Third Global Patient Safety Challenge –

Tackling Antimicrobial Resistance

Geneva 12th-13th March 2009

Day 1, 12th March

Edward Kelly, Coordinator, WHO Patient Safety Programme welcomed all participants to the working group meeting and gave a brief introduction to the work of the Patient Safety Programme, the Third Global Patient Safety Challenge and reiterated the support of the Director-General.

David Heymann, co-lead 3rd Patient Safety Challenge, gave a short slide presentation describing the background history of WHO work on Antimicrobial Resistance (AMR) culminating in the publication of the ‘Global Strategy for Containment of Antimicrobial Resistance’, the effects of AMR and the importance of a global effort to tackle it. In particular, he highlighted the faltering pipeline of the development of new antimicrobials and the lack of simple ‘bedside’ diagnostic tests.

Gerald Dziekan, Programme Manager 3rd Patient Safety Challenge, described the work programme of the Challenge, which would be split into two phases. The first or ‘Foundation’ stage aimed to develop a Global AMR work plan, focussed on antibiotic resistance but including chapters from disease specific areas (HIV/TB/Malaria). The first stage would also include an attempt to develop an initial estimation of the global burden of resistance. A second stage will then build on this work to develop a ‘Challenge intervention’, create and strengthen surveillance networks and develop a robust methodology for burden estimation, These activities will lead up to the global launch of the Challenge in 2010.

Dr Dziekan then described the agenda and timetable for the meeting and other organisational issues. The objectives of the meeting were:

• To present and discuss draft chapters
• To learn from disease specific programmes & others
• To agree on timeline & process for finalization of chapters
• To encourage cooperation between working groups

Dr Dziekan emphasised the need to focus on a work plan, the current knowledge gaps and possible intervention priorities. The final document should be used for awareness raising and advocacy and also as a basis for fund-raising.
Didier Pittet, Co-Lead 3rd Patient Safety Challenge stressed the importance of working groups coming up with innovative solutions to the challenges the global community face in tackling the problems of AMR.

The introductory comments were followed by presentations from WHO groups tackling HIV/Aids, TB and Malaria detailing their work, concentrating particularly on their work on resistance. Dr Silvia Bertagnolio spoke on behalf of Anti-retroviral Treatment and HIV Care, Dr Ernesto Jaramillo spoke on behalf of TB/HIV and Drug Resistance and Dr Andrea Bosman spoke on behalf of the global malaria programme.

Subject specific expert working groups split to separate break-out rooms to continue drafting their chapters for the WHO AMR work-plan document. The working groups were in the areas of:

- Surveillance
- Animal Husbandry, Agriculture and Aquaculture
- Rational Drug Use & Regulation
- Research and Development
- Infection Control

At the end of the day the groups reconvened in the Executive boardroom and each group gave a brief presentation on their progress.

**Surveillance**

The surveillance group stressed the need for burden estimates to drive other areas of the agenda especially advocacy and mobilisation of humanitarian work. They stressed the importance of respecting different levels of surveillance that will be suitable for local, regional, national and international circumstances.

Chapters should consider incorporating success stories that have changed policies, including examples such as ESAC and EARSS. There should be a focus of organism-based diagnoses versus syndrome-based diagnoses. The group could also use cost-analysis examples of surveillance of specific diseases in hospitals. They concluded that practical operational approaches would be required and suggested monitoring appropriate use of antibiotics, point prevalence surveys, and guidelines on increasing laboratory capacity and the strengthening of regional surveillance.

A general discussion followed. It was stressed that surveillance is a means rather an end in itself and there was an urgent need to convince people that this was a societal problem. This could be done by focussing some attention on high profile organisms such as *Staphylococcus aureus*. There was agreement of the importance of building on existing networks. However questions were raised on how to identify laboratories and the selection criteria for inclusion into networks. There is a need to make surveillance wider than just lab based and to include pharmaceutical data, and the need to focus on outcomes and possibly an early warning system. There was general consensus that surveillance should include animal husbandry and should be...
inclusive rather than exclusive e.g. asking pharmacists to report on procurement information.

**Animal Husbandry, Agriculture and Aquaculture**

The animal husbandry group had already prepared a draft chapter. Frank Aarestrup, Co-lead animal husbandry working group, thanked the dedication and timeliness of contributions.

The group discussed the sections in their chapter in turn, which include linking the topic to patient safety and the wider agenda, descriptions of examples of transfer of resistant organisms from food animals; the global importance of food production and antibiotic use; and a list of potential specific interventions.

Potential interventions suggested included the possibility of not approving the use of antimicrobials important in human medicine for veterinary medicine. (e.g. linezolid, daptomycin, carbapenems, glycopeptides). Another intervention suggested was the restriction of certain critical antibiotics from use in agriculture and animal husbandry, in particular 3rd and 4th generation cephalosporins and floroquinolones were suggested. The importance of developing and strengthening monitoring systems was also noted.

There followed a general discussion which included the use of audit tools and benchmarking to monitor use and the importance of involving expertise from the World Organization for Animal Health (OIE) and Food and Agriculture Organization (FAO) to cover all aspects of animal husbandry, agriculture and aquaculture and how best to communicate/develop frameworks in times of a global recession.

**Rational Drug Use & Regulation**

The rational drug use group described the importance of antibiotics as a unique class of drugs with societal effects. The barriers to rational drug use – lack of knowledge, lack of diagnostics, patient choice and over the counter drugs – and the means to tackle them were described. It is important to choose interventions that also confront barriers to rational drug use. It was stressed that there should be clear ‘top-down and bottom-up’ guidelines and interventions to involve the society as a whole.

Issues around counterfeit drugs and non-functioning regulation and the need for political commitment, e.g. by engaging country specific champions were also raised.

A wider discussion followed which included discussion of cross-cutting areas with other groups and areas such as rapid diagnostics, prioritisation of drug choice, use of professional bodies and medical school curricula, and the creation of a special drug class to better regulate prescribing.
Research and Development

The R&D group described their draft framework
1) R&D across health technologies
2) Gaps in R&D
3) Regulation
4) Financing
5) Alternative Models.

The group felt the role of R&D group was to suggest interventions to produce an enabling environment rather than specific developments. The synergy between research into vaccines (decreasing the need for antibacterial use), diagnostics (improving the rational use of antibacterials), and drugs (accelerating the development of new antibacterials) was described.

The role of markets was considered, as was priority setting including both the demand and supply sides. A variety of push and pull mechanisms were described that could potentially be used to create incentives for innovation. The presentation ended with a case study on the Open Source Drug Development project and a consideration of the need for a paradigm shift in the approach to research and the value of an ‘open network science’ approach.

There followed a general discussion which focused on the importance of R&D for all work groups and the importance of flexibility to produce environments conducive to research.

Infection Control

The infection control group described their work using the reference framework from the core group meeting: describing the current knowledge base, the need to gain information on cost effectiveness and quality indicators, the research agenda, and the value added by WHO. The first draft of the infection control chapter has been written and needed to be edited and updated by other group members.

There was acknowledgement that there would be overlap with other groups, in particular antibiotic stewardship and surveillance. The importance of liaison between the groups to ensure these important topics was noted.

There was a suggestion of the need for a situation analysis within counties and that goals should be set and should be targeted according to the situation in the individual countries. The promotion of infection control infrastructure in each country was noted, as was the need for hand hygiene evaluation and promotion. Prioritising the control of specific alert organisms according to the situation in individual countries was also considered.
The unique value that WHO could lend to the project included lessons from the first and second Global Patient Safety Challenges and learning from previous WHO programmes.

The importance of developing tools to facilitate improved infection control was suggested. These tool might include indicators for monitoring and evaluation of infection control structures/ procedures/ outcomes, guidance to integrate infection control and antibiotic stewardship programmes and tools to help implementation of the International Health Regulation (IHR) in the area of multi-drug resistance.

There was then a general discussion which included topics on bundles of measures, the cross-over between infection control and rational drug use on antibiotic stewardship, the setting up of infection control teams and the link-back into previous patient safety challenges.

Day 2, 13th March

Didier Pittet welcomed everyone back to the second day of the meeting and reaffirmed the objectives of the group.

Burden of Disease

Christophe Fraser from the Burden of Resistance group presented the progress so far for discussion and comment. The group had decided to take the “short view” which was to tackle the issue of current burden of mortality attributable to resistant organisms rather than the “long view” (modelling of future “catastrophe” scenarios).

Initial work will focus on calculating estimates of the burden of key sentinel organisms. Suggested organisms include S. pneumonia and MRSA. Burden would be calculated from estimations of prevalence (using data from the surveillance group) and attributable fraction (to be developed from systematic reviews of the literature by the burden of disease group). The work would also include a narrative review. Additional issues for consideration included the difficulty of confounding, the problem of focusing on mortality at the expense of morbidity and the validity of an empirical approach.

A wide-ranging discussion explored the issues of confounding factors, bioplasibility, use of grey literature, the applicability to different income groups of countries, the wider societal costs associated with resistance and the limitations of current methodology. The need to balance a rigorous process with the need to generate data for advocacy purposes was considered. The importance of burden data at the individual country level for local advocacy and in particular the current lack of data on this topic in developing countries was noted.

The next steps for this group were discussed and it was agreed to take a pathogen approach with one expert working closely on each pathogen. The
importance of including resistant organisms in the community setting was also highlighted, and *E. coli* suggested as a potential organism for inclusion.

**Timeline**

There was a brief discussion of the timeline for future development. All working groups agreed to the following timetable:

- Copies of chapters for review to be submitted to the secretariat by 31st April.
- These will be circulated to the rest of the working groups for review/comments. Feedback to be received by end of May.
- A further meeting will be organised with the core group, possibly in June.

It was agreed that each chapter would end with four suggestions for interventions that were specific, implementable, and measurable.

At this point Sir Liam Donaldson, Chair World Alliance for Patient Safety, joined the meeting via video conference from London. David Heymann gave a brief summary of the meeting so far. The co-leads of each working group then gave brief presentations of their chapters including possible interventions. Liam Donaldson appreciated the progress made and commended the leadership of Dr Heymann and Dr Pittet.

The Regional Patient safety focal points were asked to provide systematic and contextual (region-specific) inputs into the five strategic areas.

David Heymann closed the meeting with a statement on the importance of the work driving forward a long-term agenda for the issue of antimicrobial resistance.

David Heymann, Didier Pittet and Pauline Philip expressed their gratitude to all those attending, as well as those who were unable to attend, and thanked them for their continued dedication and effort in ensuring the programme would be a success.