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# Session 12. Quality assessment and assurance in the civil registration and vital statistics system

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## Basic framework

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**Adequately funded evaluation activities are essential**

- For improving systems that have deficiencies
- For maintaining systems that function satisfactorily

**Quality assurance**

**Quality assessment**



# Basic framework

United Nations Statistics Division

## Quality assurance

- Encompasses each stage of CRVS operations
- All vital events are registered without duplication
- All related information is recorded
- Information is compiled, validated and processed
- Vital statistics are released in timely manner

## Quality assessment

- Specific studies for specific questions
- Coverage of registration of vital events
- Accuracy of variables
- Overall functioning of sub-systems
- Can be ad hoc or regular exercises



# Standards

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Completeness

Correctness  
or Accuracy

Availability

Timeliness

## Completeness

- \* Every vital event is registered
- \* Statistical report is filed for every registered event
- \* **Coverage error**

## Correctness

- \* Every data item is filled
- \* Data items are accurately filled
- \* **Content error**

## Availability

- \* Data and statistics are available to users in a friendly format

## Timeliness

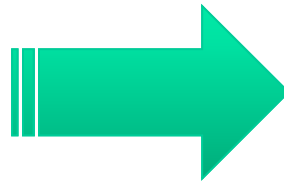
- \* CR: events are registered within time limit and statistical reports are filed according to schedule
- \* VS: prompt dissemination



# Quality assessment methods

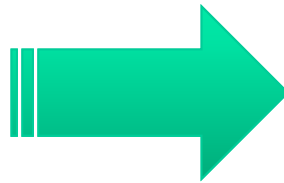
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Direct methods



Matching of records

Indirect methods

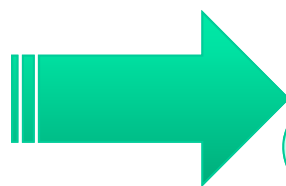


Demographic analysis



## Quality assessment. Direct methods

Matching of records



Match registration records with records from an *independent* source

- Birth registration with death registration
- Administrative records
- Lists from population censuses and surveys
- Dual records system
  - Set up survey specifically to collect information on vital events

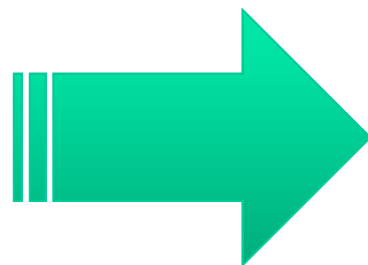


## Quality assessment. Direct methods

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Practical example: Health services of the state of Queensland, Australia

Primary source:  
Perinatal Data  
Collection



Secondary  
source:  
Birth  
registration

Linkage file:  
file containing  
person identifiers  
from various  
admin. sources





## Direct methods. Practical example: Health services of the state of Queensland, Australia

### Some results

- 2.7% of Perinatal Data records could not be linked to Registration data.
- Significant differences in linkage according to ethnic groups

|                               |                               |
|-------------------------------|-------------------------------|
| <b>Indigenous mothers</b>     | <b>15-18% de sub-registro</b> |
| <b>Non-indigenous mothers</b> | <b>1.8% de sub-registro</b>   |

- Remote and very remote geographical areas also had high rates of under-registration

<https://www.health.qld.gov.au/hsu/peri/underreg.pdf>



## Quality assessment. Indirect methods

- Comparison of trends
- Delayed registration
- **Comparison with census data**
  - If at least two censuses: balancing equation, Lexis diagram
  - If only one census: compare aggregates
- **Methods for incomplete data**
  - *Manual X*
  - *Tools for Demographic Estimation* (online and print update of *Manual X*, <http://demographicestimation.iussp.org/>)
- Questions on birth registration in surveys or censuses

Demographic  
analysis



## Direct or indirect ?

|                  | Advantages  | Limitations   |
|------------------|---|---|
| Direct methods   | <ul style="list-style-type: none"><li>• More accurate assessment of <b>registration</b> completeness</li><li>• May indicate sources of under or overregistration</li><li>• Can be applied at any geographical level</li></ul> | <ul style="list-style-type: none"><li>• Accuracy is affected by the choice of the second source of records</li><li>• True independency of the second source is unlikely</li><li>• Matching criteria difficult to find if there is no ID number</li><li>• If manual: time consuming</li><li>• If automated: computer algorithms can get too complex</li><li>• Cost</li></ul> |
| Indirect methods | <ul style="list-style-type: none"><li>• Prompt assessment of vital statistics completeness</li><li>• Several can be applied at various geographical levels</li></ul>  | <ul style="list-style-type: none"><li>• Some have assumptions that may not hold</li><li>• Some require reliable data from two censuses</li><li>• Accuracy is affected by the degree of census completeness</li></ul>  |



## Direct or indirect ?

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- If vital statistics are compiled fully from civil registration, both direct and indirect measure the quality of civil registration and vital statistics.
- However, coverage and accuracy of vital statistics are also affected by the steps in the production
- When the two systems do not correspond completely, measures of quality of one system cannot be used to represent another



## Direct or indirect ?

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Choosing the appropriate method depends on:

- Objectives
- Degree of precision
- Timeliness
- Type of event
- Resources



Gracias Thank You  
Merci Спасибо  
شكرا 谢谢