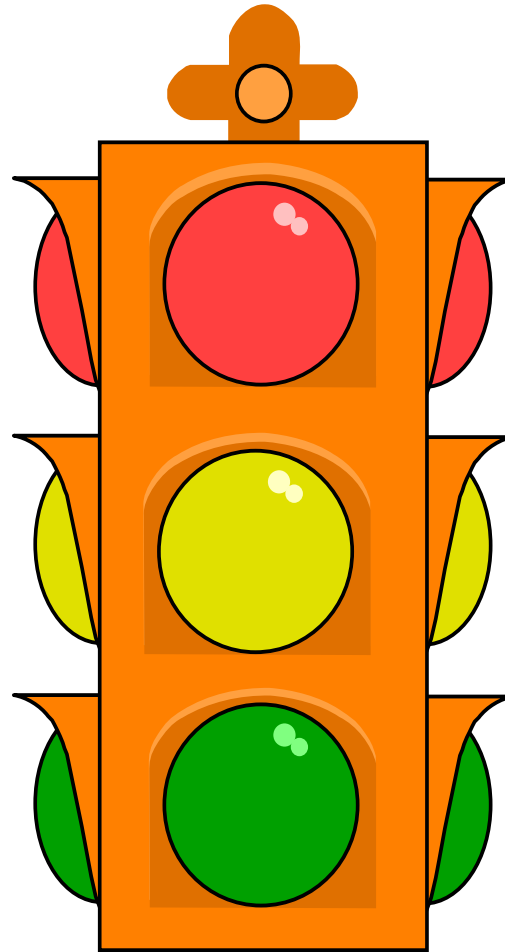


AMR in GC in WPRO and SEARO - 2006

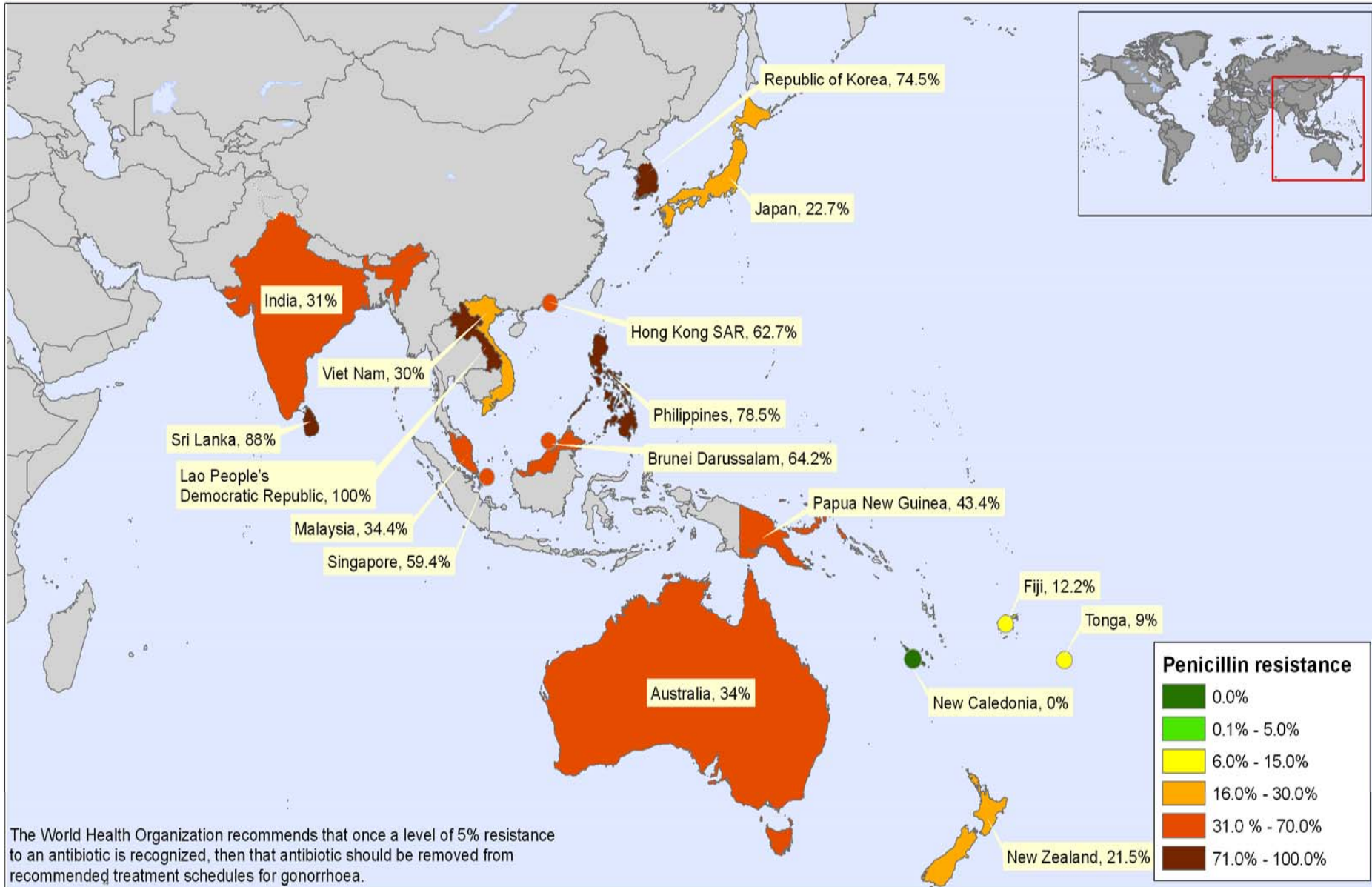
Old problems and new dilemmas

John Tapsall

Threshold for action is 5% R
colour-density maps



Penicillin resistance of strains of *Neisseria gonorrhoeae* isolated in countries, areas and territories of WHO South-East Asia and Western Pacific Regions (2006), shown as the % of resistant isolates

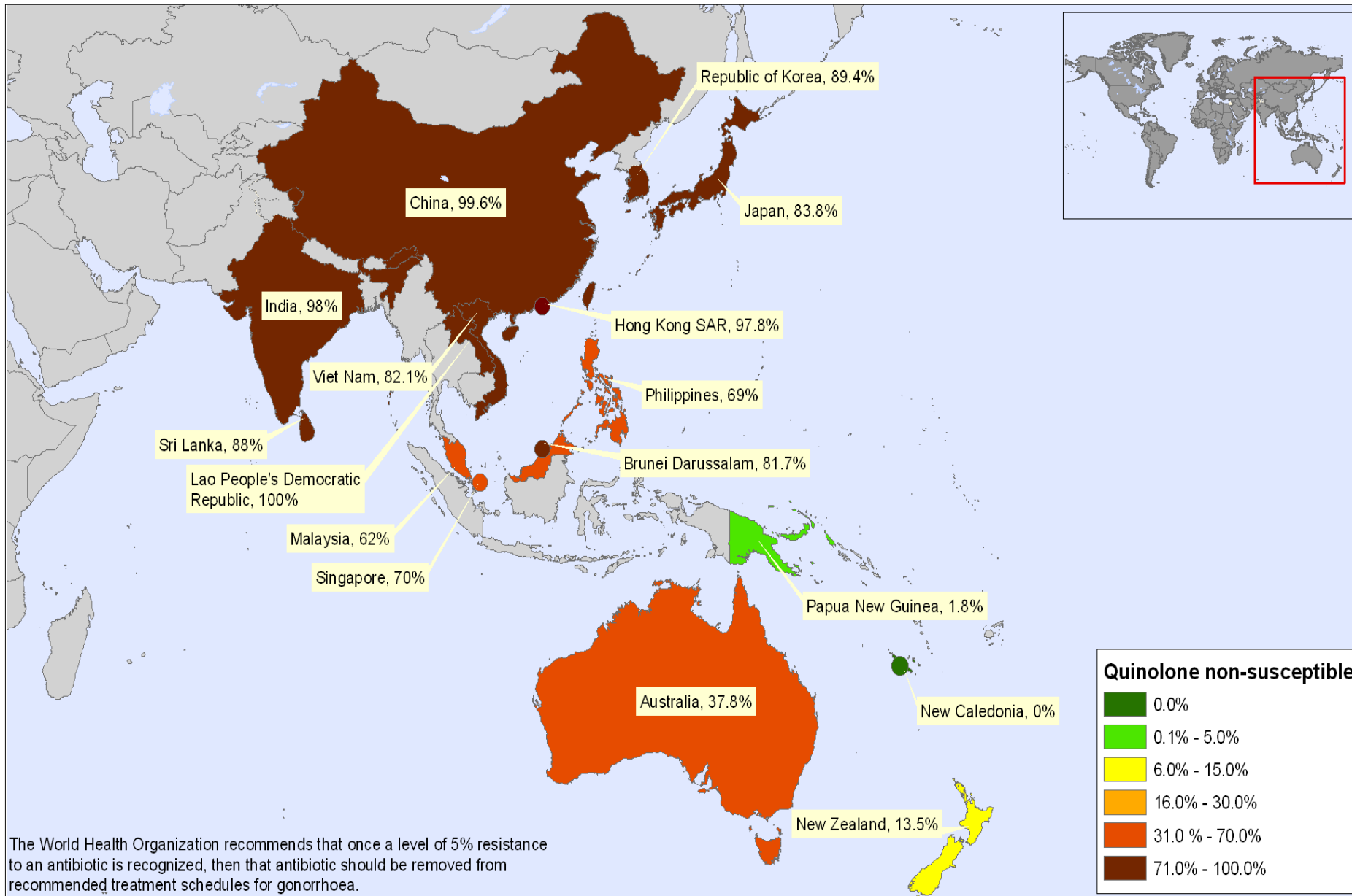


The World Health Organization recommends that once a level of 5% resistance to an antibiotic is recognized, then that antibiotic should be removed from recommended treatment schedules for gonorrhoea.

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Data Source: National Ministry of Health/WHO
Map Production: Public Health Mapping and GIS
World Health Organization

Quinolone non-susceptible strains of *Neisseria gonorrhoeae* isolated in countries, areas and territories of WHO South-East Asia and Western Pacific Regions (2006), shown as the % of resistant/non-susceptible isolates



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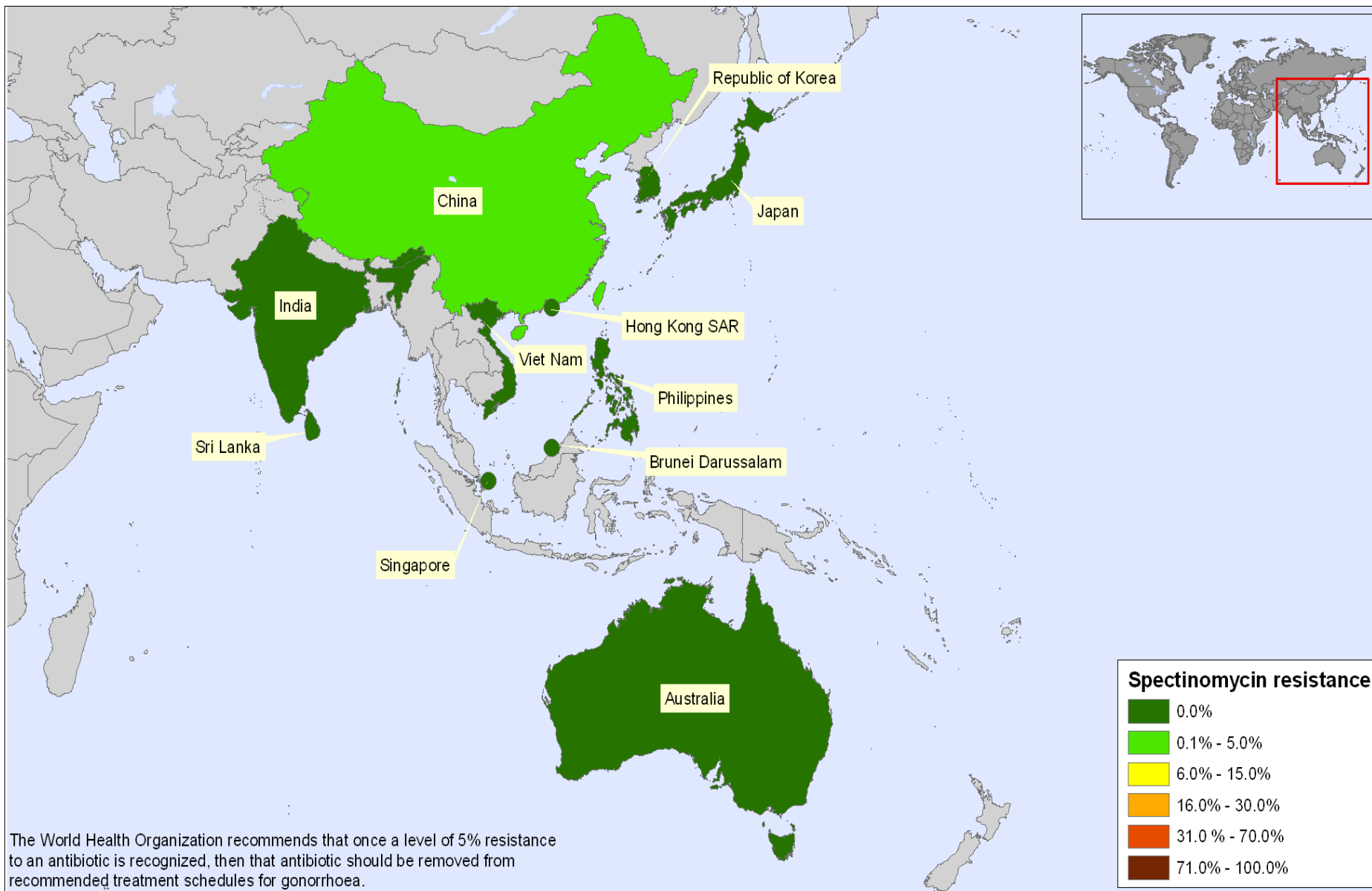


Evolution of Quinolone Resistant *N. gonorrhoeae* (QRNG) – WPR

WHO WP/SEAR 1992 - 2007

- Increase in number of centres with QRNG
 - Increase in number and % of QRNG in each centre
- Increase in MICs (i.e. level of resistance) in QRNG
- *Quinolones ineffectual in much of SEA and WPR for many years*

Spectinomycin resistance of strains of *Neisseria gonorrhoeae* isolated in countries, areas and territories of WHO South-East Asia and Western Pacific Regions (2006), shown as the % of resistant isolates



The World Health Organization recommends that once a level of 5% resistance to an antibiotic is recognized, then that antibiotic should be removed from recommended treatment schedules for gonorrhoea.

Cephalosporin 'resistance' or non-susceptibility

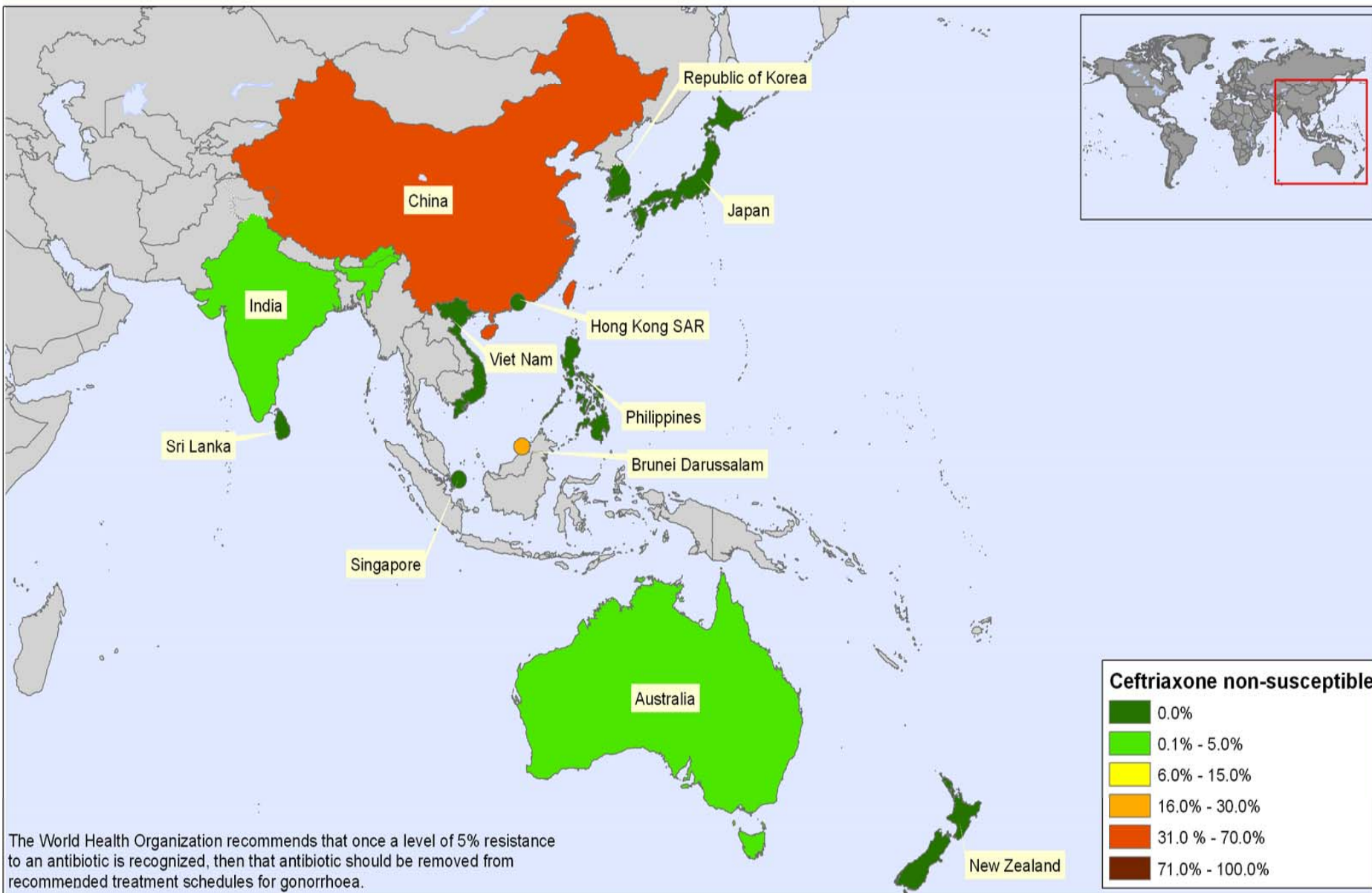
- **Defining 'resistance':**
 - Better clinical/laboratory correlates required
 - Current clinical status in WPR:
- Increasing numbers of cases of treatment failure with oral 3rd gen c'sporins – 2% in Hong Kong;
- cefixime not recommended in Japan since 2006
 - *NO documented treatment failure with injectable ceftriaxone*
{in the right dose with a good quality drug}

Cephalosporin 'resistance'

- Current laboratory status in WPR:
- No of centres with “cef NS” is increasing
- No & % of GC with “cef NS” is increasing
- MICs increasing: 0.0001 → 0.5 mg/l
- huge jump but 'treatable' with ceftriaxone*

- Antibiotic target site alteration described
- Spread of 'cef NS' GC ST 835 described

Ceftriaxone non-susceptible strains of *Neisseria gonorrhoeae* isolated in countries, areas and territories of WHO South-East Asia and Western Pacific Regions (2006), shown as the % of non-susceptible isolates



The World Health Organization recommends that once a level of 5% resistance to an antibiotic is recognized, then that antibiotic should be removed from recommended treatment schedules for gonorrhoea.

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Data Source: National Ministry of Health/WHO
Map Production: Public Health Mapping and GIS
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Ceftriaxone MICs and Ceftibuten zone sizes for GC from treatment **success*** and **failure#**

Ceftriaxone MIC (mg/L)	No	Ceftibuten disk diffusion zone diameters in mm (number) 30 mcg disc
<u>< 0.064 S</u>	25*	31 – 49 mm S
<u>0.064 S</u>	11* 10#	33 - 38 mm S 19 - 27 mm R Mosaic X PBP 2; ST 835
<u>0.125 S</u>	4* 1#	33 - 35 mm S 21 mm R Mosaic X PBP 2; ST 835 # Cefixime MICs 0.125/0.25 by CLSI

Identifying and testing oral cephem 'resistance'

Big issue

- Cefixime not recommended in Japan
 - Treatment failure in CLSI 'S' range
 - Multiple oral cepheims used in WPR
 - Do we have to test all of them?
 - How many are we missing?
 - Are we defining the problem?
-
- Lo et al AAC: screen with ceftibuten 30 mcg disc
 - then a PCR for mosaic PBP2 in 'resistant' GC