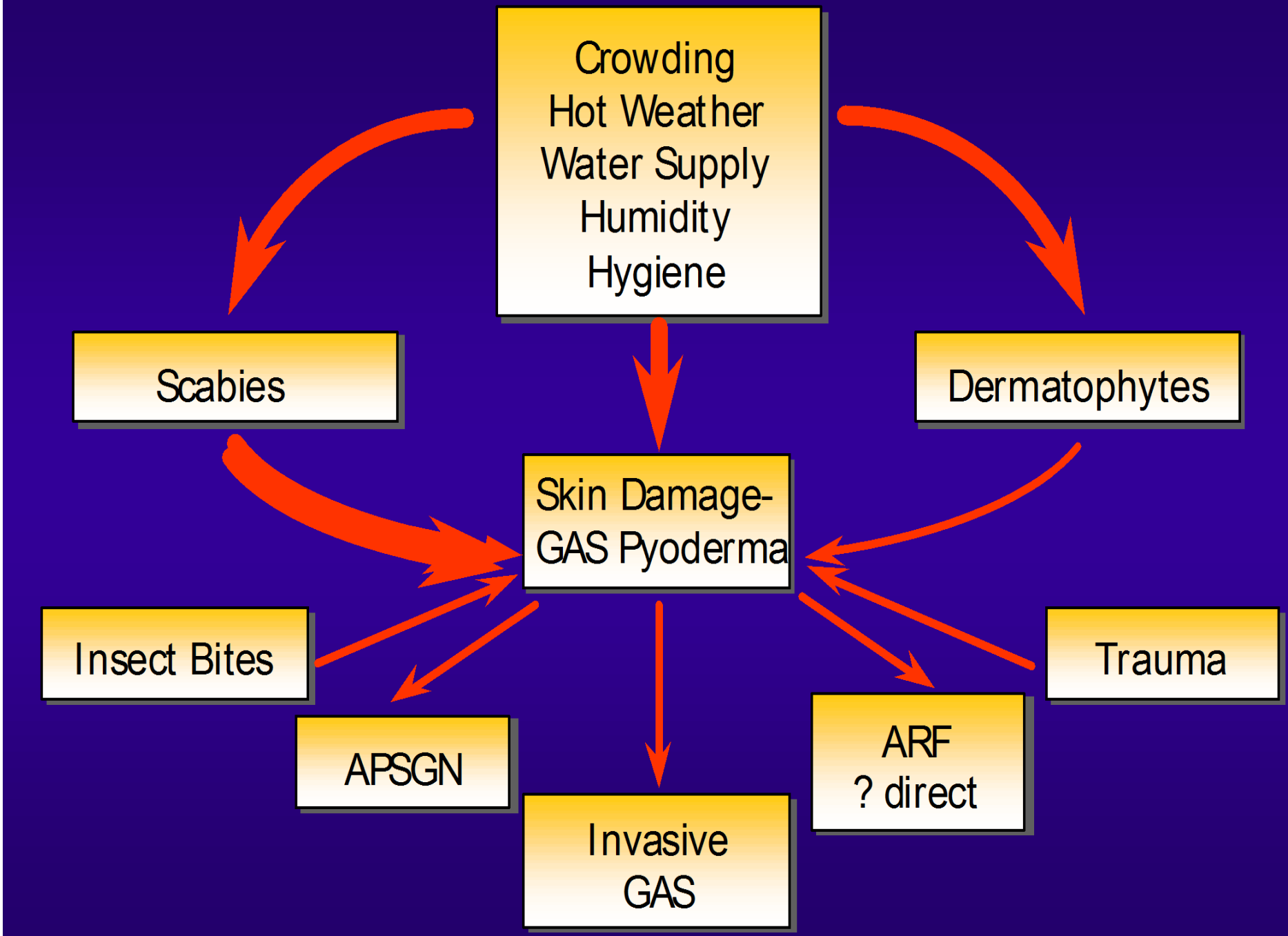
Scabies MDAs in Remote Indigenous Communities in NT, Australia

Bart Currie

Infectious Diseases Department, Royal Darwin Hospital

Global and Tropical Health Division, Menzies

Northern Territory Medical Program, Flinders & Charles Darwin Universities


Crowding
Hot Weather
Water Supply
Humidity
Hygiene
Scabies
Dermatophytes
Skin Damage-
GAS Pyoderma
Insect Bites
Trauma
APSGN
ARF
? direct
Invasive
GAS

Extreme burden of scabies & skin sores in infants
2 remote Top End Communities; 2002-2005

Fig. 1. **Presentations for scabies in two remote communities in East Arnhemland, January 2002 to September 2005**[a]

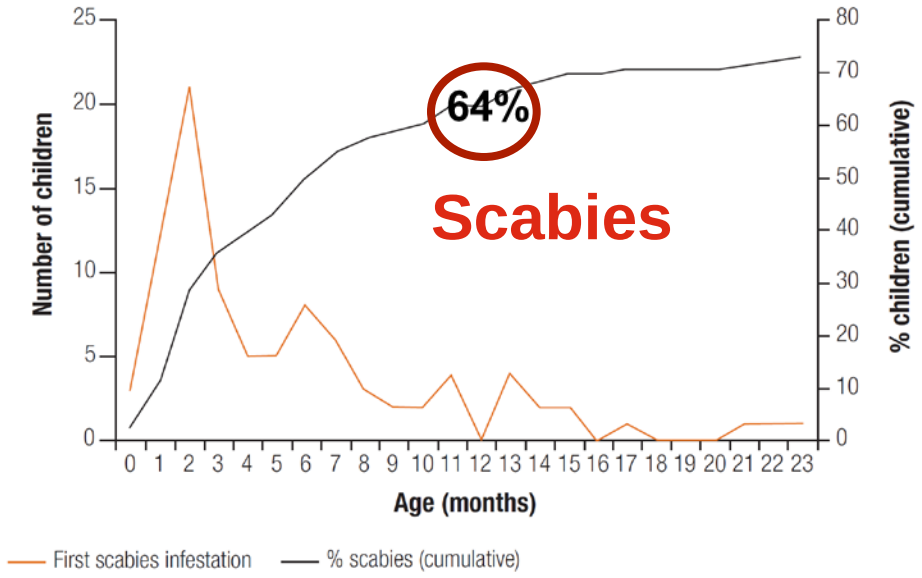
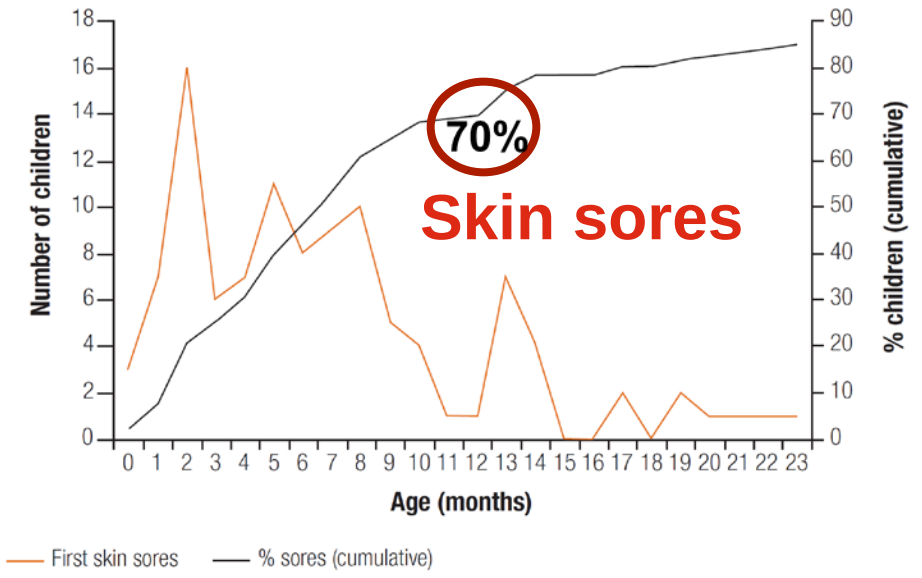


Fig. 2. **Presentations for skin sores in two remote communities in East Arnhemland, January 2002 to September 2005**[a]



Clucas D et al.

Bull WHO 2008;86:275–81

The first scabies MDA

Lancet. 1991 Apr 27;337(8748):1016-8.

Community control of scabies: a model based on use of permethrin cream.

Taplin D[1], Porcelain SL, Meinking TL, Athey RL, Chen JA, Castillero PM, Sanchez R.

- Kuna Indians in San Blas islands of Panama
- Topical 5% permethrin cream (newly available)
- MDA to whole of community x 1
- Scabies prevalence fell from 33% to <1%
- Dramatic decrease also in skin sores (pyoderma)
- Sustained at scabies rates <1.5% for over 3 years
- Critical issues
  - Continued surveillance; Tx of newly introduced cases coming to the islands; maintaining the drug supply
- Program control lost after 1989 US invasion of Panama
  - rate rose to 12% within 3 months of the invasion

For 18 years treatment with lindane or crotamiton products has failed to stem the epidemic of scabies among the Kuna Indians in the San Blas islands of the Republic of Panama. Permethrin 5% cream was introduced as the only treatment in a programme to control scabies on an island of 756 inhabitants and involving workers recruited locally. Prevalence fell from 33% to less than 1% after every person was treated. As long as continued surveillance and treatment of newly introduced cases was maintained, prevalence of scabies remained below 1.5% for over 3 years. When supply of medication was interrupted for 3 weeks, prevalence rose to 3.6%. When control was lost after the US invasion of Panama, prevalence rose to 12% within 3 months. Bacterial skin infections decreased dramatically when scabies was controlled. Permethrin is safe and effective even in areas where this disease has become resistant to lindane

The first Australian scabies MDA

Pediatr Infect Dis J. 1997 May;16(5):494-9.

Success of a scabies control program in an Australian aboriginal community.

Carapetis JR[1], Connors C, Yarmirr D, Krause V, Currie BJ.

- Remote NT island Indigenous community
- Topical 5% permethrin cream (newly available in Australia)
- MDA “offered” to whole community x 1
- Scabies prevalence fell from 29% to <10%
- Dramatic decrease also in skin sores (initially 69% in kids)
- Sustained at scabies rates <10% for 2 years
- Critical issues
  - Continued surveillance; Tx of newly introduced cases coming to the islands;
- Program control lost after…… staff turnover and.....

Wadeye NT Australia MDA 2000

- 3 months education lead in
  - "healthy houses make healthy skin makes healthy kids"
- Single day of community houses clean up and MDA topical 5% permethrin to whole community
- Screening of children ≤ 5yo for scabies, skin sores
  - Prior, 6w post Tx then 3 monthly to 15 months
- Scabies cases and households re-treated after 1w
- Skin sores treated with benzathine penicillin G IM
- Repeat community house clean up day at 12 months
  - No further MDA, just individual and contact Tx

Wadeye MDA 2000
Scabies and pyoderma in children ≤ 5yo

	Pre MDA	6w	6m	12m	15m
Scabies	35%	3%	4%	9%	12%
Pyoderma with scabies	12%	1%	1%	1%	2%
Pyoderma not scabies	11%	4%	3%	13%	2%

Wong LC et al. *Med J Aust 2001;175:367-70*

Wong LC et al. *Australas J Dermatol 2002;45:274-7*

Australasian Journal of Dermatology (2002) **43**, 274–277

RESEARCH REPORT

Factors supporting sustainability of a community-based scabies control program

Li-Chuen Wong,[1] Beth Amega,[3] Ruth Barker,[2] Christine Connors,[4] Mary Elizabeth Dulla,[5] Angela Ninnal,[5] Margaret Mary Cumaiyi,[5] Loyola Kolumboort[5] and Bart J Currie[6]

[1]Skin and Cancer Foundation, Sydney, [2]The Children's Hospital at Westmead, Westmead, New South Wales, [3]Wadeye/Port Keats Community Health Centre and [5]Port Keats Community, Port Keats, [4]Co-operative Research Centre for Aboriginal and Tropical Health and Department of Health and Community Services and [6]Northern Territory Clinical School and Menzies School of Health Research, Darwin, Northern Territory, Australia

Figure 1 Logo for 'Scabies Day', June 2001, created by the well-known local artist Timothy Dumoo (reproduced with the artist's permission).

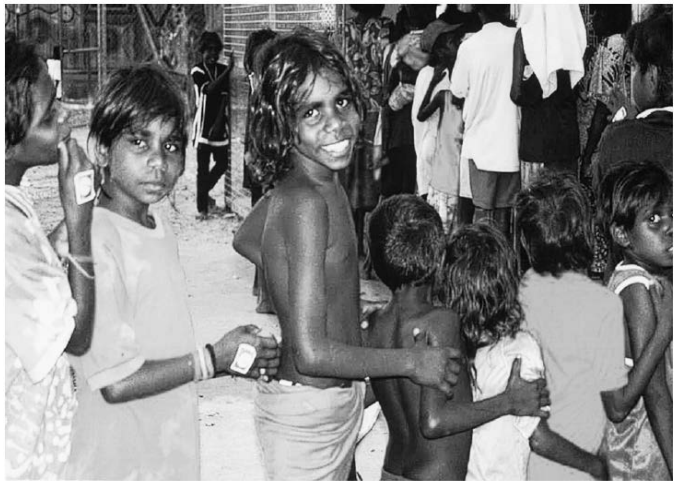


Figure 2 Children with 'antiscabies' sticker: ticket of admission to the community barbecue (published with the permission of the community elders).

SUMMARY

Scabies remains a major problem in Aboriginal communities within the Northern Territory of Australia. Secondary skin infection with Group A streptococcus (GAS) is very common and post-streptococcal disease rates remain high. Treating families in isolation will have only limited success, as reinfection frequently occurs as a result of the high levels of movement between households and communities. We describe the results of a successful community intervention to reduce scabies and GAS skin infection in one of the largest Aboriginal communities in the Northern Territory, 15 months post-intervention, and we discuss factors that have led to the success and sustainability of the program.

Community involvement and initiative was achieved as part of this 'Healthy Skin' intervention. This included local council initiatives such as the monthly 'best backyard' competition, with prizes such as a washing machine.

rate. Similar programs have been tried in other Aboriginal communities with variable results.[2,11,12] The majority of these programs have been successful in achieving an initial reduction in scabies and pyoderma. However, the sustainability of these programs has been problematic, with a rise in scabies prevalence back towards pre-intervention levels within 1 year in some cases. We believe the success of our program relies on three factors: regular rescreening, community education and community involvement.

Although our program has been successful in reducing the prevalence of scabies in this community, the lower rates may be unsustainable unless all related communities within the area achieve a similar reduction in scabies prevalence.

Ivermectin MDA NT Australia 2010-2011

- Remote NT island Indigenous community
- 2 MDAs 1 year apart
- Oral ivermectin 200ug/kg to those ≥15kg
- Topical 5% permethrin to those <15kg
- Repeat Tx at 2-3w if scabies
- Follow up (and Tx if scabies) at 6 and 18 months
- Standard Tx of skin sores – mostly benzathine pen G

	Pre MDA	6m
Scabies	4%	1%

Ivermectin MDA NT Australia 2010-2011

- Remote NT island Indigenous community
- 2 MDAs 1 year apart
- Oral ivermectin 200ug/kg to those ≥15kg
- Topical 5% permethrin to those <15kg
- Repeat Tx at 2-3w if scabies
- Follow up (and Tx if scabies) at 6 and 18 months
- Standard Tx of skin sores – mostly benzathine pen G

	Pre MDA	6m	12m	18m
Scabies	4%	1%	9%	3%

- "Outbreak" at 12 months prior to 2nd MDA
- Scabies re-introduced by population mobility:
  - including person with ?crusted scabies; required extensive contact tracing and Tx

PLOS | NEGLECTED TROPICAL DISEASES

October 30, 2015

RESEARCH ARTICLE

Impact of an Ivermectin Mass Drug Administration on Scabies Prevalence in a Remote Australian Aboriginal Community

Thérèse M. Kearns[1]*, Richard Speare[2], Allen C. Cheng[3], James McCarthy[4], Jonathan R. Carapetis[5], Deborah C. Holt[1], Bart J. Currie[1], Wendy Page[6], Jennifer Shield[7], Roslyn Gundjirryirr[1], Leanne Bundhala[1], Eddie Mulholland[6], Mark Chatfield[1], Ross M. Andrews[1]

The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812 DECEMBER 10, 2015 VOL. 373 NO. 24

Mass Drug Administration for Scabies Control in a Population with Endemic Disease

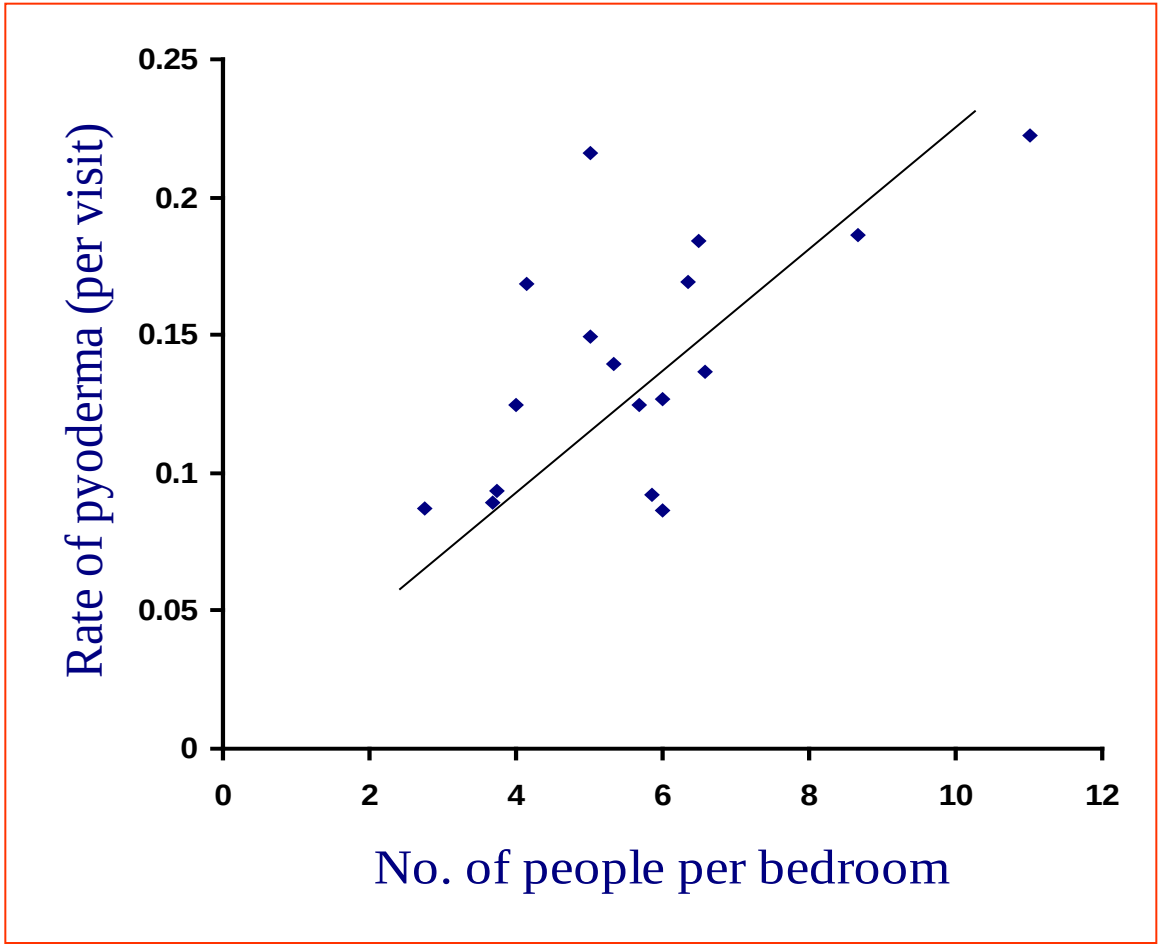
Lucia Romani, M.Soc.Dev., Margot J. Whitfeld, M.B., B.S., Josefa Koroivueta, M.B., B.S., Mike Kama, M.B., B.S., Handan Wand, Ph.D., Lisi Tikoduadua, M.B., B.S., Meciusela Tuicakau, M.B., B.S., Aminiasi Koroi, B.A., Ross Andrews, Ph.D., John M. Kaldor, Ph.D., and Andrew C. Steer, Ph.D.

Primordial prevention of scabies and pyoderma

- Housing
- Education
- Employment
- Communications
- Transport & access to services

McDonald E et al. BMC Public Health 2008; 8:153
McDonald M et al. Clin Infect Dis 2006;43:683-9
Bailie R et al. BMC Public Health 2010; 10:147

Pyoderma and crowding



McDonald M et al. Clin Infect Dis 2006;43:683-9
Bailie R et al. BMC Public Health 2010; 10:147