Child Abuse

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Prevention

“the ultimate test of civilization is not the power of its armies nor the size of its gross national product, but the condition of its children. If they flower, a society deserves to be described as flowering...If they are corrupted, if they suffer, they die from abuse or neglect, an atrocity has been committed for which no achievement can atone.”

Journalist Melvin Maddocks

Child Abuse: What is it?

Any physical, psychological, or sexual mistreament of a child of any kind.

http://Ezinearticles.com/?defining-Child-Abuse&id=1255725
Statistics

- Child abuse statistics state that four children in the US die every day as a result of child abuse. Three out of four were under the age of four.
- Child abuse statistics also indicate that a report of child abuse is made every ten seconds.
- It has been proven that most child abuse occurs within the home of the child.

Further Breakdown of Statistics

- Somewhat surprising child abuse statistics state that children under the age of twelve years who are raped have perpetrators they know up to 90 percent of the time.

- The rate of child abuse and neglect fatalities reported by NCANDS 2.04 per 100,000 in 2006.

- National Child Abuse and Neglect Data System estimated 1,530 child fatalities in 2006.


Child abuse and neglect fatalities by maltreatment

In 2006, 41.1 percent of child maltreatment fatalities were associated with neglect alone. Physical abuse alone was cited in almost one-quarter (22.4 percent) of reported fatalities. Another 31.4 percent of fatalities were the result of multiple maltreatment types.

http://www.childwelfare.gov/pubs/factsheets/fatality.cfm
Child abuse and neglect fatalities by maltreatment

- Neglect only 41.1%
- Multiple maltreatment types 31.4%
- Physical Abuse only 22.4
- Psychological Abuse other or unknown 2.9%
- Medical Neglect 1.9%
- Sexual Assault abuse only 0.3%

http://www.childwelfare.gov/pubs/factsheets/fatality.cfm
What are the characteristics of victims?

- Children under six years account for 86% of all maltreatment deaths while infants account for 43%.
- Girls were slightly more likely to be victims than boys.
- African-American children, Pacific Islander children, and American Indian or Alaska Native children had the highest rates.

http://www.childdeathreview.org/causesCAN.htm
Major Risk Factors

- Younger children as previously discussed
- Parents/caregivers under 30 years of age
- Low income, single-parent families experiencing increased stress
- Those left with male caregivers that have no emotional attachment to the child
- Children with emotional/physical/health needs
- Substance abuse
- Those caregivers with unrealistic expectations of behavior and development of the child

http://childdeathreview.org/causesCAN.htm
Types of Abuse

- Physical abuse
- Neglect
- Sexual abuse
- Emotional abuse
Forms of Fatal Child Abuse

- Physical trauma
  - Blunt Trauma: multiple episodes (battered baby syndrome/AHT)
  - Asphyxiation: smothering, strangulation and hanging, drowning
  - Burning
  - Stabbing & cutting
  - Firearm injuries
  - Sexual Abuse
- Poisoning
- Neglect
Signs of Physical Abuse

- Has unexplained burns, bites, bruises, broken bones, or black eyes.
- Has fading bruises or other marks noticeable after an absence from school.
- Seems frightened of the parents and protests or cries when it is time to go home.
- Shrinks at the approach of adults.
- Reports injury by a parent or another adult caregiver.
Signs elicited by the child that may indicate neglect

- Is frequently absent from school.
- begs or steals food or money.
- Lacks needed medical or dental care, immunizations, or glasses.
- Is consistently dirty and has severe body odor.
- Lacks sufficient clothing for the weather.
- Abuses alcohol or other drugs.

Sexual Abuse

- Inappropriate touching
- Fondling
- Penetration
- Violation of a child’s privacy

Signs of Sexual Abuse

- Has difficulty walking or sitting.
- Suddenly refuses to change for gym or to participate in physical activities.
- Reports nightmares or bed wetting.
- Experiences a sudden change in appetite.
- Demonstrates bizarre, sophisticated, or unusual sexual knowledge or behavior.
- Becomes pregnant or contracts a venereal disease, particularly if under age 14.
- Runs away.
- Reports sexual abuse by a parent or another adult caregiver.
Myths and Facts about Sexual Abuse

Occurs between adult men who exploit young girls or vice versa

Fact: most involve men and underage girls, when boys are abused it is usually as a victim of adult males

Sexual abusers are usually “dirty old men”

Fact: abusers are someone they know and trust

Myths about Sexual Abuse

**Myths**
- Relies on physical violence
- One can detect a child abuser
- The abuser will continue to abuse new individuals

**Facts**
- Injury may lead to discovery, usually a voided.
- Unless specially trained, not likely
- Usually true with a stranger abuser, known abusers use seduction and “grooming”

Signs of Emotional Maltreatment

- Shows extremes in behavior, such as overly compliant or demanding behavior, extreme passivity, or aggression.
- Is either inappropriately adult (parenting other children, for example) or inappropriately infantile (frequently rocking or head-banging, for example).
- Is delayed in physical or emotional development.
- Has attempted suicide.
- Reports a lack of attachment to the parent.

Burns
Burns

- Burns are classified by their depth and extent of body surface
- Extent and configuration of the burn are influenced by:
  - The agent causing the burn
  - Temperature of the agent
  - Length of time applied to skin
  - Dept of the skin at the site
  - Presence of clothing or diaper
Evaluation of Scald Burns

- Burn Pattern
- Circumstantial evidence
- Developmental age of child
- Water temperature
- Prevention tip: lower household water temperature to 120 degrees fahrenheit

http://www.cdc.gov/nasd/docs/d000701-d000800/d000702/d000702.html
Abusive Scald Burns

- Mirror image burns
- Full thickness burns
- Burns of palms and soles
- Clear cut immersion lines
Inflicted Burns

- Cigarette burns
- Match tip or incense burns
- Dry contact burns from forced contact with heating devices
- Heating grate
- Electric hot plate
- Radiators
# Effects of Water Temperature

<table>
<thead>
<tr>
<th>Water temperature</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>101 degrees F</td>
<td>Comfortable for bathing</td>
</tr>
<tr>
<td>106-108 degrees F</td>
<td>Typical hot tub temperature</td>
</tr>
<tr>
<td>109-118 degrees F</td>
<td>Pain threshold for adult</td>
</tr>
<tr>
<td>113 degrees F</td>
<td>Partial thickness burn 1 minute</td>
</tr>
<tr>
<td>127 degrees F</td>
<td>Full thickness burn in 1 minute</td>
</tr>
<tr>
<td>130 degrees F</td>
<td>Full thickness burn in 30 seconds</td>
</tr>
<tr>
<td>150 degrees F</td>
<td>Full thickness burn in 2 seconds</td>
</tr>
</tbody>
</table>
Differentiating Inflicted from Accidental Burns

- Burn
  - Pattern
  - Symmetry
  - Configuration
  - Depth of Burn

- Developmental capabilities of the child

- Time interval for seeking medical care

- History and scene investigation
Burns

- Small circular burns which may have been inflicted by a cigarette or cigar, often found on forearms, hands, buttocks, or soles of the feet.

- Burns with a "doughnut" shape on the buttocks which may indicate a child was dipped or forced to sit in scalding liquid. Any burn which shows the pattern of the object used to inflict the injury (e.g., an iron, fireplace tool, heaters, etc.).

- Burns caused by friction, usually found on arms, neck, legs, or torso indicating a rope or cord may have been used to tie up the victim.
Conditions mimicking inflicted cigarette burns

- Accidental cigarette burns
- Impetigo
- Chicken pox
- Insect bites
- Excoriated, picked at chronic pyoderma
Conditions mimicking inflicted immersion burns

- Chemical Burns
  - Carpet cleaners
  - Oven cleaners
- Diaper areas
- Burns from urine, feces
- Secondary infection of chemical burn (urine) looks like secondary burn, will have sharp boarders
Have you heard of Hot Saucing?
"Hot Saucing" (a.k.a. "Hot Tongue") involves burning a child's tongue with Tabasco or a similar hot sauce as a punishment for unacceptable behavior. It is generally used when:
talking back to adults, lying, biting someone, swearing, spitting, refusing to eat, etc. Variations on the punishment include the use of acetic acid (vinegar), lemon juice, soap or some other highly noxious substance.
Bones: Abusive Fractures

- Type of fracture
- Age and development of child
- History incompatible with trauma
- Evidence of abuse, other fractures
Skeletal Injury

- Occurs in 11-55% of abused children
  - 429 fractures in abused children
    - 76% in long bones
    - 8% in skull
    - 8% in rib cage
Distribution of Abusive Fractures

Loder and Bookout 1991
- 154 Fractures in 75 abused children
  - 32% skull
  - 20% ribs
  - 45% long bone
  - 28% “corner fractures”

Worlock, et al 1986
- 156 Fractures in 35 abused children
  - In those <18 months
    - 60% involved the ribs
    - 11% skull fractures
  - In children >18 months
    - No rib fractures
    - 40% skull fractures
Myths about Fractures

- **Spiral fractures are nearly always abusive**
  - Fact: spiral fractures can be accidental if a twisting mechanism is implicated

- **Babies bones break easily**
  - Fact: young infants have flexible bones that bend before they break

- **There should be bruises over inflicted fractures**
  - Fact: Bruises over inflicted fractures are rare
# Patterns of Skeletal Injury

<table>
<thead>
<tr>
<th>High Specificity</th>
<th>Moderate Specificity</th>
<th>Common, but low specificity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classic metaphyseal fractures</td>
<td>Multiple fractures</td>
<td>Subperiosteal new bone formation</td>
</tr>
<tr>
<td>Rib fractures</td>
<td>Fractures of different ages</td>
<td>Clavicular fractures</td>
</tr>
<tr>
<td>Scapular fractures</td>
<td>Epiphyseal separations</td>
<td>Long bone fractures except in non-mobile infants</td>
</tr>
<tr>
<td>Spinous process fractures</td>
<td>Vertebral body fractures</td>
<td>Linear skull fractures, may be abuse if hx doesn’t fit</td>
</tr>
<tr>
<td>Sternal fractures</td>
<td>Digital fractures</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Complex skull fractures</td>
<td></td>
</tr>
</tbody>
</table>

Kleinman: Diagnostic Imaging of Child Abuse, 2nd Ed.
Skeletal Survey

- Performed in all infants and young children with suspected abuse < 2 years of age
- Children > 5 years rarely have skeletal injuries related to abuse
- Children in the 2-5 year range are imaged on a case-to-case basis
- The “body gram” (a study that encompasses the entire infant or young child on 1-2 radiographic exposures) or abbreviated skeletal surveys have no role in the imaging of these subtle but highly specific bony abnormality

Rib Fractures

- Unusual in children, except in cases of abuse
  - May see in some metabolic disorders, premature infants, skeletal dysplasias, motor vehicle collisions
  - Rarely caused by CPR
  - Rarely caused by Birth
  - Rarely caused by Surgery

- Locations
  - Typically posterior
  - Also lateral and anterior
Fracture Healing

- Periostial new bone
  - 10-14 days
- Visible callus
  - 2-4 weeks
- Incomplete bridging
  - 3 weeks
- Complete bridging
  - 10 weeks

Little good information is available for infants
Bruising

- Bruising patterns can suggest gripping (finger marks), slapping or beating with an object.
- Bruising on the cheeks, head or around the pinna and black eyes can be the result of non-accidental injury.
- Bruises on black children will be more difficult to identify.
## Dating of Bruises

<table>
<thead>
<tr>
<th>AGE</th>
<th>COLOR</th>
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<tbody>
<tr>
<td>0-2 days</td>
<td>Swollen, tender</td>
</tr>
<tr>
<td>0-5 days</td>
<td>Red, Blue</td>
</tr>
<tr>
<td>5-7 days</td>
<td>Green</td>
</tr>
<tr>
<td>7-10</td>
<td>Yellow</td>
</tr>
<tr>
<td>10-14</td>
<td>Brown</td>
</tr>
<tr>
<td>2-4 weeks</td>
<td>Clear</td>
</tr>
</tbody>
</table>
Differential Diagnosis of Bruises

- Accidental
- Mongolian spots
- Hematologic conditions
  - Coagulation disorders, idiopathic thrombocytopenic purpura, leukemia
- Vasculitis
  - Henoch-Schonlein purpura
- Infection
  - Rickettsial infections, secondary syphilis
- Ehlers-Danlos Syndrome
- Coin Rubbing (Cao gio)
- Brown Recluse Spider Bite
Problems with Bruising

- Significant blows may not produce significant contusions
- Contusions may not become visible for some time
- Contusions do not necessarily appear at the site of impact
- Bruises are often larger than the impacting object or smaller or not seen at all related to tissue giving
- The intensity of the force applied is very hard to estimate
Work-up of Bruises

- Bleeding History
- CBC with Platelets
- Von Willebrand’s Screen
- Coags?
  - PT, PTT

Abuse and Bleeding Disorders are not mutually exclusive
The practice of coining, cupping, or pinching to heal their children's illnesses. Coining is when coins are pressed and drawn across the child's back at specific sites to help heal the child. Coining leaves bruising where the coins were pressed and drawn, and can have a very disturbing appearance to someone unfamiliar with this practice.
Bites

- Can differentiate animal and adult bits from child
  - Animal bites are more pointed and narrower
  - An adult bite has a maxillary canine to canine distance of greater or equal to 3 cm
- Important to have a ruler in the picture
- If evaluated soon after incident, swab for saliva sample
  - Enlist the help of a forensic dentist
Findings found equally in Abused and Non-Abused Children

- Labial agglutination
- Increased vascularity
- Linea vestibularis
- Increased friability
- Perineal depression
- Hymenal bump, tag, band, superficial notch, or external ridge
- Longitudinal intravaginal ring

Forensic laboratory evidence in sexually abused children & adolescents

ER pts with Hx of SA within 72 hours:

- 49 children were <12, 31 were ages 12-16
- Sperm or seminal fluid was found in 16/80 (20%) of evidence kits
- Only 3/49 pts had positives but not from body sites, 2 from underwear, 1 washcloth
- 13 adolescents had positive body sites and 8 had positive clothing

Urgent Medical Assessment after child abuse

- Comparison of 190 children <13 seen at a CAC within 72 hours and 586 were seen non-urgently.
- More disclosures if seen urgently 86% vs. 54%.
- More positive physical exam findings 13.2% vs 3.8%.
- 29% of exams seen in the 1st 12 hours and 26% seen between 49 and 72 hours were positive.
- Findings include anal/genital lacerations, hymenal transections and abrasions; anal/genital bruises.

Palusci et al, Child Abuse Negl 2006; 30:367-380
46 prepubertal girls had non-acute genital exams that ER doctors called abnormal
32 (70%) were normal when examined by doctor who is experienced in child abuse
8 (17%) showed clear evidence for abuse
4 (9%) had findings that were non-specific
2 (4%) had findings that are seen more often in SA but not diagnostic for SA
Patients were from 1994-1998

Makoroff, Shapiro 2002 CAN 26:1235
WHY?

- Lack of experience and training
- Changing interpretation of findings
- Tendency to overcall
- Doctors do not want to miss abuse
- What do they need to know?
- What is clearly abnormal
- We have a classification of all findings
What we know in 2008:

- Few vulvar or hymenal findings are indicators of sexual abuse in pre-pubertal girls.
- These findings are rarely seen in children examined for concerns of sexual abuse.
- Findings strongly indicative of sexual abuse were observed in < 5% of abused children.
- The genital exam is unlikely to diagnose SA.
- The child’s history is still the most important part.
- We need to understand the child’s perception of the abuse.
The Child reports

- Give reassurance and let them know that they are safe.
- Respect their privacy
- Don’t force details about it from the child
- Be mindful of your non-verbal communication.
Things to keep in mind

- Where is the injury?
- How many are there?
- Are the injuries in different stages of healing?
- Are the injuries in protected areas?
- Size and Shape of the injuries
- Does the story match?
- Are the injuries consistent with the child’s developmental capabilities?

“when any person has reason to suspect that a child has been injured as a result of physical, emotional, or sexual abuse or neglect the person is required by law to report.”
What happens if you don’t report?

- Class B Misdemeanor. “Failure of a mandated reported to make a report is a crime which could result in a $1,000 fine or up to six (6) months in jail.”
- Kansas law provides immunity from lawsuits against reporters of child abuse.

Reporting in Kansas

- 1-800-922-5330

- If child is in immediate danger: SRS responds immediately

- Alleges abuse, not immediate danger but involves sexual abuse, physical or critical neglect: SRs must respond within 72 hours

- SRS must respond in 20 working days for those not in immediate danger and no disclosure of sexual abuse.

Methamphetamine Risks to Kids:

- Exposure to explosives
- Physical and sexual abuse
- Exposure to a high risk population
- Neglect
- Presence of pornography

Handout Methamphetamine: Children at risk, great resource for signs of use in parents and signs the children might illicit if they are in a home where it is used/produced
Contact Information

- U.S. Department of Health and Human Services Children’s Bureau: Childhelp USA’s National Child Abuse Hotline: 1-800-4 A CHILD

- Prevent Child Abuse America: Phone: 1-800-CHILDREN or 312-663-3520
  Web site: http://www.preventchildabuse.org
National Clearinghouse on Child
Abuse and Neglect Information:
Phone: 1-800-394-3366 or 703-385-7565
Web site: http://nccanch.acf.hhs.gov
Questions?
Upcoming Conference

2009 Kansas Alliance for Drug Endangered Children

Ball Conference Center, Olathe, KS
August 20, 2009 8:30-4:30, lunch provided

www.parstopeka.com for more information
Contact Information

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- Johnsonforensiclnc.com
- (W) 913-826-1243
- (M) 913-660-8491
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- Makoroff, Shapiro 2002 CAN 26:1235
- Palusci et al, Child Abuse and Neglect 2006; 30:367-380

