Mana Kidz – School Communities as a Locus for a new Nurse-Led model of Care.

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Mana Kidz, National Hauora Coalition
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what we’ll cover today

outline

01 national and local overview of the rheumatic fever prevention programme
02 acute rheumatic fever in New Zealand
03 mana kidz programme
04 workforce development
05 work undertaken so far
06 outcomes for the programme
01 acute rheumatic fever in NZ
Acute Rheumatic Fever (ARF)

The basics:

- ARF is an autoimmune disease
- It's caused by an untreated Group A Streptococci (GAS) pharyngitis
- It can be prevented by correct treatment of GAS pharyngitis
- It can lead to Rheumatic Heart Disease (RHD)
- RHD causes heart failure and can lead to open heart surgery and premature death
- Large costs to whānau and healthcare system (annual cost of $12 million in NZ (2000-2009))

how does ARF affect the body

Acute rheumatic fever (ARF) affects a range of tissues in the body including:

- Brain: chorea
- Joints: arthritis
- Heart: inflamed/damaged valves
- Skin: erythema marginatum (rash) and subcutaneous nodules (lumps under the skin)

It may also cause a fever.
preventing ARF

Primordial
- Warm and healthy homes
- Reducing overcrowding
- Improve socio-economic status
- Improving Healthcare access

Primary
- Correct treatment of GAS sore throat
  - Throat swabbing = gold standard
  - Heart Foundation NZ guidelines

Secondary
- Reducing recurrent attacks or ARF
- Stop recolonisation/reinfection GAS pharyngitis
- Regular antibiotic prophylaxis
global distribution of ARF

Mean Incidence of ARF

- **Indigenous NZ/Australia**: 375
- **China**: 20
- **Eastern Europe**: 12
- **Middle East/North Africa**: 15
- **Latin America**: 19
- **Asia Other**: 20
- **South Central Asia**: 52
- **Africa**: 15

ARF cases per 100,000
ARF in Aotearoa

Although ARF is now rare in industrialised countries, it is a significant cause of disease among Māori and Pacific children in New Zealand.

Rates of ARF for 5-14 year old children are 20 or 40 fold higher respectively for those self-identified as Māori or Pacific than non-Māori/non-Pacific.

Rheumatic fever is unevenly distributed in New Zealand, with most cases recorded in the North Island.
acute rheumatic fever in new zealand

different rates across age range

ARF admissions per 100,000 for 0 – 24 year olds in New Zealand 2006-2010.

Adapted from NZCYES, 2012 data for NZ 2006-2010
ARF distribution by Ethnicity

First episode rheumatic fever hospitalisation rate (per 100,000 total population) 2002-2014.

Source: Ministry of Health 2015
02 rheumatic fever prevention programme
rheumatic fever prevention programme

**government response**

rheumatic fever as a part of the better public service initiative

more than $65 million over 6 years

Stop it: prevent transmission of Strep A sore throats

Treat it: treat Strep A throats quickly and effectively
goals of national RFPP

- to achieve equity of incidence and outcomes of rheumatic fever between Maori and Pacific children and other NZ children

- “by 2017, to reduce new episodes of rheumatic fever by two thirds (from 4.2 per 100,000 to 1.4 cases per 100,000 population per year”)
rheumatic fever prevention programme

new zealand trends

Source: Ministry of Health 2015
rheumatic fever prevention programme

counties manukau

Rheumatic fever prevention in CMH

Prevent the transmission of Strep A sore throats

Treat Strep A sore throats quickly and effectively

AWHI  PES  Mana Kidz  Sore throat clinics  Awareness raising

65,424 “High risk”
Aged 4-10 years
Māori or Pacific or Q5

Source: Ministry of Health 2015
rheumatic fever prevention programme

rheumatic fever prevention and more...

“The launch of the rheumatic fever prevention programme has provided a wonderful opportunity for the re-orientation of school based health services”

Source: Ministry of Health 2015
rheumatic fever prevention programme

child health alliance forum

Source: Ministry of Health 2015
03 mana kidz
mana kidz

61 decile 1-3 schools; 25,000 children that have daily access to sore throat services

• Comprehensive school-based health service
• Health teams at school everyday
• Free assessment and treatment – GAS and Skin infections
• Child health assessments include hearing and vision, child protection, new entrant immunisations, housing referrals, health education and promotion
mana kidz

section 03
aims of the programme

- To increase the number of health assessments and treatment of targeted conditions (Group A beta-haemolytic streptococcal sore throats and skin infections) in primary and intermediate school aged children. To also address child health conditions traditionally managed by Public Health nurses.
- To increase the health knowledge of all members of the school community.
- To increase health literacy of all members of the school community.
A key component of the national Rheumatic Fever Prevention Programme is the provision of sore throat assessment and treatment services in primary and intermediate schools.

The Health teams are made up of Registered Nurses and Community (Whanau) Support Workers.

Snapshot

In Counties Manukau alone, 25,000 children have daily access to sore throat services. In 2014, over 150,000 throat swabs were taken and more than 12,000 children received free treatment for GAS+.
04 workforce development
Professional Development
Antibiotics for Routine Group A Streptococcal (GAS) Pharyngitis

Standard treatment for a patient's first or second case of confirmed group A streptococcal (GAS) pharyngitis.

<table>
<thead>
<tr>
<th>Antibiotic</th>
<th>Route</th>
<th>Dose</th>
<th>Duration</th>
<th>IDSA Grade 2015*</th>
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<tbody>
<tr>
<td>Penicillin*</td>
<td>PO</td>
<td>Children &lt;20kg: 250mg twice or three times daily; Adolescents &amp; Adults ≥20kg: 500mg twice or three times daily</td>
<td>10 days</td>
<td>Strong, High</td>
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<tr>
<td></td>
<td></td>
<td>Weight &lt;50kg: 250mg once daily; Weight ≥50kg: 500mg once daily</td>
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<tr>
<td>Amoxicillin</td>
<td>PO</td>
<td>Once daily</td>
<td>10 days</td>
<td>Strong, High</td>
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If concern about allergic (e.g., rash) or anaaphylactic (e.g., throat swelling) response to beta-lactams:

<table>
<thead>
<tr>
<th>Antistreptococcal Penicillin</th>
<th>PO</th>
<th>Children, Adolescents, Adults</th>
<th>10 days</th>
<th>Unavailable in the USA</th>
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For people on benzathine penicillin IM prophylaxis who are GAS positive:

Treating a 10-day course of oral penicillin or amoxicillin.

Check adherence to prophylaxis programme. Serum penicillin levels will be falling by week three and four post IM IM / IM benzathine penicillin injection.

Section 04

From: Heart Foundation New Zealand Guidelines for Rheumatic Fever sore throat management (2014)
05 work undertaken
throat swabbing

Most sore throats are caused by viruses
Only a throat swab can tell if the group A streptococcal bacteria is present
If a Maori or Pacific child or young person complains of a sore throat make sure they have a throat swab taken
Skin Conditions

- Skin infection is the commonest medical cause of hospitalisation in young children
- Evidence based practical protocols for nurses to use to assess and treat skin infections in schools
- Nurse led clinics in schools provide a means for early treatment that is easy to access
- Provision of antibiotics under delegated standing orders
work undertaken

child health

Hearing and Vision

Immunisations

Health and Social referrals

Multidisciplinary team meetings

Child Protection
challenges

- Antibiotic adherence
- Transience
Antibiotic Adherence Trials

work undertaken

Directly observed therapy
RN giving the patient antibiotics each day within the school setting

Blisters packs
A pre-made pack with capsules/tabs in 10 compartments

Text reminders
A daily text reminder for the duration of the course (10 days).

IM Bicillin
A once-off IM bicillin injection.

Health literacy
Tools, knowledge and resources for health professionals
work undertaken

aim of the trial

To evaluate the feasibility of directly observed therapy (DOT) in a school based health clinic and its impact on medication adherence within the school community. Specifically;

• the impact on the health team’s workload
• the acceptability of the process for stakeholders
• any other unknown factors that may influence a wider implementation
how it works

Nurse administers medication daily during school days

Weekend doses administered by whānau

Empty weekend packets returned to nurse
was it acceptable?

<table>
<thead>
<tr>
<th>Parents</th>
<th>Health professionals</th>
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<tbody>
<tr>
<td>99% of parents were happy with the way the medication was administered for DOT</td>
<td>90% would recommend DOT as a treatment option, for children that previously had poor adherence</td>
</tr>
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<td>95% of parents would be happy to use DOT again</td>
<td></td>
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</tbody>
</table>

work undertaken
The percentage of GAS+ post-treatment swabs following DOT was 4.6% (compared to control group of 21.4%).
Intramuscular Injection Benzathine Penicillan

aim of the trial:

We wanted to test two key aspects;

1. Acceptability to stakeholders of IM Bicillin as a treatment option

2. Monitor for unintended consequences (especially reduction in self-identification) following the introduction of IM Bicillin

The trial would inform discussion as to whether IM Penicillin should be used more widely as treatment for GAS sore throats with a view to reducing strep load and rheumatic fever risk in vulnerable communities
work undertaken

was it acceptable?

Parents

- 83% of parents were happy with the way the IM bicillin was administered

Health professionals

- 81% of parents would choose to have an IM bicillin again
- 86% felt confident recommending IM bicillin
- 100% felt confident administering IM bicillin
work undertaken

health literacy

- Partnership between Mana Kidz and Workbase NZ
- To enhance the way in which health professionals communicate with families
06 outcomes
outcomes

consent

<table>
<thead>
<tr>
<th></th>
<th>September</th>
<th>October</th>
<th>November</th>
<th>December</th>
<th>January</th>
<th>February</th>
<th>March</th>
<th>April</th>
<th>May</th>
<th>June</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>97%</td>
<td>96%</td>
<td>95%</td>
<td>96%</td>
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</table>
## Principals Feedback

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Question</th>
<th>Feedback</th>
</tr>
</thead>
<tbody>
<tr>
<td>93%</td>
<td>Has the MK team engaged well with your school population?</td>
<td>Very well engaged</td>
</tr>
<tr>
<td>96%</td>
<td>Do you think the MK team have made an impact in improving the health of students?</td>
<td>Noticeable impact</td>
</tr>
<tr>
<td>88%</td>
<td>Do you feel that this service is making an impact upon the school community?</td>
<td>Yes</td>
</tr>
</tbody>
</table>

- “a service of immense value to addressing issues of poor health in our school and community”
- “a fantastic team, willing to go over and above, to ensure the well being of students and their families”
- “[WSW] is awesome. She has formed great relationships with our students and staff. This makes a big difference”
- “Mana Kidz health professional are considered part of our [school] whanau. They engage well with staff and students, are highly professional and pleasant to work with. The Mana Kidz programme is going really well at our school and this success is due to the way they have built positive relationships with staff, students and our whanau. Go [RN] and [WSW]! The system is very smooth.”
- “Yes [this service is making an impact upon the school community]. If children are well this leads to improved attendance and therefore improved educational outcomes!”
evaluation summary

- **August-November 2014**
- **Covered service delivery, outcomes, value for money and learnings about effectiveness**

**Methods:**
- **DATA**: programme, DHB, epidemiological
- Narrative feedback from parents/whanau, children, nurses, WSW, school staff, provider management and programme funders

- **Robust external evaluation**
outcomes

- “Mana Kidz makes a significant difference to children’s health”
- “Early indications are consistent with the programme having its intended effect”

<table>
<thead>
<tr>
<th>% Kids with GAS+</th>
<th>Rheumatic fever</th>
<th>ASH for skin infections</th>
</tr>
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<tbody>
<tr>
<td><img src="image1" alt="Graph" /></td>
<td><img src="image2" alt="Graph" /></td>
<td><img src="image3" alt="Graph" /></td>
</tr>
</tbody>
</table>
things we can improve on

“Mana Kidz is an important and effective programme that is making a substantial contribution to healthcare for vulnerable children”

- Health Promotion
- Data
conclusion

Disease Targeting

Child Centred-ness

Family/Whanau centred-ness
thank you

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