Application of the Task Force framework in the European context. ECDC experience and suggestions.

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TB Programme – ECDC

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How can ECDC and experience from European countries help to strengthen and expand use of the Task Force framework for assessment of surveillance data, including development of the standards/process required for certification/accreditation?

Brief epi. background

Overview of ECDC work/experience/thinking for each of the component of the framework

Formulation of discussion points
Trends in notification EU/EEA and MS

5 yrs mean % change (27 MS)
The decline in tuberculosis has levelled off in the EU/EEA

Source: ECDC
European surveillance building on decade old experience of EURO TB

Annual reporting through TESSy (The European Surveillance System) of case based TB data from 30 EU/EEA through common ECDC/WHO EURO platform

TESSy common database and reporting interface for all EU/EEA countries and for all 49 EU notifiable disease and conditions (47 CD and AMR and HCAI)

Analysis of data by ECDC

Presentation of results in an annual report jointly published with WHO EURO
## Data submission to TESSy

<table>
<thead>
<tr>
<th></th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Data call</strong></td>
<td>01 July - 31 September*</td>
<td>01 August - 31 September**</td>
<td>?</td>
</tr>
<tr>
<td><strong>TB cases reported</strong></td>
<td>30</td>
<td>28</td>
<td>?</td>
</tr>
<tr>
<td><strong>Total Nr/Rate</strong></td>
<td>84591/17.0</td>
<td>82611/16.7</td>
<td>?</td>
</tr>
<tr>
<td></td>
<td>84105/16.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>MDR data</strong></td>
<td>28 countries (7 in group B)</td>
<td>25 countries reported (3 aggregated to CISID)</td>
<td>?</td>
</tr>
<tr>
<td><strong>TOM data</strong></td>
<td>21</td>
<td>22</td>
<td>?</td>
</tr>
<tr>
<td><strong>HIV data to CISID</strong></td>
<td>15 (16)</td>
<td>14</td>
<td>?</td>
</tr>
</tbody>
</table>
TB data validation

A validation programme is used (in STATA) for the datafile extracted from TESSy

automatically checks data for internal inconsistencies, and a detailed list of controls

user then compares the output to the Country Profile of the previous year/s vis-à-vis:

- Total notifications and sex ratio;
- The proportion of: foreigners, previously treated, pulmonary, culture / smear positive;
- The number of cases resistant to INH, RMP, EMB and SM;
- The distribution of OUTCOME categories
ECDC Surveillance project

Development of a tool for monitoring and evaluation of data quality in surveillance systems for communicable diseases

Aiming at assessing:
Completeness: internal and external completeness.
Validity: internal and external validity
Sensitivity
Representativeness

for all communicable disease

5 stage project with a planned piloting of a draft tool in at least three Member States
Discussion points

Quality component perhaps the most straightforward to achieve:

- Fairly well established procedures
- High level of acceptability
- Particularly in the case of case based databases applicable at highest reporting level

TB surveillance quality assessment as part of a wider and universal CD surveillance quality assurance:

- Increase feasibility
- Decrease resource requirement
- Ensure sustainability of TB surveillance in the future (lessons from the past – avoiding isolation of TB surveillance
- Foster integration of TB in larger CD control strategies
ECDC in the development of the monitoring framework of Action Plan intends to highlight the importance of:

- Analysing time-changes in notifications alongside changes in case-finding, case definitions, HIV prevalence and other determinants of changes in TB incidence and TB mortality.

- Trends in mean age, ratio children:adults, paediatric notifications, sentinel events (TB meningitis).
Trends in notifications
Country A vs. B

Country A

\[ y = 0.0021e^{0.005x} \]

Incidence rate per 100k

Country B

\[ y = 2 \times 10^5 e^{-0.0503x} \]

Incidence rate per 100k
Ratio notification rate in children : notification rate in adults  
Country A vs. B

Country A

Country B

R² = 0,8677

R² = 0,6086
Mean age trends
Country A vs. B

Average age, Country A

Average age, Country B

\[ R^2 = 0.2791 \]

\[ R^2 = 0.5173 \]

\[ R^2 = 0.5519 \]

\[ R^2 = 0.1676 \]
Accounting for Foreign Origin Cases
Country C

All cases

Foreign origin

Nationals
Discussion points

Trend analysis feasible with both aggregated and individual dataset

Can be performed at the highest layer of the reporting system

Are age and paediatric trends reliable to validate trends in the notified cases?

Are trends sufficiently reliable to use them as a standalone measure of the progress towards elimination/TB control?
Assessment of surveillance sensitivity (and by extension of case detection) remains the gold standard in assessing the real burden of TB and the impact of control activities by measuring changes in incidence/prevalence.

Up to Member states
Time and resource consuming
Require expertise
Commitment to periodic reassessment

Are we demanding too much from already strained resources?

Could there be alternative solutions?
MDG goal and targets

5 targets for global TB control
MILLENNIUM DEVELOPMENT GOALS
"to have halted and begun to reverse incidence."

Implementation (DOTS)
Indicator 24 (target year 2005)
Case detection 70% (> 6 m diagnosed)
Treatment success 85% (> 5 m cured DOTS)

Impact
Indicator 23 (target year 2015 cf 1990)
Prevalence 50% of ≈ 300/100K
Deaths 50% of ≈ 30/100K
(< 1m deaths)

Courtesy of Chris Dye
If impact measurement should ultimately monitor the reversal in incidence......

then assuming that sensitivity of the system in capturing incident TB cases remains constant:

Could trend analysis serve the purpose of measuring progress towards the MDG?
Certification of data as direct measure of incidence/mortality certainly remains the ultimate goal. However,

Cumbersome process

Political implications of “certifying” country surveillance systems (which implicitly would need to be done in order to certify data)

Might be feasible in high burden countries which might be the least ready for the process

Could an intermediate solution be proposed:

Assessing interpretability and reliability of trends by evaluating:

Variability of surveillance sensitivity

Concordance of trends and sub trends
Ultimately notification trends analysis might not be enough in certain settings.

Monitoring of transmission

Molecular surveillance
   Percentage of clustering
   Strain variability

Certainly a future perspective
Conclusions

Quality component remains the most straightforward starting point for standards/benchmarks (?)

Need to a more universal approach to surveillance quality assessment – join forces to ensure sustainability
   → standards for surveillance quality shared with other CD (?)

Could trends analysis play a more prominent role
......provided that sensitivity of surveillance system or surveillance practices remain fairly constant through time

Given that reversal of incidence is the ultimate goal and that a thorough assessment of the true incidence (or indirectly of case detection) is time consuming and unlikely to happen for all countries

Could a standardized approach (with standards and benchmarks) to trend analysis be an alternate or complementing solution to full certification?
Certification

Surveillance certification remains the ultimate goal but.... certification might be too bold as an approach self-certification could be a more acceptable approach with the support and collaboration of the Task force

This would require time....

“2015 is close. We want direct measurement of trends”

could a **green light for interpretability of trends** be given in the interim period?
How can ECDC and experience from European countries help to strengthen and expand use of the Task Force framework for assessment of surveillance data, including development of the standards/process required for certification/accreditation?