Minutes of the Second meeting of the National Airborne Infection Control Committee

LRS Institute, New Delhi
19th September, 2009

The second meeting of the National Airborne Infection Control Committee (NAICC) was held at LRS Institute, New Delhi on 19th September, 2009 under the chairmanship of Prof S K Jindal The list of members and other participants is enclosed in Annexure I.

Prof Jindal welcomed all the members and participants. He appreciated the efforts put in by various members of the committee on their contribution to the development of the draft national guidelines on airborne infection control in health care and other settings. He requested all members to deliberate further on improving and updating the draft guidelines during the day.

A presentation on "Overview of the WHO 2009 Infection Control Policy – Managerial activities & Administrative Control" was made by Dr Puneet Dewan highlighting the key areas in the international guidelines that need to be considered in the draft national guidelines.

This was followed by detailed discussion by the committee members on the latest WHO – 2009, TB Infection Control Policy to arrive at the following recommendations for the Draft National Guidelines on Airborne Infection Control for Health Care Settings:

Coordination & planning

- The members inferred that comprehensive planning and budgeting would be called for to include the range of interventions in the infection control plans at all levels. Thus, integrating with other programmes and the general health system at large would be essential to mobilize the requisite funding support to carry out these activities.
- Role of TB programme: The development of the national airborne infection control guidelines and according technical support for its implementation, monitoring and evaluation is the responsibility of the National TB Programme. The TB group has to advocate these guidelines to enable its adoption, integration in facility level infection control plans and monitor its implementation. Ultimately, the responsibility and budgetary support would be from the health system and NRHM, as the recommended interventions would lead to general health system strengthening and make the health facilities safe for patients and providers.
- DDG clarified that RNTCP has funding provisions for up-gradation of DOTS Plus ward for MDR TB patient management and for Culture and DST Laboratories at identified IRLs while NACP has provisions for ART Centers. Rest of the health care facilities needs to budget funds for infection control measures through the facility annual budget or through DMER or NRHM.
- Currently the mandate under the general health system in India is that every facility should have an Infection Control Plan in place and implemented accordingly. It was decided that airborne infection control has to be a component of the general health system's facility based infection control plans. Airborne Infection Control is on priority due to the recent H1N1 pandemic. Already, major hospitals are working on infection control measures to curb the spread of H1N1. A hospital infection control committee exists in many hospitals. Airborne infection control guidelines can be integrated in the existing plans by revising these to include components of HR, facility risk assessment and improvisation to correct deficiencies, re-thinking or re-organization of the facility

design and services in line with the national guidelines and adding the component of surveillance and training of health care workers.

- Representative from NCDC (formally NICD) informed that members that NCDC had developed guidelines on Avian Influenza and HCW manual for Avian Influenza which is being updated for H1N1 (Swine) flu, and that these should be used when integrating the AIC guidelines developed by NAICC to develop training materials for health care workers.
- The parliament mandate for states to have state pollution control committees should be utilized for advocating and integrating the airborne infection control guidelines implementation and monitoring. The activities of these committees are monitored by CDMO / CDHO under clinical establishment regulations.

Capacity building

- It was learnt that a special course was conducted for engineers and architects at Harvard School of Public Health on "Building Design and Engineering Approaches to Airborne Infection Control" with aspects of TB infection control covered in it. The material was available including for high risk settings and this was an opportunity to leverage upon to build capacity at national institutions in airborne infection control.

Monitoring & Evaluation

- Monitoring and Evaluation of infection control measures should include efforts in planning, inputs, processes, and in selected settings the effectiveness of the outcomes.
- The members agreed that surveillance of TB (and other airborne infections) in health care workers was the only possible marker of effectiveness of infection control measures. This would help in determining the impact of infection control interventions on the incidence of TB (and other airborne infections) in health care workers (HCWs).

This was followed by a thorough **section by section review of the Draft National Guidelines on Airborne infection control in health care settings.** The members deliberated on the contents of the draft guidelines to arrive at recommendations for modification and update in the guidelines that are enclosed at Annexure 2.

The following resolutions were arrived at as the **next steps**:

1. The draft guidelines should be updated in 2 weeks time and re-circulated to the group. Dr Chandrashekhar to be consulted for reviewing the section on environmental controls in the guidelines and suggest updating if required.

2. A RNTCP workshop for building capacity in airborne infection control is planned from 20th – 24th October 2009 at LRS Institute, Delhi. Dr. Michele Pearson (CDC Atlanta) has expressed willingness to co-facilitate this workshop at CDC's expense.

3. The state of West Bengal and Gujarat were selected to conduct the pilot implementation of the national guidelines on airborne infection control in health care and other settings. Official communication may be sent to the state officials from CTD regarding the same. Dr Jindal suggested including multiple sites in the pilot covering all variety of health care facilities rather than restricting only to medical colleges. The state of Gujarat and Maharashtra to be requested to share their state level infection control plans with CTD. The pilot should focus on the assessment of operational feasibility and technical soundness of the national guidelines before considering nation wide implementation through phased expansion plan.

4. Funding of pilot projects: States should take responsibility for training, implementation, monitoring and for any recommended renovations while support for additional technical assistance would likely be available from USAID through PATH. Expenditure pertaining to initial risk assessments, mediation and training of HCW can be planned through this external support while advocacy needs to be undertaken with state officials to take up any reconstruction or infrastructure modification cost as recommended during facility assessments through state / facility budgets. The state committees may consider mobilizing additional funding support through NRHM or other programmes if possible.

5. The broad areas that need to be covered in the pilot plans of both the states include:
   - Formation of State Infection Control Committees
   - Identify sites that cover a range of facilities from primary to tertiary level of health care.
   - Sensitizing / Training Administrators and Infection control committee members of the identified sites.
   - Training of health care workers in airborne infection control guidelines and module on the subject.
   - Plan for the pre-pilot risk assessment of the identified facilities in both states. Standard facility risk assessment tools to be used.
   - State Committees to review the recommendations for each facility risk assessment and undertake corrective actions from state level wherever required.
   - Report of each facility risk assessment and corrective actions suggested at facility, state and central level to be communicated to CTD periodically.
   - Monitoring updating of facility infection control plans to include airborne infection control measures specific to the facility based on risk assessments conducted.
   - Implementation of remedial interventions based on specific airborne infection control measures recommended during risk assessments. This includes administrative, environmental controls and personal protective equipments.
   - Implementation of passive surveillance of TB in health care workers in each of these facilities in both the states.
   - Monitor subsequent action on recommendations through periodic risk assessments and state level review at state infection control committee meetings.
   - Plan for post- assessments at each of the facilities in both the state to document the achievements in terms of feasibility of implementation, risk reduction at these facilities and any un-intended consequences or non-feasibility of any of the recommended airborne infection control measures as per the national guidelines.

6. Final selection of sites and protocol development for the pilot testing of feasibility of implementation of national guidelines on airborne infection control may be considered after initial advocacy with concerned state officials at both states. CTD may be requested to give greater priority to this protocol as a commissioned OR under the programme. Some additional funding might be made available for external technical assistance from USAID (via path)

7. Respiratory Infection Prevention and Control (RIPC) package of training materials for HCW including summary, quick reference card and training module for HCW, developed by WHO and CDC is available. This is being adapted by Indonesia, Thailand and China for infection control training of frontline health care workers. Similar adaptation of these materials and methods can be considered by through review of these to align it with the national guidelines with support from NCDC.

The chair concluded the session with a vote of thanks to all the participants.

Annexure I:

List of Participants:

1. Prof Dr S K Jindal, Head, Dept. of Pulmonary Medicine, PGIMER, Chandigarh – **Chairman**
2. Dr L S Chauhan , DDG (TB)
3. Prof. R K Solanki, Dept. of Pulmonary Medicine, BJMC, Ahmedabad
4. Dr S Rajasekharan, NACO Consultant & Ex-Director, GHTM, Tambaram, Chennai
5. Dr Sunil Gupta, Joint Director, NCDC, New Delhi
6. Dr Rohit Sarin, AMS & Head, Dept of TB Control & Training, LRS Institute, New Delhi
7. Dr Rupak Singla, Head, Dept of TB and Respiratory Diseases, LRS Institute, New Delhi
8. Dr Puneet Dewan, MO-TB, WHO SEARO
9. Dr Sarabjit Chadha, WHO Consultant - DRTB, CTD
10. Dr Malik Parmar, WHO Consultant - RNTCP, CTD

Annexure 2:

Recommendations for modifications and update in the Draft National Guidelines on Airborne infection control in health care settings by sections:

Title & Subtitle:

- The **title** finalized for the guidelines was "Guidelines on Airborne Infection Control in Health Care and Other Settings" and the **subtitle** was "In context of tuberculosis and other airborne infections".

Background

- Purpose and scope of these guidelines - one paragraph need to be added on other settings in accordance with the title. Also, a specific comment needs to be added on TB infection control in the first paragraph.
- Importance of infection control for respiratory infections - specific TB infection control related points need to be added in the 2nd paragraph describing the Influenza H1N1 situation.

Managerial activities for hospital administration and local health officials:

- Add members of the National Airborne Infection Control Committee, TOR's and role in monitoring activities from central level.
- Rephrase the subtitle as "Role of Architects / Engineers in Health Infrastructure Design" and "Role of Health Care Facility Administration".
- Regarding State Infection Control Coordination Committee, the nodal person can be DHS to ensure regular monitoring of activities. Developing facility plan should not the prerogative of the state committee. STF Chairman to be a member of the state committee.
- Specific state, district and facility level infection control committees to be developed with specific terms of reference spelt out in the guidelines.
- Facility Infection Control Committee should have an infection control plan with airborne infection control plan incorporated in this facility plan
- In the point on Rethink use of available space – arrange the points in bullets. Also, detail guidelines on alternative measures need to be made available in the event that re-circulating air conditioners have to be used.
- In the point on Supervision, Monitoring, On-site surveillance and facility assessment – Rewrite the section and make it specific to TB infection control related activities. Reporting formats may be considered in annexure.
- Use Communication needs instead of ACSM needs in the last point in this section.

Administrative Control Strategies for health care facilities:

- Add a point on patient examination rooms, clinic rooms and consulting rooms in the subsection of OPD.
- In Referral Level Measures the word "Isolation" needs to be replaced.
- Dr Jindal was requested to add a section on infection control measures for Surgical and autopsy suites and Intensive Care Units in the guidelines.
- In administrative interventions in OPD areas, options of separate notified waiting areas to be considered in larger institutes with very heavy OPDs. This option should appear in the general section and scenario based recommendations.
- In Screening, emphasize that it the intervention to be done as early as possible as patients report to any health care institute.
- In Education on cough etiquette and respiratory hygiene, Disposal of sputum at health settings and households need to be considered. Make available tissue papers and

accessible bins with disinfectants. Pictorial Handout on guidance on cough etiquette and sputum disposal, linking with IEC resource centre to consider in an appropriate section.
- Implementation of the 4 broad administrative interventions in outpatient setting would vary from facility to facility and it should be part of the facility infection control plan.
- In administrative interventions in the inpatient areas, provide options as in NCDC guidelines on avian flu.
- It was agreed upon that inpatient segregation of smear-positive cases from immune compromised persons would apply to all types of immuno-compromised cases (like HIV sero-positives, transplant cases, asthmatics on steroids, Cancer cases on chemotherapy etc.).

Environmental Control:
- Rephrase the 3rd point in the summary of recommended environmental controls as "In existing health-care facilities relying on natural ventilation, ensure effective ventilation at all times and in all climatic conditions through proper operation and maintenance, and by regular checks to ensure fixed, unrestricted openings. If mechanical ventilation is used, the system should be well designed, maintained and operated, to achieve adequate airflow rates and air exchange"
- It was suggested to discuss the minimum standards of adequate air exchange in various settings with Dr Chandrashekhar. Reference from Manual on Medical Architecture can be taken.
- It was agreed upon that airborne isolation and procedure rooms should have > 12 air changes per hour (ACH) that would be equivalent to 80 liters/sec/patient for a 24 cubic meter room.
- Local experience on technical specifications for installation, maintenance and monitoring of UVGI are not available. It is recommended by the NAICC and NDP Committees that specification on fixtures of UVGI, minimum maintenance and monitoring requirements need to be spelt out in the national guidelines on airborne infection control as an annexure.

Ventilation:
- The picture used in Figure X as example in a chest clinic needs to be replaced for better illustration.
- Add more information on Air-conditioners and its effect on air exchange.
- Airborne isolation rooms need to be defined in Glossary.
- It was decided to place the reference of the online tool for estimating the total fan rating for a given room as a foot note or an annexure. Disclaimer to be considered for this.
- In the figure on schematic showing seating arrangement for patient and health care workers, show a seat for the patient next to the doctor's seat and an examination table too. Also show an arrow indicating the direction of air flow.
- The section on optimal arrangement for patient and staff need to be complemented with cough hygiene, decompression of the rooms and decompressed waiting area.
- In figure on schematic diagrams of mechanical ventilation, consider one more example of directional air flow in a typical setting.

UVGI:
- Specification on fixtures of UVGI, minimum maintenance and monitoring requirements need to be spelt out in the national guidelines on airborne infection control as an annexure.
- Specify in the guidelines that UVGI are not recommended unless the specification for installation and maintenance are adhered to only in settings where ventilation is not adequately serving the purpose.
- Consider moving summary recommendations above.

Airborne Isolation Room:

- Specifications on Airborne Isolation Room to be added from WHO – 2009, TB infection control policy. It was agreed upon that airborne isolation and procedure rooms should have > 12 air changes per hour (ACH) that would be equivalent to 80 liters/sec/patient for a 24 cubic meter room.

High Risk Settings:

- Replace "DOTS Plus Site" with "MDR TB Ward"
- Consider 15 ACH for MDR TB Ward and quote the reference
- Rephrase the sentence on UVGI in MDR TB ward as "Use of UVGI may be considered for such facilities as an alternative, if ventilation standards could not be achieved at all times of the day and seasons"
- The following sections need to be added in MDR TB ward:
    - Sputum Disposal to be added
    - PPE will be made available for optional use along with appropriate training
    - Avoid posting of HCW working in DOTS Plus site if they are
        - immuno-compromised
        - on immuno-suppressants
    - Periodic surveillance of HCW for TB. Put this in general guidelines outside the DOTS Plus Site section
- Add Patient Education on the following:
    - Cough hygiene
    - Cough etiquettes
    - Sputum disposal
    - Proper use of surgical masks.
    - Restricted visitor entry
- Have separate Annexure on General Hygiene, Cough Hygiene and Fast Tracking to avoid repetition
- Under section of Bronchoscopy room, add reference on re-usability of N95 masks

TB Bacteriology Laboratories:

- Dr Anand to be requested to add a section on infection control for DMCs.
- In administrative controls, add BSL levels desirable and acceptable from the National Lab Committee meetings minutes.
- Clarify with reference on the available written bio-safety document
- Rephrase the point on SOP for lab operations from sputum collection to disposal
- In the section of Waste Disposal, add a reference to the waste disposal guidelines in the SOP for Culture and DST

Personal respiratory protection:

- A specific write-up should be present. In terms of personal protective equipments, it was recommended that the guidelines should clearly specify the settings where PPE for HCW to be used.
- It was also decided that the respirator fit testing has to be used only for training purpose and not applied during implementation at facility level. A subjective method of assessing the fit of respirators should be included for health care workers training.

Health Worker Safety and Capacity Development:

- A specific write-up on training to be added for various section of the staff
- Airborne Infection Control training material for administrators and health care workers need to be developed and the methodology described in this section.

Monitoring & Evaluation:

- This section needs to be re-written in details.
- Specific reporting formats and risk assessment tools to be annexed in the guidelines.
- Early activities for monitoring:
    - Planning, assessment of facilities, training, process indicators, implementation levels and re-assessment, surveillance of TB and other nosocomial infections in health care workers – facility based, frequency of coordination committee meetings, proportion of staff screened and developed TB,
    - Broad areas for reporting:
        - Committee exists
        - Meet regularly
        - All Facilities Plan available and being implemented
        - Training
- These can be expanded later based on pilot experience.

State & District Airborne Infection Control Committee:

- Add section on State & District airborne infection control committee along with suggested members and terms of reference

Generic health-care facility airborne infection control plan

- Add section on Generic health-care facility airborne infection control plan

Household Settings:

- Add section on household settings, including policies on separation, sputum collection and disposal in household and other non health care settings. DDG stressed to avoid use of the word “Isolation” in the guidelines as this would promote reverting back to stigma and sanatoria based treatment apparently.