6th International Conference on Typhoid fever & other Salmonelloses
Guilin (China)
November 12-14, 2005

Deliberations and Recommendations
Salient features

• Over 200 registrants
• 20 invited papers and 28 oral communications
• Additional 128 poster presentations
• Several side meetings & discussions
Genomics

• We know the bug much better than 3 years ago...
• But do we?....
  – S. typhimurium in Africa
  – Pediatric isolates versus adult strains
• The field has moved well beyond PFGE
  – Multi-locus sequence typing is the way forward and may change classification
  – Molecular epidemiology of outbreaks and endemic disease is needed at scale
• Mechanisms of virulence are being unravelled
• Relatively few DNA array studies
Epidemiology & Public Health issues

• Burden high, largely a pediatric disease in south Asia, although differences exist elsewhere
• Endemic disease with periodic outbreaks.
• Paratyphoid remains enigmatic
• Active surveillance studies of fever in community settings reveal sub-clinical or milder version of the disease (c.f. hospital series). Are these clinically relevant typhoid or transient bacteremia
• Before we agree that typhoid mortality has reduced three folds, mortality figures need revisiting
  – More robust estimates may be possible with newer collaborations (e.g. Ellison institute etc)
Major causes of death in Pakistan (1992-1997)

A.Q. Khan et al
PMRC 2001
Epidemiology of drug resistance

• Drug resistance rising and almost ubiquitous in some countries
  – MDR stabilizing ~ < 20-25%
  – FQ resistance has increased, with NA resistance exceeding 80% in Vietnam and full FQ resistance emerging in South Asia
    – “Impossible strains”!

• Molecular mechanisms of drug resistance better characterized (dual versus triple mutations)
Diagnostics

- Critically important issue & public health need
- Limitations of existing serological tests (Widal, Typhidot®, Tubex®)
- Recent modifications of above tests (Typhidot-rapid and Tubex LT)
- Nested PCR appears promising and may help establish a new “gold standard” for comparison. Need for validation in community settings with relatively milder disease and bacterial load
- Need for a new approach in community & health system settings........ a “fever stick”
Therapeutics

• Troubling data on existing quality of studies (RCTs) and limited information in children
• The pipeline is drying up! Gatifloxacin appears promising, but….
  – the life span may only be 4-5 years!
• Urgent need for
  – Need for multi-center collaborative studies (Typhoid Working Group)
  – Consensus on case definitions and outcome criteria
  – Linkage with other groups dealing with antibiotic resistance prevention strategies in public health settings e.g. REACT
Vaccination strategies

• Existing vaccines
  – Vi vaccine scale-up (data awaited from DOMI)
  – Oral typhoid vaccines
  – Vi conjugate vaccine update

• Newer candidates (live typhi / para, Porins-based vaccine, Ty800)

• Issues
  – Global versus national vaccination policies
  – Use of typhoid vaccine(s) in emergencies
Vaccine strategies (next steps)

- Fast track DOMI data and country plans
- Consensus among agencies (IVI, WHO, CDC, funders e.g. Gates, Industry and key policy makers)
- South Asia consensus re childhood vaccination strategies (EPI versus school age)
Time lines

• Have a Typhoid Working Group Listserve and a possible multi-country project by early 2006
• Encourage WHO to hold a consensus meeting on important public health aspects of typhoid within 2006
• Get the Wellcome Trust and Sanger Center to hold a meeting on priorities in Salmonella genomics before 2007
• Try and do all of this to get results before the 7th conference!