Surveillance for Communicable Diseases in India

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Population: 1144m
Area: 3.30m km²
2.3% of area supporting 17% world’s population
21m new born/yr
Languages
- 22 scheduled
- 325 recognized
- >2000 dialects

28 States; 7 UTs
605 districts
Background

Until 1990s disease surveillance was aggregation of independent programmes

Integrated Disease Surveillance Programme (IDSP) launched 2004
- Improve data quality and link to action
- Strengthen lab support
- Train partners
- Coordinate decentralized surveillance activities
- Integrate diseases surveillance at State and district level involve partners (Community, Private sector)

Coordinated by National Institute of Communicable Diseases
Government’s resolve to improve surveillance

- Department of Health Research created in the Ministry of Health, Oct 2007
  - Mandated to provide technical support for investigating outbreaks due to new and exotic agents

- National Institute of Communicable Diseases renamed as National Centre for Disease Control, July 2009
  - Remodeled on pattern of CDC
Integrated Disease Surveillance Project

Diseases under surveillance

Regular surveillance
- Vector borne diseases: Malaria
- Water borne diseases: Ac diarrhoeal diseases (Cholera), Typhoid
- Respiratory diseases: Tuberculosis
- Vaccine preventable disease: Measles
- Disease aimed at eradication: Poliomyelitis
- Other conditions: Road Traffic Accidents, Plague
- International commitment: Unusual clinical syndromes, Respiratory distress, Haemorrhagic fevers, other undiagnosed conditions causing death / hospitalization

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Integrated Disease Surveillance Project

Diseases under surveillance

Sentinel surveillance
- Sexually Transmitted infections/ blood borne: HIV, HBV, HCV
- Other conditions: Water quality; outdoor air quality

Regular periodic surveys
- Non-communicable diseases risk factors: Anthropometry, physical activity, blood pressure, tobacco, nutrition, blindness

Additional state priorities
Each state may identify up to 5 additional conditions for surveillance

GOI may include in a public health emergency any other unusual health condition
Achievements so far in implementation of IDSP

- Human resource
  - 646 epidemiologists; 85 microbiologists; 35 entomologists
- 85,000 sub-centres send weekly report of data on syndromes
- 15,000 PHC/CHC/hospitals send weekly probable case reports
- 60% complying weekly surveillance data sharing and prompt outbreak reporting
- State and District level rapid response teams in 28 states
- 215 district surveillance officers trained in field epidemiology training
Information and Communication Technology Network

- Nation-wide surveillance infrastructure
  - 760 sites: Video-conference facility
  - 332 sites: also satellite connectivity
- Weekly VCs with each state
  - Review
  - Monitor
  - Periodic training
IDSP portal functional

- Analysis at District, State, Central
- On-line
  - surveillance data entry
  - access to IDSP resources
  - submission and tracking of Financial Management Reports
- Comparisons of data weekly, monthly, yearly
ICT Network

- Toll free call centre for SOS reporting of outbreaks
- January to May 2009
  - 42,524 calls received
  - 91 health related
  - 9 outbreak alerts

- Media scanning and verification cell set-up in July 2008
  - to identify outbreaks reported by media and follow-up with states and districts on action taken
- Jan-May 2009: 507 media alerts reported and verified
Media Alert

Alert from the Media Scanning & Verification Cell, IDSP-NCDC.

<table>
<thead>
<tr>
<th>Alert ID</th>
<th>Publication Date</th>
<th>Reporting Date</th>
<th>Place Name</th>
<th>News Source/Publication Language</th>
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<td>Himachal Pradesh</td>
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Title: 40 ill due to food poisoning in Kangra, Himachal Pradesh.

Action By CSU, IDSP NCDC

Information communicated to DSU- Kangra, SSU- Himachal Pradesh.

Article is brought to your attention and may require action on your part:

Division of Epidemiology & Communicable Diseases
Outbreak Surveillance

- 24X7 Outbreak Monitoring Cell
- Outbreak detection and response reporting system
  - reported 553 outbreaks in 2008
Indian Council of Medical Research

- Autonomous organization within the Department of Health Research, Ministry of Health & Family Welfare
- Apex organization for directing, coordinating, conducting and funding health research
- Has a network of 26 institutes and 70 field stations across the country
- Some institutes are referral labs and WHO Collaborating Centres

Division of Epidemiology & Communicable Diseases
ICMR’s Centres as WHO CC

- Arboviruses: NIV
- Nutrition: NIN
- Filariasis: VCRC
- Epidemiology: NIE
- TB: TRC
- Leptospirosis: RMRC

Indian Council of Medical Research
Role that ICMR plays

Maximizing synergies
- Strategic research
- Product development and evaluation
- Demonstration of feasibility of alternate disease control approaches
- Surveillance at molecular level

Capacity strengthening
- Epidemiology
- Modern biology
Rapid Molecular Tools in Virus Identification: Avian Flu

NASBA results detecting very low amount of H5N1 RNA

H5N1 gene of avian influenza virus detected by RT-PCR

Real Time PCR System

State-of-art NASBA Platform
India’s experience with H5N1

- Helped develop laboratory capacity
- Improve skills in testing
- Developed preparedness plan
- Close co-operation between animal and human health departments
- Community awareness campaigns
- Confidence to tackle such outbreaks
- Extended testing and training facilities to region
Influenza Surveillance
H1N1

- 18 labs identified
  - 2 National Reference Laboratories (NICD and NIV)
  - 7 labs of ICMR network
  - 9 National labs

- Equipments supplied
- Training of labs staff
- Treatment being provided through public health system
H1N1 Response

- India benefited from prompt International response
- Had advance warning, information sharing helped
- Initial strategy: early detection, contact tracing and treatment
- Mitigation plan: public private partnership for testing and management of suspected cases
- International co-operation vital to fight pandemic
Integrated Disease Surveillance Programme Challenges

- Human resource
  - Epidemiologists
  - Microbiologists
  - Entomologists
- Improve performance standards; IDSP to become IHR 2005 compliant
- Participation of medical colleges, private practitioners
- Improve analysis and use of collated data
- Strengthen lab network
- Prompt availability from international market relevant biological material, equipment, diagnostics, training etc at affordable price and timely
Summary

IDSP with technical support from ICMR turning into a vibrant network

Steady progress

Challenges remain

Regional and international cooperation necessary
Thank you!