

## Senate Committee: Inquiry into the progress in the implementation of the recommendations of the 1999 Joint Expert Technical Advisory Committee on Antibiotic Resistance

Submission by Chris Del Mar on behalf of the Centre for Research Excellence in Minimising Antibiotic Resistance in Acute Respiratory Infections

We welcome the opportunity to address the inquiry. Our research grant was awarded by the NHMRC towards the end of last year (November 2012) as a Centre for Research Excellence to address some aspects of this very problem.

Some of the assumptions underlying the research we are preparing are:

- 1 the greatest tonnage of antibiotics for medicinal use are prescribed in primary care for acute respiratory infections.
- 2 in this setting, antibiotics are poorly effective (they make little difference to outcomes, even when infections are caused by bacteria).
- 3 Continued high use of antibiotics leads inevitably to resistance;
- 4 Yet we acknowledge that antibiotics are very important for use in
  - a. the very ill with infection (septicaemia, pneumonia, pyelonephritis, meningitis etc)
  - b. high-technical, largely specialist or hospital settings, (for such interventions as cardiac catheterisations, joint replacements, bone-marrow transplants, chemotherapy etc).
- 5 Antibiotics use therefore needs to be restrained for such indications
- 6 withholding use of specific antibiotics means bacteria re-develop susceptibility to them again.
- 7 accordingly we need funding to develop alternatives to antibiotics (such as probiotics, steroids, a better focus on hygiene, quarantine and barriers, and evidence of the effectiveness of simple analgesics and antipyretics).

Some of the interventions we will be pursuing include:

- 1 demonstrating that (even apart from resistance development) there are many minor side-effects of antibiotics;
- 2 quantifying further the modesty of benefits from antibiotics for routine day-to-day acute respiratory infections;
- 3 showing how prescribing antibiotics, but suggesting to patients that they are not used ("delayed prescribing") can be exercised in Australia (it is feasible and effective at reducing antibiotic prescribing in the UK and other countries abroad);
- 4 studying how changes to the packaging of antibiotics may improve their use.

Some questions we are not addressing that we think should be:

- 1 the extent to which administering antibiotics to animals in agriculture contributes to resistance in the community.
- 2 The extent to which antibiotic prescribing in primary care should be restricted (perhaps by "Authority Prescribing") to sequester some 'reserved' antibiotics for secondary care use.

System processes we believe should be implemented are:

- 1 Maintaining a body such as the NPS to design and implement strategies at the population (public awareness campaigns) and clinician behaviour levels
- 2 Perhaps encourage the NPS to undertake research (current legislation discouraging this activity);
- 3 Consider establishing a single body to consider and monitor antibiotic use in Australia over all jurisdictions (including medical and agricultural), with regulation and licencing powers.

Chris Del Mar<sup>1</sup>; Paul Glasziou<sup>1</sup>; Elaine Beller<sup>1</sup>; Tammy Hoffmann<sup>1</sup>; Mieke van Driel<sup>2</sup>; David Looke<sup>2</sup>; Susan Michie<sup>3</sup>; John Lowe<sup>4</sup>

<sup>1</sup>Bond University, <sup>2</sup>University of Queensland, <sup>4</sup>University of the Sunshine Coast, <sup>3</sup> University College London