15.2.2013

Senate Finance and Public Administration Committees
PO Box 6100
Parliament House
Canberra ACT 2600
Australia

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

This is a private submission. The basis for our submission is our local collaborative research which has been presented at both national and international conferences and is currently submitted for publication and associated peer review.

Recommendation number 10 of the 1999 JETACAR report was "a comprehensive surveillance system be established….including medical, food producing animals and veterinary areas". Our understanding is that as a result of this, the Dept of Health and Ageing commissioned Food Sciences Australia to perform a nationwide survey of antimicrobial resistance bacteria on food specimens throughout Australia (Melbourne, Sydney, Brisbane and Perth) which was undertaken between 2007 and 2008, titled "Pilot survey for antimicrobial resistant (AMR) bacteria in Australian food". This study found that although there was evidence of antibiotic resistant *E.coli* (bacteria) on food specimens, reassuringly the rates were lower than those found overseas. In particular, this study failed to find any evidence of *E.coli* resistant to 3rd generation cephalosporins or ciprofloxacin-both antibiotics that are of critical importance to treating infections in humans.

During 2010, we performed a small study of 30 retail poultry isolates obtained from Perth retail poultry processing factories. We used methods that were likely to be more sensitive (ie more likely to detect something if it were present) than those used in the Food Sciences Australia nationwide study. We found that the proportion of poultry samples that contained antibiotic resistant *E.coli* were significantly higher than had been found in the Food Sciences Australia study, including 90% vs 38% for ampicillin, 93% vs 47% for tetracycline, 100% vs 22% for cotrimoxazole and 37% vs 4% for gentamicin. Alarmingly, we found *E.coli* non-susceptible to 3rd generation cephalosporins and ciprofloxacin on 20% and 30% of poultry samples respectively.

Our findings require interpretation with some caution as the study was performed in a single location and involved testing of only a small number of poultry isolates. However, the results do suggest that rates of antibiotic resistant bacteria on retail poultry may be higher than had previously been identified in the nationwide study.

Our findings have relevance to several of the terms of reference for the enquiry, namely:

b) Where and why failures have occurred: It is possible the surveillance study performed as a result of JETACAR may have produced inaccurate results due to use of methods that lack the ability (sensitivity) to detect the antimicrobial resistant problem that they were designed to detect. This may have led to an underestimating of the scale of the antimicrobial resistance problem in food producing animals in Australia.

d) Implications for ensuring transparency, accountability and effectiveness in future management of antimicrobial resistance: The implication of the above is that better designed (eg more sensitive), more contemporary, nationwide surveillance studies are required to re-assess the rates of antimicrobial resistance in food producing animals in Australia.

We would be happy to provide the results of both our research and copies of the Food Sciences Australia studies if required.