Conundrums in General Practice
Paediatrics

Nikki Turner, GP and Assoc Prof
Department of General Practice and Primary Care,
University of Auckland
• Throat swabs and fear of Rh fever
• Obesity
• Meningococcal and other private market vaccines
• Sleeping positions
• Recurrently sick children ?beyond our control
• Wheezy babies, when to admit
Jonty is NZ European child from a large family in Papatoetoe, he is 7 years old and his Auntie brings him in with a snotty nose, miserable and a cough.

O/E he has a temperature of 36.8°C and a moderate pharyngitis, no cervical lymphadenopathy

– Should I do a throat swab
– Should I treat for GAS (because I’m shit scared of rheumatic fever)
RIGHT WAY

WRONG WAY

2.2-MILE LOOP
Figure 4 from:
Milne R et al *Incidence of acute Rheumatic fever in children and youth*  
J Paed and Child Health 48(2012) 685-691

Green = PI  
Red = Māori  
Blue = NZE

Blue line = NZARF Guidelines intervention threshold
**GUIDE**
for household sore throat management

**Group A streptococcus pharyngitis - assess household**

**Have there been ≥2 cases of GAS pharyngitis in this household in the last three months?**

- **Yes**
  - Throat swab all household members regardless of whether symptoms of pharyngitis are present or not
  - **Is the household member GAS positive?**
    - **No further action required**
    - **No**
      - Treat household member as per Routine Antibiotics (Table 1) regardless of symptoms

- **No**
  - No further action required

**Is there a household or family history of rheumatic fever?**

**Sore throat**

**Assess risk factors for group A streptococcus (GAS) pharyngitis and/or rheumatic fever**

- Māori or Pacific peoples
- 3-45 years old
- Lives in lower socioeconomic areas of North Island
- Past history of acute rheumatic fever

2-3 risk factors

<table>
<thead>
<tr>
<th>Score</th>
<th>Temperature &gt;38°C</th>
<th>Cough</th>
<th>Swollen or tender anterior cervical lymph nodes</th>
<th>Tonsil swelling or exudate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>1</td>
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<td></td>
</tr>
<tr>
<td>-1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total Score /5

**Apply Criteria**:

- Any criteria present
- No criteria present

**High**

Risk for GAS and rheumatic fever

- Throat swab
- Antibiotics

**Medium**

Risk for GAS and rheumatic fever

- Antibiotics only if GAS positive

**Low**

Risk for GAS

- Antibiotics

Choose appropriate antibiotics (from tables 1 and 2)*

Assess household (see algorithm on back page)

* If patient is on benzathine penicillin IM prophylaxis for acute rheumatic fever, and is GAS positive on throat swab, treat in the following way:
- If GAS positive in the first two weeks after IM penicillin injection has been given, treat with a ten day course of erythromycin (see table 1 and guideline)
- If GAS positive in the third and fourth weeks after IM penicillin injection, treat with a ten day course of oral penicillin (see table 1 and guideline)
Table 1: Routine Antibiotics

<table>
<thead>
<tr>
<th>ANTIBIOTIC</th>
<th>ROUTE</th>
<th>REGIMEN</th>
<th>DURATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Penicillin V</td>
<td>PO</td>
<td>Children: 20mg/kg/day in 2-3 divided doses (maximum 500mg 3 times daily)</td>
<td>10 days</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Adults: 500mg twice daily (for children under 12 years)</td>
<td></td>
</tr>
<tr>
<td>Erythromycin Ethyl Succinate (EES)</td>
<td>PO</td>
<td>Children: 40mg/kg/day in 2-4 divided doses (maximum 1g/day)</td>
<td>10 days</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Adults: 400mg twice daily</td>
<td></td>
</tr>
<tr>
<td>Benzathine Penicillin G (BP G)</td>
<td>IM</td>
<td>Children: &lt;20 kg: 600,000 U once only</td>
<td>Single dose</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Adults and children &gt;20 kg: 1,200,000 U once only</td>
<td></td>
</tr>
<tr>
<td>Amoxicillin</td>
<td>PO</td>
<td>Weight &lt;30 kg: 75mg/kg once daily</td>
<td>10 days</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Weight 30-50 kg: 150mg/kg once daily</td>
<td></td>
</tr>
</tbody>
</table>

Table 2: Recurrent Antibiotics

Recommendations for treatment of persons with multiple, recurrent, episodes of Group A Streptococcal pharyngitis proven by culture. Use this if the patient's third (or more) case of GAS pharyngitis in a three month period.

<table>
<thead>
<tr>
<th>ANTIBIOTIC</th>
<th>REGIMEN</th>
<th>DURATION</th>
<th>RATING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clindamycin</td>
<td></td>
<td>10 days</td>
<td>II</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10 days</td>
<td>III</td>
</tr>
<tr>
<td>Amoxicillin</td>
<td></td>
<td>10 days</td>
<td>II</td>
</tr>
<tr>
<td>clavulanic acid</td>
<td></td>
<td>10 days</td>
<td>II</td>
</tr>
<tr>
<td>Parenteral with or without oral</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Benzathine penicillin G</td>
<td>IM dose: See Table 1, or refer to IDSA guidelines#</td>
<td>1 dose</td>
<td>II</td>
</tr>
<tr>
<td>Benzathine penicillin G with Rifampin</td>
<td>IM dose: See Table 1, or refer to IDSA guidelines#</td>
<td>Rifampin: 20mg/kg/day orally in 2 divided doses</td>
<td>4 days</td>
</tr>
</tbody>
</table>

References

Source: Modified from Table five in the IDSA guidelines: Recommendations for treatment of symptomatic persons with multiple, recurrent, episodes of pharyngitis proven by culture or rapid antigen detection testing. Blaser M A et al. 2002.5

Macrolides (e.g. erythromycin) and cephalosporins are not included in the table, because there is insufficient data to support their efficacy in this specific circumstance.

* Adult doses are extrapolated from data for children. Use of this drug for this indication has not been studied in adults.

** Clindamycin – further references available from: Tanz RR et al. 1991, and Orling AA et al. 1994

*** Requires amoxicillin component. Note that clavulanic acid component may vary. Further reference from Kaplan EL et al. 1988

# Treatment with benzathine penicillin G is useful for patients in whom compliance with previous courses of oral antibiotics is in question. Addition of rifampin to benzathine penicillin G may be beneficial for eradication of streptococci from the pharynx. However, it has also been reported that addition of rifampin (150mg/kg/day, once daily) during the first four days of a ten day course of oral penicillin V may achieve high rates of eradication. The maximum daily dose of rifampin is 600mg; rifampin is relatively contraindicated for pregnant women.

Footnote:

# Infectious Diseases Society of America – United States Public Health Service grading system for rating recommendations in clinical guidelines:6

<table>
<thead>
<tr>
<th>CATEGORY, GRADE</th>
<th>DEFINITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Good evidence to support a recommendation for use</td>
</tr>
<tr>
<td>B</td>
<td>Moderate evidence to support a recommendation for use</td>
</tr>
<tr>
<td>C</td>
<td>Poor evidence to support a recommendation</td>
</tr>
<tr>
<td>D</td>
<td>Moderate evidence to support a recommendation against use</td>
</tr>
<tr>
<td>E</td>
<td>Good evidence to support a recommendation against use</td>
</tr>
</tbody>
</table>

Quality of evidence

I. Evidence from a 1 properly randomized, controlled trial

II. Evidence from a 2 well-designed clinical trial, without randomization, from cohort or case-controlled analytic studies (preferably from > 1 centre), from multiple time series, or from dramatic results of uncontrolled experiments

III. Evidence from opinions of respected authorities, based on clinical experience, descriptive studies, or reports of expert committees.
Obesity story

Sophie is a 12 year old who has come in with her Mum because she has an infected graze on her knee and with no other complaints. You notice she is not a slim lass, in fact distinctly on the ‘chunky’ side.......
Thanks to Prof Tony Dowell for allowing me to steal his following slides on obesity
Overweight and Obesity

2006/7

• One in twelve children (aged 2 to 14 years) obese (8.3%).
• One in five children overweight (20.9%).
• Adjusted for age, Pacific boys and girls 2.5 times more likely to be obese than boys and girls in the total population
• Adjusted for age, Māori boys and girls 1.5 times more likely to be obese than boys and girls in the total population
• No change in the average (mean) BMI or the prevalence of obesity for children aged 5-14 years since 2002.
Child and Youth obesity is not solely due to:

- Lack of exercise
- Maccas and Coke
- Poverty
- Lack of parental support
- Children’s perverse behaviour ‘whatever’
- School policies
- Lack of school meals
- Dairy owners
- Government policies
- Food industry hegemony
- Poor health promotion
- Lack of engagement in the issue by General Practice
Obesity

But

- All those factors and many others have a part to play.
Causes of obesity
The language in the consultation

How do we ask difficult questions in the consultation.

e.g. The 87Kg – 14 year old BMI 29

• Interactional delicacy

• “Do you think you all eat fairly healthily in the family or do you think you eat stuff that you shouldn’t a lot?”

• “So- I’m just trying to work out what the dose of your tablets might be – can we pop you on the scales- what weight do you think you might be”
The language in the consultation

Overweight 17 year old with Mum

• “GP – So do you get any exercise then?”

• “Nah – Only when I go over and stay all night at my boyfriends (giggles). – Except they won’t let me – ‘cos they don’t like me getting pissed”.

• GP “ er – mmmm – Ok then”
5 Point plan
Arch Group (TAbOO), Department of Primary Care and General Practice, University of Otago, Wellington

• Reduce portion size
• Always eat breakfast
  – regular meal times and planned snacking
• Green and red flags
  – Problem solving and self monitoring by the patient
  – People targeting behaviour patterns that they know are counterproductive eg KFC, fizzy drinks
• The place of exercise
  • Exercise is fantastic but hopeless for losing weight
• Recognition of psychological factors
  • How are you feeling about all this
In memory of Leonard Ball,
who hated fat people
• Danny is 11 years old and his Mum is asking for that meningitis vaccine because she had heard of the 12 year old girl that died last year.
Meningococcal disease rates by age group, 2007–2011

From: The Epidemiology of Meningococcal disease in New Zealand in 2011 ESR June 2011
Meningococcal vaccines

Currently only private market and outbreak use in NZ

- **Polysaccharides** – A, C, Y, W-135
  - Ineffective in younger children
  - Short duration of immunity
  - Possible hyporesponsiveness with multiple use

- **Conjugates** – C, Quadrivalent
  - Effective in younger children
  - Herd immunity effects

- B vaccine (Bexsero) .....close
  (NB unlikely to be any individual protection left now in NZ community from MeNZB vaccine)
Danny has a younger brother who has just caught a nasty bout of chicken pox from his pre-school and his Mum is now really unimpressed with the general practice that no one had told them there was also a chicken pox vaccine available.
<table>
<thead>
<tr>
<th>Patient</th>
<th>Vaccine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infants</td>
<td>Rotavirus vaccine</td>
</tr>
<tr>
<td></td>
<td>Meningococcal C conjugate vaccine</td>
</tr>
<tr>
<td>Older infants/toddlers</td>
<td>Varicella, meningococcal conjugate</td>
</tr>
<tr>
<td>Adolescents/young adults</td>
<td>4-valent Meningococcal conjugate (polysaccharide cheaper for short duration immunity)</td>
</tr>
<tr>
<td>Cocoon protection</td>
<td>Pertussis and influenza</td>
</tr>
<tr>
<td>MSM</td>
<td>HPV</td>
</tr>
<tr>
<td>Boys/young men</td>
<td>HPV</td>
</tr>
<tr>
<td>Women post-colposcopy</td>
<td>HPV</td>
</tr>
<tr>
<td>Elderly</td>
<td>Pneumococcal conjugate + polysaccharide</td>
</tr>
<tr>
<td>US</td>
<td>Pertussis and influenza</td>
</tr>
</tbody>
</table>
What would I currently recommend to patients?

Cost versus effectiveness: balance...not simple

- Rotavirus 2 doses 6 and 10 weeks
- Varicella one dose at a year of age
  - 2 dose from 9 months if at ECC
  - Adolescents/adults with no history of disease
- Meningococcal
  - Conjugate C infants 2+1, or single dose at 1 year
  - Conjugate C or quadrivalent at mid teenager
  - Polysaccharide cheaper, ok for short term protection
- Pertussis and influenza: pregnancy (funded)/cocoon
  - Occupational Tdap
- HPV boys
<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Protects against</th>
<th>Manufacturer</th>
<th>Price per dose</th>
<th>Number of doses required</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Adacel</strong></td>
<td>pertussis, tetanus and diphtheria</td>
<td>Sanofi-Pasteur</td>
<td>$25.00</td>
<td>1 dose as a booster&lt;br&gt;Can be offered to adults for pertussis protection</td>
<td></td>
</tr>
<tr>
<td><strong>Boostrix™</strong></td>
<td>pertussis, tetanus and diphtheria</td>
<td>GSK</td>
<td>$25.00</td>
<td>1 dose as a booster&lt;br&gt;Can be offered to adults for pertussis protection</td>
<td></td>
</tr>
<tr>
<td><strong>Gardasil®</strong></td>
<td>human papillomavirus 6,11,16 and 18</td>
<td>CSL</td>
<td>$128.50</td>
<td>3 doses for females 9-45 yrs and males 12-15 yrs&lt;br&gt;NB funded for girls born after 1.1.90</td>
<td></td>
</tr>
<tr>
<td><strong>Intanza®</strong></td>
<td>Influenza</td>
<td>Sanofi-Pasteur</td>
<td>$150/10</td>
<td>Intradermal vaccine</td>
<td></td>
</tr>
<tr>
<td><strong>IPOL®</strong></td>
<td>polio</td>
<td>Sanofi-Pasteur</td>
<td>$35.32</td>
<td>1 dose as a booster</td>
<td></td>
</tr>
<tr>
<td><strong>Meningitec®</strong></td>
<td>meningococcal disease group C</td>
<td>Pfizer (Wyeth)</td>
<td>$75.00</td>
<td>3 doses before 12 months or 1 dose if given after 12 months</td>
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</tr>
<tr>
<td><strong>NeisVac-C™</strong></td>
<td>Meningococcal disease group C</td>
<td>Baxter</td>
<td>$43.00</td>
<td>2 doses before 12 months or 1 dose after 12 months</td>
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<tr>
<td><strong>Menactra®</strong></td>
<td>Meningococcal disease groups A,C,Y, W135</td>
<td>Sanofi-aventis</td>
<td>$89.95</td>
<td>Single dose aged 2 – 55 years&lt;br&gt;Booster dose ever 5 years if risk continues</td>
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</tr>
<tr>
<td><strong>Mencevax™ ACWY</strong></td>
<td>meningococcal A, C, W135 and Y</td>
<td>GSK</td>
<td>$30.00</td>
<td>1 dose. Do not use before 2 years</td>
<td></td>
</tr>
<tr>
<td><strong>Menomune™ ACYW-135</strong></td>
<td>meningococcal A, C, W135 and Y</td>
<td>Sanofi-Pasteur</td>
<td>$30.00</td>
<td>1 dose. Do not use before 2 years</td>
<td></td>
</tr>
<tr>
<td><strong>Pneumovax®23</strong></td>
<td>pneumococcal disease</td>
<td>MSD</td>
<td>$40.00</td>
<td>1 dose. Do not use before 2 years</td>
<td></td>
</tr>
<tr>
<td><strong>Prevenar 13™</strong></td>
<td>pneumococcal disease</td>
<td>Pfizer (Wyeth)</td>
<td>$168.20</td>
<td>1 dose if given after 2 years&lt;br&gt;NB funded for children born after 1.1.08</td>
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<tr>
<td><strong>Rotarix®</strong></td>
<td>rotavirus</td>
<td>GSK</td>
<td>$80.00</td>
<td>2 doses (before 24 weeks)</td>
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<tr>
<td><strong>Varivax®</strong></td>
<td>varicella (chickenpox)</td>
<td>MSD</td>
<td>$50.00</td>
<td>1 dose 12 months-12 years or 2 doses if given from 13 years</td>
<td></td>
</tr>
<tr>
<td><strong>Varilrix™</strong></td>
<td>varicella (chickenpox)</td>
<td>GSK</td>
<td>$50.00</td>
<td>1 dose 9 months-12 years or 2 doses if given from 13 years</td>
<td></td>
</tr>
<tr>
<td><strong>Zostavax™</strong></td>
<td>Varicella (zoster)</td>
<td>MSD</td>
<td>$172.42</td>
<td>1 dose form 50 years</td>
<td></td>
</tr>
</tbody>
</table>
The Plunket Nurse has rung and asked you to talk to Jocelyn’s Mum – Jocelyn is now 10 weeks old and shares a bed with her Mum. Her mother says the whole family has always done this and she does not believe this is a problem.

• Is this a real problem?
• For which families?

NZDep Decile | Ethnicity | Maternal Age | Gest at Birth
---|---|---|---
1–2 | Asian/Indian | <20 Yrs | 20–36 Wks
3–4 | European | 20–24 Yrs | 37+ Wks
5–6 | Pacific | 25–29 Yrs |
7–8 | Māori | 30–34 Yrs |
9–10 | | 35+ Yrs |

NZCYES Source: Numerator: National Mortality Collection; Denominator: Birth Registration Dataset. Note: Rates are per 100,000; Rate Ratios are unadjusted; Ethnicity is Level 1 Prioritised
Thanks to Professor Ed Mitchell for the following slides/data
Confirmation that bed sharing is a risk for SIDS

<table>
<thead>
<tr>
<th>Study name</th>
<th>Statistics for each study</th>
<th>OR and 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>OR</td>
<td>Lower limit</td>
</tr>
<tr>
<td>Arnestad</td>
<td>1.66</td>
<td>0.57</td>
</tr>
<tr>
<td>Blair 1999</td>
<td>9.78</td>
<td>4.02</td>
</tr>
<tr>
<td>Blair 2009</td>
<td>21.77</td>
<td>3.79</td>
</tr>
<tr>
<td>Brook</td>
<td>2.90</td>
<td>0.75</td>
</tr>
<tr>
<td>Hauck</td>
<td>2.00</td>
<td>1.21</td>
</tr>
<tr>
<td>Klonoff-Cohen</td>
<td>1.21</td>
<td>0.59</td>
</tr>
<tr>
<td>Li</td>
<td>4.50</td>
<td>1.33</td>
</tr>
<tr>
<td>McGarvey</td>
<td>3.53</td>
<td>1.40</td>
</tr>
<tr>
<td>Mitchell</td>
<td>2.02</td>
<td>1.35</td>
</tr>
<tr>
<td>Tappin</td>
<td>3.36</td>
<td>1.67</td>
</tr>
<tr>
<td>Vennemann</td>
<td>2.73</td>
<td>1.34</td>
</tr>
<tr>
<td>Summary OR</td>
<td>2.89</td>
<td>1.99</td>
</tr>
</tbody>
</table>

- Vennemann et al, J Pediatrics, 2012
Interaction between maternal smoking and infant bed sharing

<table>
<thead>
<tr>
<th>Smoked</th>
<th>Bed sharing</th>
<th>AOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>No</td>
<td>1.0</td>
</tr>
<tr>
<td>Yes</td>
<td>No</td>
<td>1.4</td>
</tr>
<tr>
<td>No</td>
<td>Yes</td>
<td>1.7</td>
</tr>
<tr>
<td>Yes</td>
<td>Yes</td>
<td>3.9 (expected 2.4)</td>
</tr>
</tbody>
</table>

- Scragg et al, BMJ 1993
The role of alcohol in New Zealand

- Review of all infant deaths referred to the coroner in the Auckland region, 2000-2009
- Reviewed police records
- Total of 188 sudden unexpected deaths in infancy (SUDI)
- 121 occurred while bed sharing = 64%
- Alcohol was implicated in 17 = 14% of bed sharing deaths

Estimated SIDS rate per 1000 live births for selected groups
(mother 26-30yrs, 2nd child, birthweight 2500-3499g; SIDS rate=0.5/1000)

<table>
<thead>
<tr>
<th>Feeding</th>
<th>Risk factor</th>
<th>present Smoking</th>
<th>Room but not bed sharing</th>
<th>Bed sharing</th>
<th>Ratio of rates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breast</td>
<td>None</td>
<td>0.08</td>
<td>0.23</td>
<td>2.7</td>
<td></td>
</tr>
<tr>
<td>Bottle</td>
<td>None</td>
<td>0.13</td>
<td>0.34</td>
<td>2.7</td>
<td></td>
</tr>
<tr>
<td>Breast</td>
<td>Mother</td>
<td>0.13</td>
<td>1.27</td>
<td>9.7</td>
<td></td>
</tr>
<tr>
<td>Breast</td>
<td>Both parents</td>
<td>0.24</td>
<td>1.88</td>
<td>7.7</td>
<td></td>
</tr>
<tr>
<td>Bottle</td>
<td>Both parents</td>
<td>1.77</td>
<td>27.5</td>
<td>16.0</td>
<td></td>
</tr>
</tbody>
</table>

- If parents follow our SIDS prevention messages the SIDS rate is very low.
- If they bed share but otherwise do the right things the risk is increased almost 3 fold.
- The combination of parental smoking, bed sharing AND alcohol is lethal (2.8/100).
If you add other factors the risk becomes even higher:

- Birthweight of 2.25 kg
- Mother aged 18 years
- Maternal smoker
- Maternal obesity
- Partner smokes
- 2+ units of alcohol
- Bottle feeding
- Bed sharing

- Risk >100/1000, i.e. 10%
What might be the mechanism?

Studied 40 infants who regularly bed shared with their parent(s).

- Overnight video of the family and physiological monitoring of the infant was conducted in infants' homes.
- Infants usually slept beside the mother, separated from the father, facing the mother, with head at mothers' breast level, touching, or with mother cradling.
- 102 head-covering episodes observed in 22 infants, 80% were because of changes in adult sleep position.
- 68% of head uncovering was facilitated by the mother; half of these events were prompted by the infant.
- Uncovering relies on the ability of the mother to arouse with little stimulation. Mothers, perhaps impaired by alcohol, smoking, or overtiredness, may not be able to respond appropriately.
- Maternal smoking results in deficits in arousal mechanisms of infants, thus they may not prompt the mother to uncover the head.
Conclusions: Bed sharing and SIDS

The only group shown NOT to be at increased risk is infants 3+ months of age, not preterm or low birthweight, with non-smoking parents and no parental alcohol or recreational drugs use and not sleeping on a sofa.
Thanks to Dr Nick Baker for use of his slides presented at the Mokopuna Ora conference in July 2013

Data from the NZ Child and Youth Mortality Review Committee
Mortality (%) in infants aged 28 days to < 1 yr
New Zealand 2006–2010 (n=683 deaths)

- Congenital anomalies: 18.2%
- Certain conditions originating in the perinatal period: 11.4%
- Diseases of the respiratory system: 8.5%
- Infectious and parasitic disease: 6.1%
- Diseases of the nervous system: 3.0%
- Missing data: 1.7%
- Other Medical: 7.4%
- Assault: 1.1%
- Unintentional injury: 2.9%
- Other Medical: 7.4%
- Assault: 1.1%
- Unintentional injury: 2.9%

- SUDI: 39.8%
- R95 SIDS: 18.7%
- W75 Accidental suffocation and strangulation in bed: 15.9%
- R99 Other ill-defined and unspecified causes: 4.9%
- Other: 0.3%
Location of Death

- Bed and mattress arrangements $n = 32$ (64%)
  - mattresses on floor, bunk beds, beds pulled together, bean bag, tri-pillow, mixtures, single mattress two people
- Couch or chair $n = 9$ (18%)
- Cot $n = 7$ (14%) – six faulty cots
  - gaps round mattresses
  - faulty cots sides
    - slipped through and trapped
    - wedged in gap by sagging cot side
Circumstances of Death

• domestic chaos, mobile families
  – safe sleep not a high priority
• apparent lack of knowledge about risks and safety
  – “stunned amazement” that baby was at risk
• shared sleep surface n = 34 (68%)
• Illness at time of death n = 8 (16%)
• pillows, bean bag, “complex” bedding
• unaccustomed caregivers
Jacinta is in for the fourth time this year with another URTI

You send her on her way again with advice re fluids and use of panadol prn only, if she is miserable/in pain

– She is three years old, her Mum is a sole parent living in private rental house.

– Is there anything we can do to improve her situation?
• Household smoking
• Condition of house
• Childhood nutrition
• Stress and recurrent illness
July 2013

The largest-ever worldwide study linking damp housing to respiratory and allergy problems paints a grim picture for New Zealand children....

The study involved 46,000 children in 20 countries and provides extensive evidence that living in damp or mouldy homes is bad for our children's health: associated with recurrent runny noses, chesty coughs, wheeziness, and eczema. Furthermore, if a child already has asthma this is made more severe by dampness and mould in the home.

Ref: Weinmayr G et al (ISAAC Phase Two) Dampness and moulds in relation to respiratory and allergic symptoms in children: results from Phase Two of the international study of Asthma and Allergies in Childhood Clinical and Experimental Allergy 43, 762-774
• Erina is a previously well 8 months old, she had had a cough, runny nose and wheezy for 3 days, it has got worse overnight. Mum was worried she would stop breathing in the night

– What more do we want to know
– When would we send her to hospital
• A – appearance (airway)
  – Mental status, muscle tone, body position
• B – breathing
  – Visible movement, (chest/abdo), effort – normal/increased
  – Accessory muscle /recession
  – Count the RR
• C – colour (circulation)
  – ?tachycardia
<table>
<thead>
<tr>
<th>Age</th>
<th>Normal respiratory rates</th>
<th>Normal pulse rate</th>
<th>Systolic BP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Newborns and infants</td>
<td>Up to 6 months old</td>
<td>30-60 breaths/min</td>
<td>100 – 160</td>
</tr>
<tr>
<td>Infants</td>
<td>6 to 12 months old</td>
<td>24-30 breaths/min</td>
<td>100 - 160</td>
</tr>
<tr>
<td>Toddlers and children</td>
<td>1 to 5 years old</td>
<td>20-30 breaths/min</td>
<td>90 - 150</td>
</tr>
<tr>
<td>Children</td>
<td>6 to 12 years</td>
<td>12-20 breaths/min</td>
<td>70 – 120</td>
</tr>
</tbody>
</table>

Refs: health.msn.com and health.ny.gov/professional.ems.education