

Epidemiology of Skin Conditions – the story so far

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DISEASES



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Overview

- Impetigo
- Scabies
- Crusted Scabies



Impetigo



- Bacterial infection of superficial skin
- GAS and *S aureus*
- LL > UL
- Painful, itchy, inflammatory



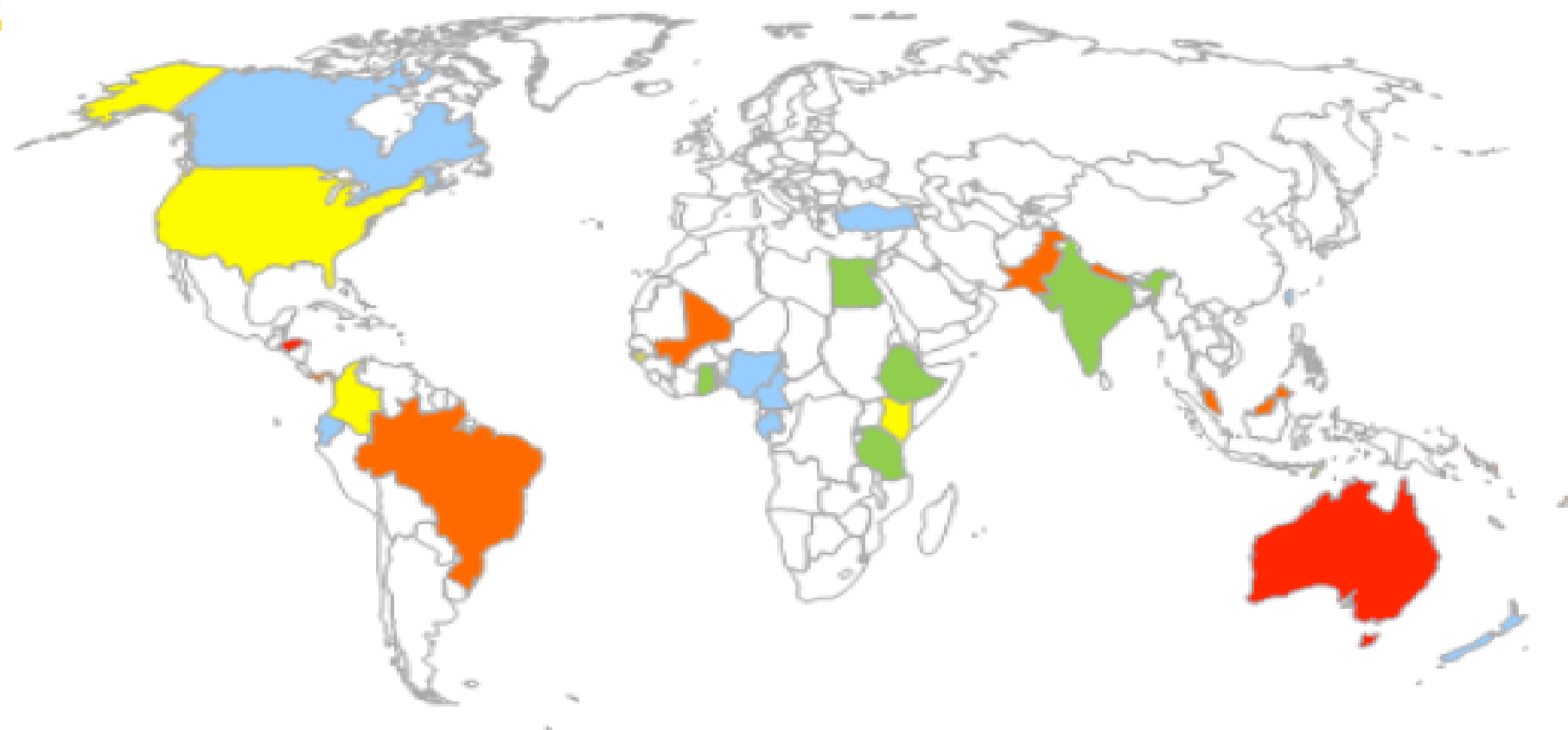
Impetigo: Global Burden

- 89 studies over 45 y
- >145 000 children
- Median prevalence 12% (IQR 4 – 19%)
- Pooled prevalence 17% (IQR 13 – 21%)
- > 162 million children with impetigo at any one time

The Global Epidemiology of Impetigo: A Systematic Review of the Population Prevalence of Impetigo and Pyoderma

Asha C. Bowen^{1,2,3*}, Antoine Mahé⁴, Roderick J. Hay^{5,6}, Ross M. Andrews¹, Andrew C. Steer^{7,8}, Steven Y. C. Tong^{1,9}, Jonathan R. Carapetis^{2,3}

Figure 2: Map of countries with available population-based studies of impetigo prevalence, highlighted and colour coded by median prevalence of impetigo.



Coding of median prevalence 0–5% blue, 5.1–10% green, 10.1–15% yellow, 15.1–20% orange and >20% red. Source: Map from powerpointworldmaps.com (accessed 14.10.2014).

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Table 3. Estimates of children with impetigo by regions of the world with a vailable data*.

Region	Population in 2012 under 15 years	Median impetigo prevalence in children	Estimated number of children with impetigo
Africa	424,072,000	7% (IQR 4.1–12.3%)	29,685,040
Asia	1,060,076,000	7.3% (IQR 3.0–16.1%)	77,385,548
Oceania*	3,653,000	29.7% (IQR 14.7–42.0%)	1,084,941
Latin American & Caribbean	167,654,000	15.5% (IQR 12.2–20.8%)	25,986,370
TOTAL	1,655,455,000	N/A	134,141,899

*Studies from Australia, New Zealand and North America excluded as all these studies were conducted in small, impoverished populations within these countries that may not reflect the overall burden of impetigo for the childhood population.



Impetigo: Australian burden

- 10 studies, all remote Aboriginal populations
- Median prevalence 45% (IQR 34 – 49%)
- 16,000 children with impetigo at any one time in remote Qld, NT and WA
- Unchanged over 20 years
- Top 3 reason for clinic visit NT & WA

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Indigenous Australian children

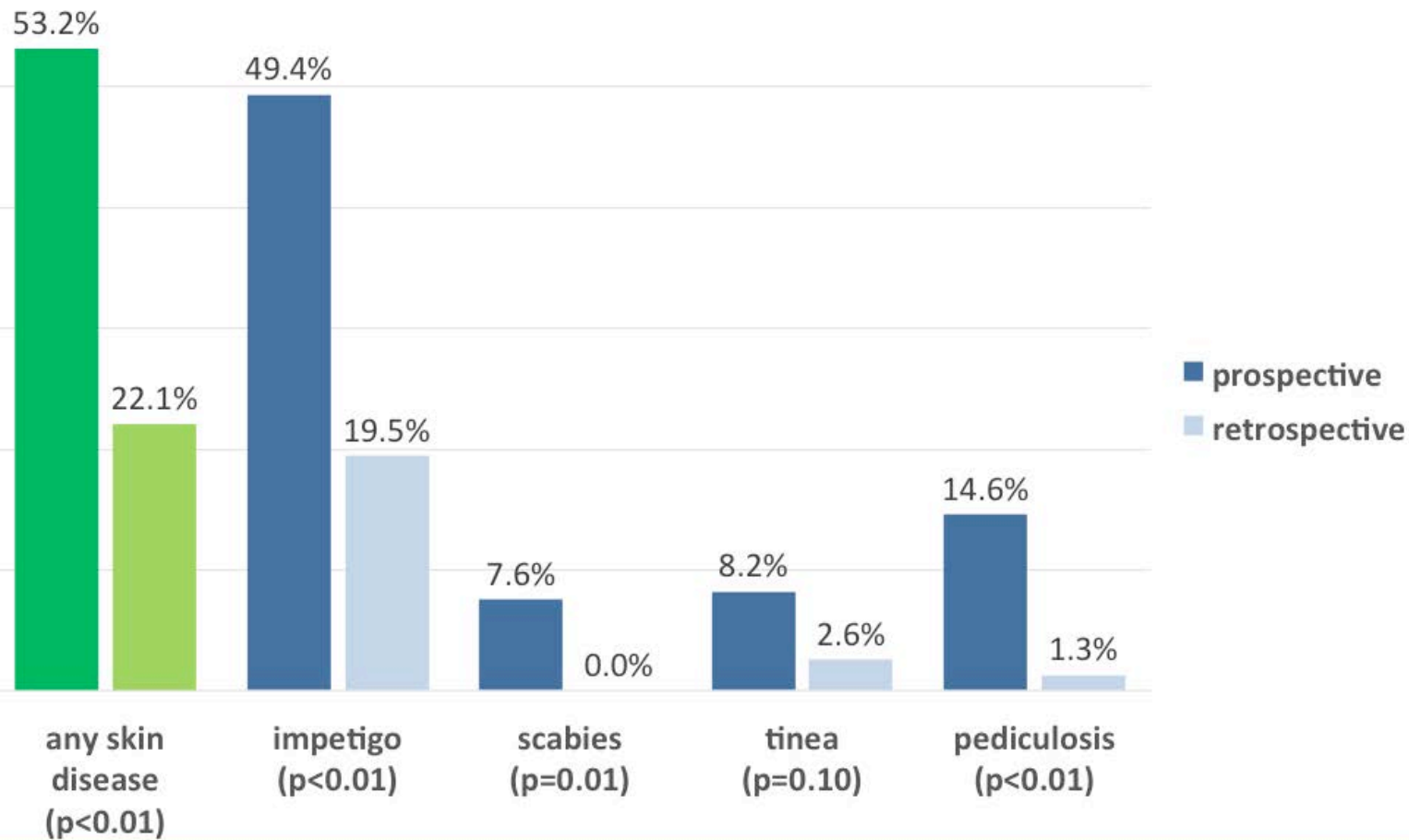
Year	Region	Impetigo (0-15y)	Scabies (0-15y)
1990	Qld	43%	-
1992	NT	17%	-
1993	Qld	34%	-
1994	NT	48%	-
1994	NT	69%	29%
1995	NT	90%	23%
2000	NT	23%	35%
2000	WA	66%	5%
2004	NT	46%	16%
2009	NT	40%	-
Mean		48%	22%

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SCAB-Heal: 'Normalisation'

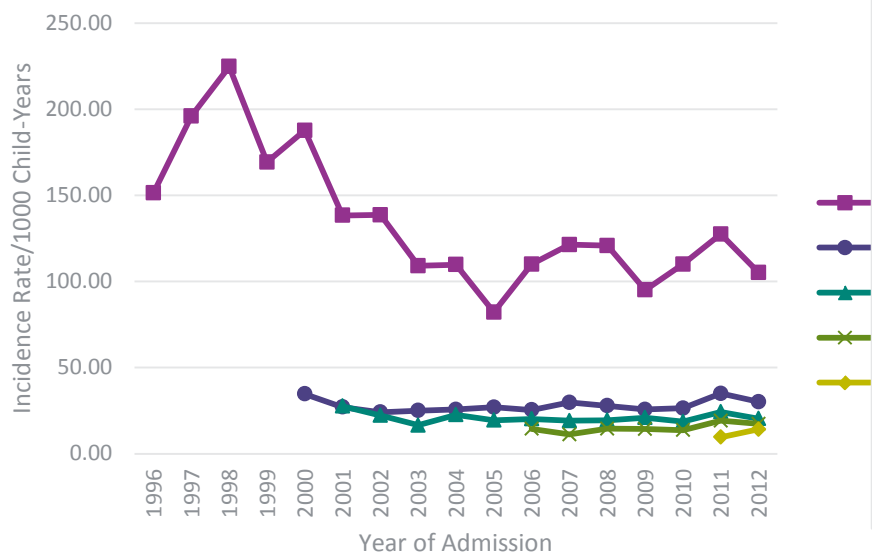
Figure B. Prevalence of Skin Disease in Prospective vs Retrospective Case Review



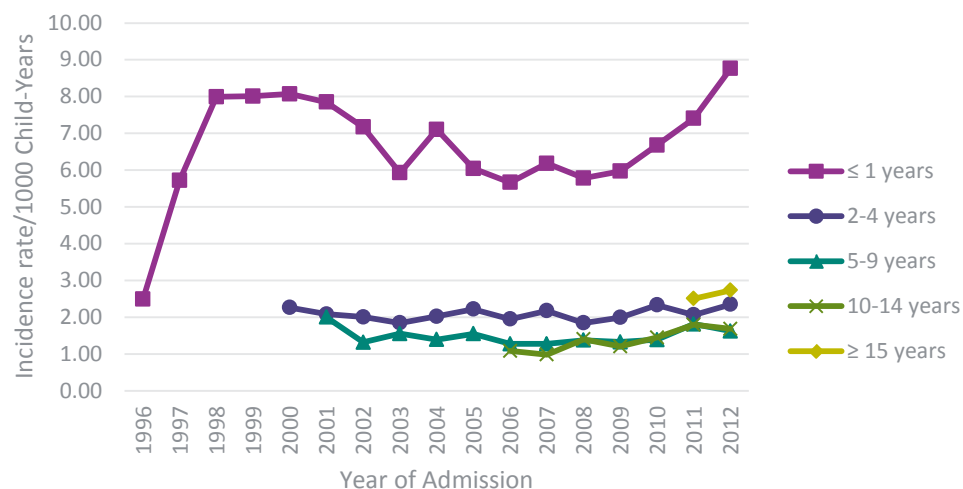
Yeoh,
Anderson
et al



Skin Infections Admission Rates in WA 1996-2012
Indigenous Children



Admission Rates for Non-Indigenous Children with
Skin Infections in WA 1996-2012



- 14% children < 1 yo in Kimberley admitted to hospital for SSTI
- 20 fold difference between Aboriginal and non-Aboriginal children

Scabies



- Parasitic infection of the superficial skin
- Painful, itchy +++, inflammatory
 - Sleeplessness, poor concentration, missed school
- UL > LL

Scabies: Global burden

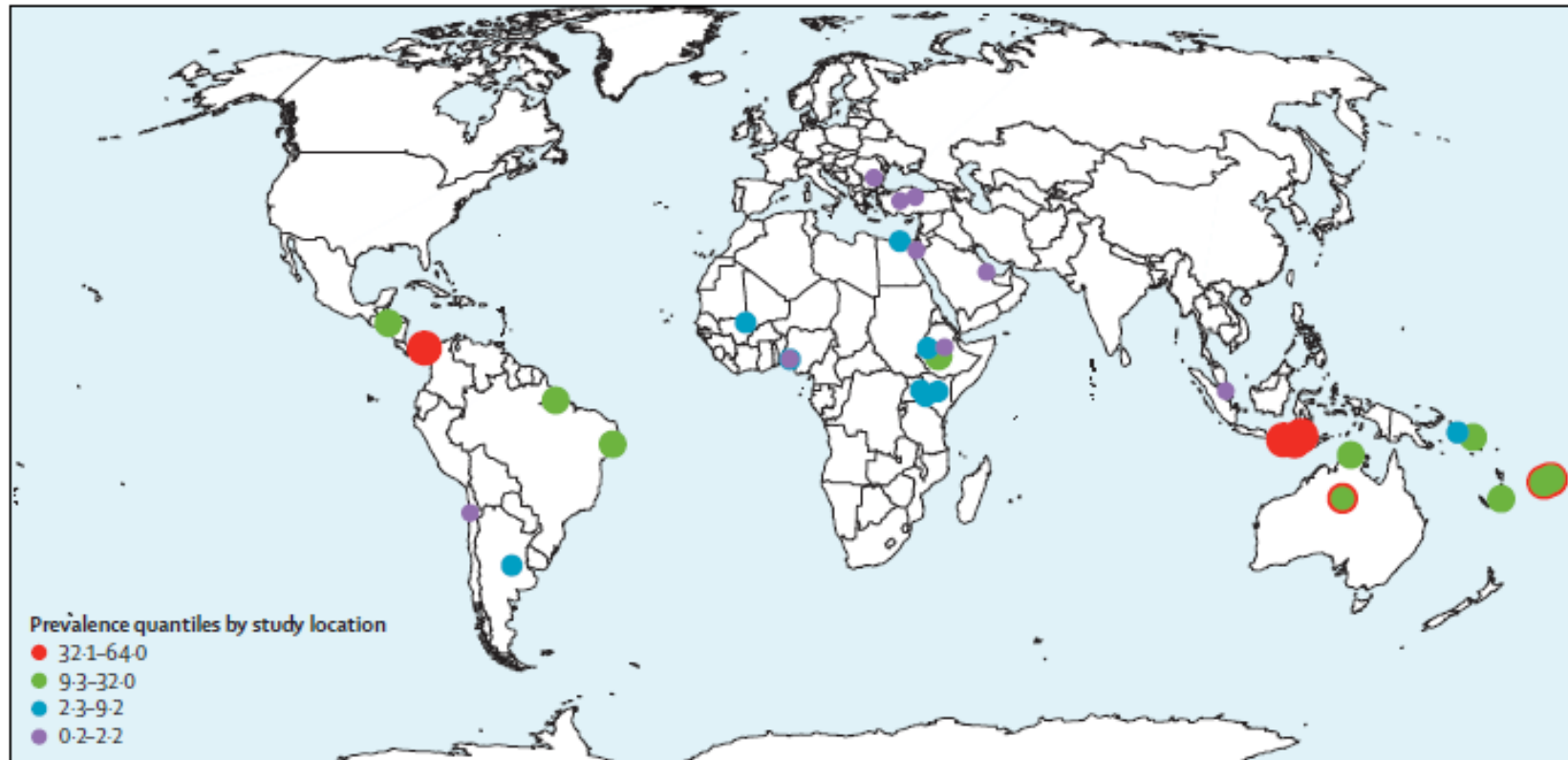


Figure 2: Map of scabies prevalence in children younger than 19 years

This map shows the study sites for the 32 studies reporting data in children younger than 19 years (three studies were done at two sites).

Prevalence of scabies and impetigo worldwide:
a systematic review

Lancet Infect Dis 2015;
15: 960-67

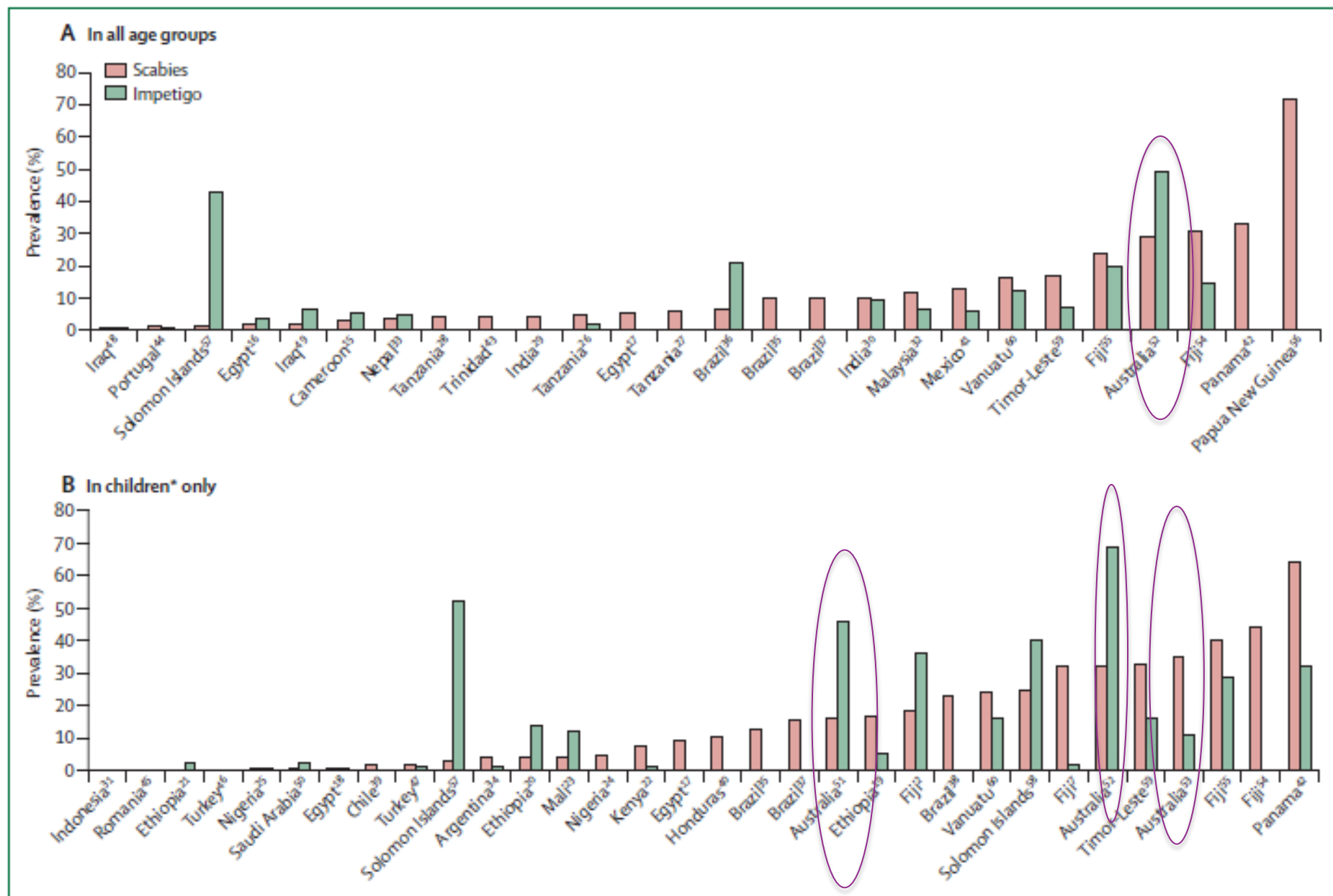


Figure 3: Scabies and Impetigo prevalence by Increasing scabies prevalence

*Younger than 19 years.



Scabies: Australian burden

- 5 studies with scabies prevalence data in impetigo systematic review
- Mean 22%, median 23% prevalence
- 1st episode often by 2 months of age
- 70% have had scabies by 1 yo

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Systematic Review of the Population
Prevalence of Impetigo and Pyoderma

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Crusted Scabies

- Severe form of scabies with crusting of skin
- Millions of mites, highly infectious
- Core transmitters within community
- Often don't present to health service, hidden



Lokuge
et al
MJA
2014



Crusted Scabies: Global burden

- 1 case in SHIFT study in Fiji (n~ 2000)
- Immuno-compromised hosts
- Nursing home residents



ONE DISEASE AT A TIME

Crusted Scabies: Australia

- 1 in 300 Indigenous people in the NT have crusted scabies through active case findings
- Burden undescribed elsewhere in Australia
- Crusted scabies rates in Australia are highest in the world



Other skin infections

- Fungal infections
- Head Lice
- Cellulitis
- Abscess

PARASITE

SCABIES

1 IN 3

Aboriginal kids
will have scabies

PARASITE

CRUSTED
SCABIES

1 IN 750

Aboriginal people
may have
crusted scabies

BACTERIAL

SKIN SORES
OR IMPETIGO

1 IN 2

Aboriginal
kids will have
skin sores

KIDNEY DISEASE

RHEUMATIC HEART DISEASE

BONE AND JOINT

BLOOD INFECTIONS

HEAD LICE

FUNGAL
INFECTION

