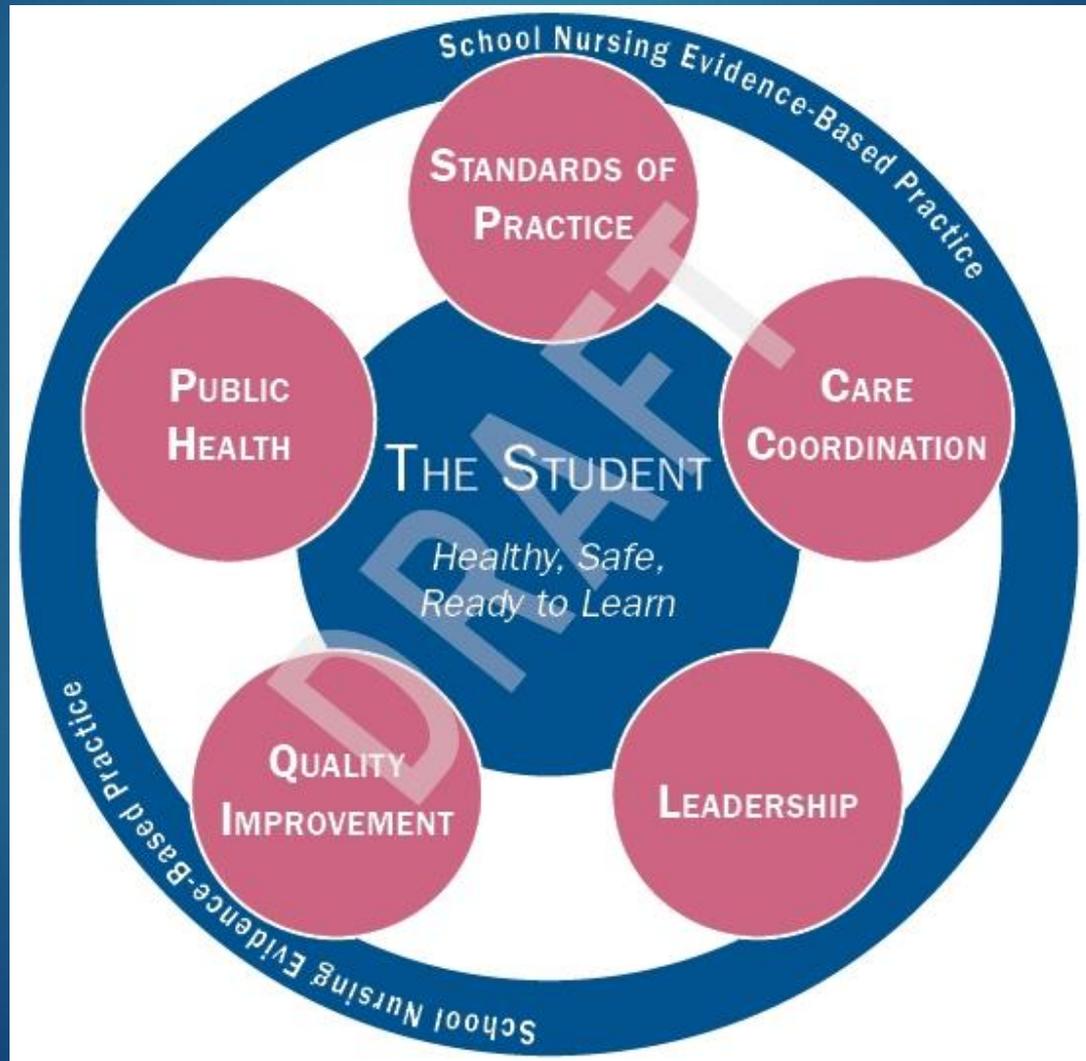
- ▶ Remain in class
- ▶ Discourage head-to-head contact
- ▶ Notify parent/caregivers at end of school day
- ▶ Screen known contacts
- ▶ Abandon “no-nit” school policies
- ▶ Eliminate classroom wide screening
- ▶ Letters home to provide education

<http://www.nasn.org/Portals/0/positions/2011pspediculosis.pdf>

Center of Expertise for School IPM



# Framework for 21<sup>st</sup> Century School Nursing Practice



# Proposed Framework for 21<sup>st</sup> Century School Nursing Practice

## Practice Components

### Care Coordination

Case Management	Chronic Disease Management	Collaborative Communication
Direct Care	Motivational Interviewing/Counseling	Nursing Delegation
Student Care Plans	Student-centered Care	Student Self-empowerment
Transition Planning		

### Leadership

Advocacy	Change Agents	Education Reform
Funding and Reimbursement	Healthcare Reform	Lifelong Learning
Models of Practice	Technology	Professionalism
Systems-level Leadership	Systems-level Leadership	

### Public Health

Access to Care	Cultural Competency	Health Equity
Healthy People 2020	Levels of Prevention	Outreach
Population-based Care	Social Determinants of Health	Surveillance

### Quality Improvement

Data Collection	Evaluation	Quality Improvement Cycle
Research	Uniform Data Set	

### Standards of Practice

Clinical Competence	Clinical Guidelines	Code of Ethics
Critical Thinking	Evidence-based practice	NASN Position Statements
Nurse Practice Acts	Scope and Standards of Practice	

# Managing Head Lice Role of the School Nurse

## Care Coordination

Collaborative  
Communication  
Education

## Leadership

Advocacy  
Policy Development  
& Implementation

## Quality Improvement

Evaluation  
Meaningful Health &  
Academic Outcomes

## Public Health

Environmental  
Health  
Health Education

## Standards of Practice

Evidence-based  
Practice  
NASN Position  
Statements

(NASN, 2015; NASN, 2010;  
ANA & NASN, 2011)



# NASN Webpage: Head Lice – *Pediculus capitis*

- ▶ Resource Publications
  - ▶ National Resources
    - ▶ In the Literature

<https://www.nasn.org/ToolsResources/HeadLicePediculosisCapitis>

# Education Campaign: Headfirst Lice Lessons



<https://www.nasn.org/ToolsResources/HeadLicePediculosisCapitis/HeadfirstLiceLessons>

# headfirst

## Lice LESSONS



ABOUT HEADFIRST  
LICE LESSONS

FIND  
HEAD LICE

TREAT  
HEAD LICE

HEAD LICE  
AND SCHOOLS

LICE  
QUESTIONS



ns.org/treat-head-lice/head-lice-diagnosis.html



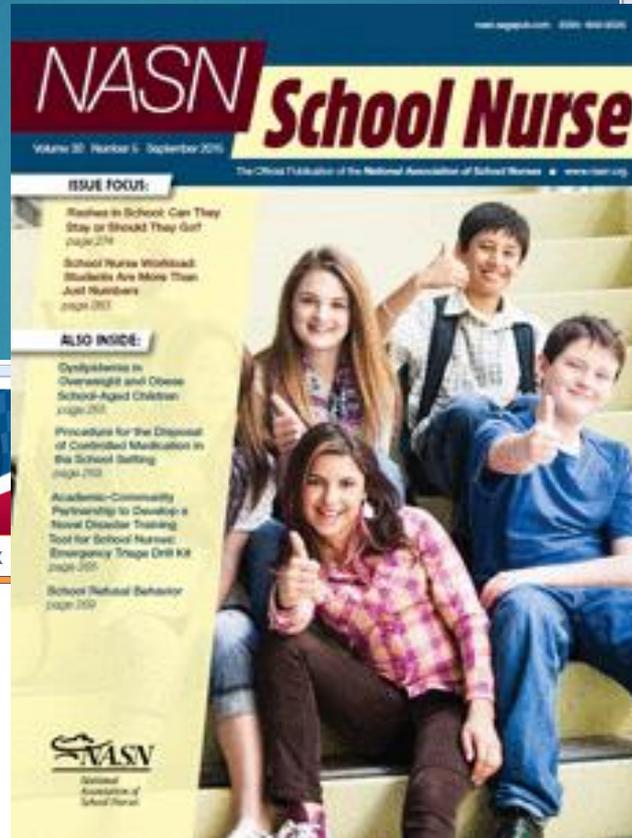
<http://headfirstlicelessons.org/>

Center of Expertise for School IPM



# Other NASN Resources

- ▶ Back to school toolkit
- ▶ NASN Radio



National Association of School Nurses Weekly Digest Archive Index

Learn more about the National Association of School Nurses at <http://www.nasn.org>.

## NASN Weekly Digest 2015 September 10

School Nurses are Integral Partners in Emergency Planning

## NASN Weekly Digest 2015 September 3

Help Students Choose Good Nutrition and Physical Activity

## NASN Weekly Digest 2015 August 27

LPNs and LVNs Are Valuable School Health Team Members

## NASN Weekly Digest 2015 August 20

National Uniform Data Set Initiative Begins Its Second Year

## NASN Weekly Digest 2015 August 13

Immunizations Protect You and Others Around You

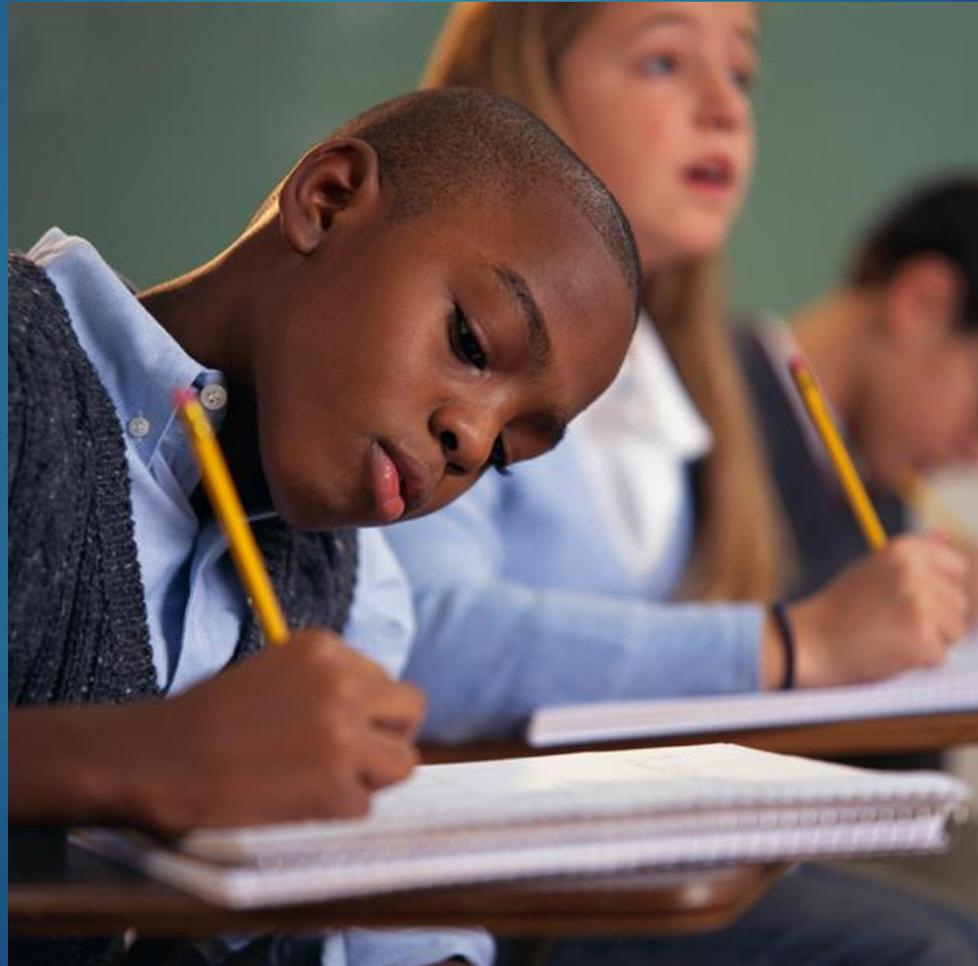
## NASN Weekly Digest 2015 July 30

Bring Us Along as You Navigate the New School Year

Center of Expertise for School IPM



# BETTER HEALTH. BETTER LEARNING.™



Center of Expertise for School IPM



# References

- American Nurses Association & National Association of School Nurses. (2011). *School nursing: Scope and standards of practice* (2<sup>nd</sup> ed.). Silver Spring, MD: Nursebooks.org.
- National Association of School Nurses. (2015). Framework for 21<sup>st</sup> century school nursing practice. *NASN School Nurse*, 20(4), 218-231.
- National Association of School Nurses. (2011). *Pediculosis management in the school setting* (Position Statement). Silver Spring, MD: Author.



# Head Lice in Schools



***SCHOOL NURSES = LICE QUEENS!***

**Deborah Pontius, MSN, RN, NCSN**

Health Services Coordinator/Chief School  
Nurse

Pershing County School District

Lovelock, NV

Center of Expertise for School IPM

# Goals of Lice Management in School

- ▶ Treat and eliminate lice as quickly and safely as possible
- ▶ Avoid interfering with education; minimize school absences
- ▶ Do not stigmatize or embarrass child or family
- ▶ Minimize recurrence by educating parents and the community

# Challenges of Lice in School



- ▶ Myths
  - ▶ Lack of understanding of transmission and life cycle
- ▶ Stigma and embarrassment
- ▶ Privacy and confidentiality
- ▶ Parental resistance to no exclusion/notification
- ▶ Exclusions interfere with education

# Role of the School Nurse<sup>1</sup>

- ▶ Lice expert: Key health professional
  - ▶ Identify, confirm, and contain infestation
  - ▶ Provide information to parents, school, and community on treatment
  - ▶ Prevent overexposure to chemicals
  - ▶ Minimize school absence
  - ▶ Educate and advocate to—
    - ▶ Eliminate exclusionary policies
    - ▶ Implement evidence-based policies



**Reference: 1.** Pontius, DJ, Teskey C. *Pediculosis Management in the School Setting*. National Association of School Nurses (NASN), 2011 Position Statement. <http://www.nasn.org>. Accessed August 16, 2012.

# Advocating for Evidence-Based Lice Policies

- ▶ If you have no policy, do not create policy
- ▶ Gather your own statistics
- ▶ Research evidence
  - ▶ NASN Position Statement
  - ▶ AAP Position Statement
  - ▶ CDC
  - ▶ Pollack et al
- ▶ Prepare action plan

# What is Wrong With No-Nit Policies?

- ▶ Assume nits are viable and easily transmissible
- ▶ Assume transmission likely within school
- ▶ Not based on myths

**References:** Pontius DJ. *NASN School Nurse*. 2011;26(6):356-362. Pontius DJ. *Pediatric Nursing*. 2014;40(5):226-235

# Goals of New Lice Policy<sup>1</sup>

- ▶ Move to evidence-based practice
  - ▶ Effectively, quickly, and safely eliminate student infestations
  - ▶ Community education
  - ▶ Changed perception
- ▶ Improved attendance
  - ▶ NO exclusions
  - ▶ Nurse-parent partnership
  - ▶ Confident self-care
- ▶ Increased academic excellence
  - ▶ No lags in education
  - ▶ Good psychosocial development of students

**Reference:** 1. Weisberg L. *NASN School Nurse*. 2009;24(4):165-166.

Center of Expertise for School IPM

# Parental and Teacher Resistance

- ▶ Aggressive demands for no-nit policies, immediate exclusion, notification, and classroom screenings :
  - ▶ Unfamiliar with evidence and new guidelines
  - ▶ Fearful of infestation/adhere to old common practices
  - ▶ Quarantine seems logical in the abstract



**References:** Pontius DJ. *NASN School Nurse*. 2011;26(6):356-362. Pontius DJ. *Pediatric Nursing*. 2014;40(5):226-235

# School Lice Policies<sup>1,2</sup>

## Conventional Wisdom-Based

- ▶ Classroom screenings of infested student
- ▶ Scheduled school-wide screening
- ▶ Notes home to parents of classmates
- ▶ Immediate exclusion when lice/nits found
- ▶ No-nit or nit-free



## Evidence-Based

- ▶ Screening family members and close contacts
- ▶ No regular screenings
- ▶ No notification of classmate parents
- ▶ Notify parents at the end of the school day
- ▶ Only nits closer than 1/2" from scalp = treat or remove

**References:** 1. Weisberg L. *NASN School Nurse*. 2009;24(4):165-166. 2. Pontius DJ. *NASN School Nurse*. 2011;26(6):356-362.

# Components of Model Lice Policy

- ▶ When lice is suspected:
  - ▶ Check suspected student using privacy measures
  - ▶ Check family members and close contacts
    - ▶ Recent overnights
    - ▶ Play together often outside of school
    - ▶ Shared hair care items
    - ▶ Shared bed



# Components of a Model Lice Policy

- ▶ When live lice or nits close to scalp are found
  - ▶ Return student to class
  - ▶ Notify teacher in confidential manner



Image: CDC  
PHIL

# Confidentiality & Privacy

- ▶ Do infested students have right to privacy?
- ▶ Do parents of classmates have right to know?
- ▶ Is it possible to keep knowledge of which student confidential?
- ▶ Which is the greater risk?
- ▶ Which right outweighs the other?



# Components of Model Lice Policy

- ▶ Notify parents at the end of the school day
- ▶ Focus on education of parents
  - ▶ Treatment regimens
  - ▶ What to look for
  - ▶ Myths and realities



Image: CDC  
PHIL

# Components of Model Lice Policy

- ▶ Eliminate no-nit policy
- ▶ Nits farther than 1/4" from scalp ignored



Image: CDC  
PHIL

# Components of a Model Lice Policy

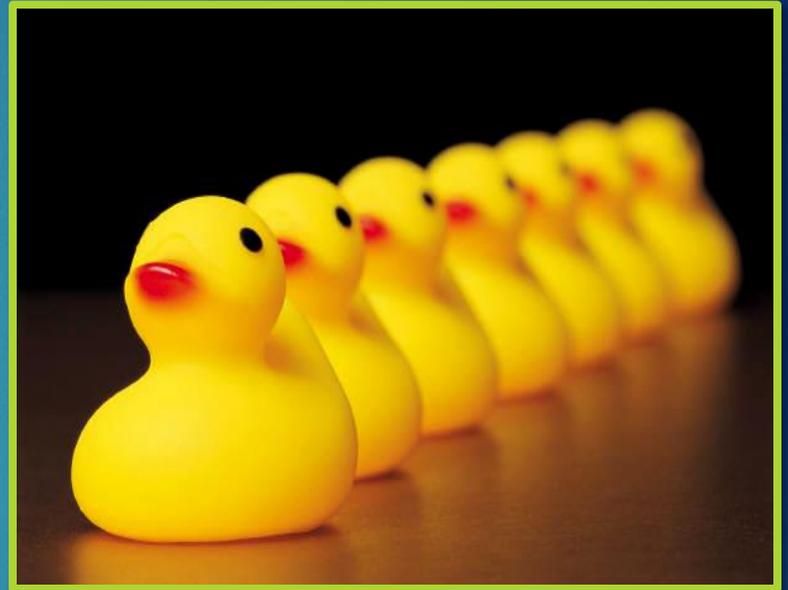
- ▶ After treatment-*consider*
  - ▶ Check upon return to school
  - ▶ Check 1 week later
- ▶ Nurse has authority to exclude or do classroom screenings at her discretion
  - ▶ Very small children, close contacts
  - ▶ Lack of parental follow-through

# Challenges to Policy Change

- ▶ Myths and fear
- ▶ Personal experience
- ▶ Industry and Organizations
  - ▶ Product manufacturers
  - ▶ Louse & nitpicking services
  - ▶ Organizations

# Successful Change Implementation<sup>1</sup>

- ▶ Ducks in a row
- ▶ Educate board
- ▶ Educate community
- ▶ Educate parents
- ▶ Re-educate as necessary
- ▶ Be prepared for panic



Reference: 1. Pontius DJ. *NASN School Nurse*. 2011;26(6):356-362.

# Summary: Goals of Pediculosis Management in Schools

- ▶ Educate parents and community
- ▶ Identify, confirm, and contain infestation
- ▶ Prevent overexposure of chemicals
- ▶ Maintain confidentiality and privacy
- ▶ Reduce stigma
- ▶ Minimize school absence
- ▶ Advocate for:
  - ▶ Elimination of exclusionary policies
  - ▶ Implementation of evidence-based policies

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# Questions?

**Center of Expertise for School IPM**

school.ipm@epa.gov

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