Lice Management Model Program

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The Nitty and Gritty of Head Lice

• Small blood sucking insects.
• Rarely, cause harm.
• Financial burden to families due to cost of care, work days lost and school days lost.
• Adaptable, dead lice recovered off the bodies of mummies.
• Equal opportunity, not related to hygiene.
Hair (head) Lice

Flat body
(Short fine hairs on upper surface)

Body depth: 200 microns
(1/5 mm)

Eye
Claw[foot]
to grasp hair

Mouth

Body Width 1 mm
Who’s Itching

- Preschool- and elementary-age children 3-10 years of age.
- 10 % Caucasian
- .5 % African American
Oregon Study

- 15 schools in 2 districts. 10,754 students screened
  - Elementary rate 1:10
  - Middle School 1:100
  - High School: 1:1000
Oregon Project

• 780 Exclusions involving 408 students
  – 1st time 59%
  – 4-6 times 11%
  – 7 or more times 1%
  – 1/2 day loss 22%
  – 2 day loss 57%
  – 8 - 30 days loss 10%
Life Cycle

- Three stages of development
  - 30 day life cycle
  - 8 eggs “nits” laid per day
  - hatch in a week.
  - Nymphs become adults in seven days.

(The Life-Cycle of the Head Louse)
Transmission

- **Primary:** Head-To-Head
  - Intimate contact, usually family and best friends.
- **Secondary:** Upholstery, combs, hats, brushes recently used by person with head lice
Less than 10 percent infestations occur at school

- Study of 2 elementary schools
  - K - 8
  - 15 classes each
  - n = 2,307 students
- Seating arrangement
  - 1 class 2 children - cousins
  - 1 class 5 infected 3 side by side and 2 scattered (sleep over)
  - 13 classes 1 student maximum

- Classroom inspections are unwarranted.
  - Disrupt instructional time.
  - Time intensive for nursing staff.
  - Rarely identifies new cases or a large number of students.
  - Generally identifies students previously infested.
    - Monitor with comb for more accurate assessment.
When to Screen?

- Screen in a classroom if 3 % infected within 10 days.
- An overnight trip is planned
- 3 % of the school is infected within 10 days
- Symptoms occur.
Screening

- Screen in good lighting
- Section hair and look at scalp carefully.
- Only exclude children with live bugs.
Head Inspection

- Part hair in sections.
- Carefully look at scalp.
- Look for dense coloration.
- Look for anything that runs.
Monitoring

- Check every day for 10 days (optimal)
- Check once a week for 3 weeks.
- Check siblings and close friends.
- Watch for nits at scalp line.
- Expect to see nymphs in 5-7 days.

• Management on the Day of Diagnosis: child should remain in class (had infection for month(s)). Avoid head to head contact.

• All household members should be checked.

• Treat: only live lice or nits 1 cm from the scalp
Classroom Treatment

- Do not use words like “outbreak” with parents/staff.
- Do not use pesticide sprays.
- Do not bag coats.
- Do not send letters home to classmates’ parents.
- Wipe head sets between uses.
- Sweep carpets if class is next day.
Treatment of Head Lice

- Pyrethrins: RID, A-200, Pronto
- Permethrin (1%): Nix
- Lindane (1%): Kwell
- Malathion (.5%): Ovide
- Permethrin (5%): Elimite
- Oral Agents: Bactrim, ivermectin (Stromectal)
- Natural Products: Hair Clean
- Occlusive Agents
Management Plan

Inspect hair for live lice. Compare samples to photos.

- **yes**
  - Nits found on hair?
    - **yes**
      - Live lice (crawling on hair?
        - **yes**
          - Periodically reinspect hair for live lice. Weekly for 3 weeks. Daily for 10 days is optimal.
        - **no**
          - Periodically reinspect hair for live lice. Weekly for 3 weeks. Daily for 10 days is optimal.
    - **no**
      - Do nothing.

- **no**
  - Do nothing.

**Recommended Responses**

**Unjustified responses**
Reporting case to social services.
Exclusion or quarantine.
Insecticide Treatments to school.
Mass screenings.
Bagging clothes.
Notification of classmates’ parents.
Restrictive use of head phones and athletic gear.
Reoccurrence

- Misdiagnosis (no active infestation).
- Non-compliance.
- Resistance to insecticide.
- New case.
- Social factors
  - Crowding
  - Poverty
  - Lack parental capacity (cognitive, emotional, no time)
Treatment Failure

![Flowchart](image)

Figure 2. Assessing treatment success after two applications of insecticide, seven days apart.
Socioeconomic Variables

• Chronic Stress
• Physical and or Mental Illness
• Father absent
• Lack of Parental Presence: Alcoholic Father and abusive with Mother disabled
• Living with Grandparent
Other factors

• Family moves frequently
• School Avoidance
• Crowding
• Extended Family System (Hootman, J. p.84, 2002)
MOM, TEACHER SAYS I HAVE HEADLIGHTS!
Social Implications

• More children have colds than head lice.
• Chronic head lice is outside the control of the child.
• Adverse health effects not due to lice but the public perception.
• Your reaction can be the difference between a tear or a smile.
• An estimated 7 million dollars is spent in lost work days, school days lost, and in materials used to treat head lice.
Nursing Implications

- Focus interventions to target long term management
  - monitoring versus crisis management.

- Build relationships and trust with students and families
  - Support materials
  - Simplify Treatment

- Research supports that the home, not the classroom, is the primary contagion
  - Parent/Staff education

- Long term support such as combing and home visits to model behavior can decrease school absenteeism.
Benefits of School Based Programs

- Relationship Building with students and families.
  - Improve self-esteem.
  - Increase parental cooperation.
- Decrease potential for abuse.
- Decrease Absenteeism.
- Increase consistency of rechecks resulting in better surveillance.
- Decrease the number of students with chronic cases.
- Improve school performance by direct impact on attendance.
References

• Koranyi, Katalin, MD Professor of Pediatrics Clinical, Columbus Children’s Hospital. Speaker OASN Conference March 28, 2003.

• **Web Sites:**
  • http://www.hsph.harvard.edu/headlice.html
  • http://www.ncbugs.com/Head%20Lice.htm