Effective Vaccine Management (EVM)
Global Data Analysis
2010-2013

EVM – setting a standard for the vaccine supply chain

World Health Organization

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The Effective Vaccine Management (EVM) Assessment

What does EVM assess?

- EVM assesses each level of the supply chain
  - Primary level (PR): Vaccine stores that receive vaccine direct from an international vaccine manufacturer or distributors or a local vaccine manufacturer.
  - Sub-national level (SN): Vaccine stores that receive vaccine from a primary store or higher level sub-national store. There may be 0, 1, or more SN levels.
  - Lowest distribution level (LD): Vaccine stores that receive vaccine from a primary level or a sub-national store and supply vaccine to one or more health facilities.
  - Service point level (SP): Facilities that receive vaccine from any higher level store and supply immunization services.

- EVM assesses 9 areas of vaccine management – the 9 EVM “Criteria”

How does EVM assess?

- A representative sample of sites is selected at each level of the supply chain.
- Each of the 9 EVM Criteria is assessed at each supply chain level by observation, inspection of infrastructure and records, and by interview of staff.
- Process and performance indicators are evaluated in each of the 9 areas at each level.
- Indicator scores are combined to give criterion scores for each area at each level.
- An area of vaccine management is considered “Effective” if its criterion score is greater than or equal to 80% - the EVM standard.
75 countries have conducted at least one EVM assessment between 2010 and 2013.

4 countries, Senegal, Vietnam, Cameroon and Sierra Leone, have conducted 2 assessments.

For those countries that have conducted 2 assessments, only the years of the most recent assessments are shown.
EVM Criterion Scores
2010-2013

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Update: WHO EVM database, December 2014
Globally, there is a broad range of performance in each criterion at each level; only E3 at the primary level has a median score above 80%.

- **E3 Storage and transport capacity** and **E4 buildings and equipment** are relatively strong at each level of the supply chain.
- Among the weakest areas are **E2 Temperature monitoring** at the national level, **E5 Maintenance** at the lower levels, **E6 Stock management** at the lower levels, and **E7 Distribution** to the lower levels.
EVM Country Composite Scores (2010-2013)

Data Source: WHO EVM database. November 2014
Map production: Immunization Vaccines and Biologicals, (IVB), World Health Organization
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Bottom 25% (18 countries)
Percentiles 26 to 50 (17 countries)
Percentiles 51 to 75 (17 countries)
Top 25% (18 countries)
EVM Criterion Scores by Region
2010-2013
More than 75% of countries in EMR & EUR meet the standard at LD & SP; more that 75% of EUR countries also meet the standard at SN.

Otherwise, with very few exceptions, temperature monitoring is below the EVM standard of ≥ 80%.

The PR E2 scores are low in all countries in all regions.
Only the PR and SN median scores in EMR exceed the 80% EVM standard for preventive maintenance of equipment and buildings; all 4 PR stores and 3 of the 4 SN levels assessed meet the EVM standard.

The maintenance of cold chain infrastructure gets progressively weaker as vaccine flows through the supply chain from PR to SP.
With a couple of exceptions, none of the regions meet the EVM standard of >= 80% in stock management.

The exceptions are the PR, SN and LD levels in EMR; all 4 PR stores and 3 of the 4 SN and LD levels assessed score above 80%.

Stock management procedures and performance gets progressively weaker as vaccines flow through the supply chain from PR to SP.
In general, all regions perform poorly in the organization of vaccine distribution between the different levels of the supply chain.

EMR and EUR countries score slightly higher in general than the countries of other regions.
EMR and EUR score highly in vaccine management; at each level more than 75% of the countries meet the EVM standard of $\geq 80\%$.

In AFR, PAH, SEAR and WPR, at each level of the supply chain, less than 25% of countries meet the EVM standard (exception WPR PR).
Selected EVM Indicator Scores

2010-2013

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Update: WHO EVM database, December 2014
Availability indicators (2010-2013)

- **% of stock record templates that contain all required fields**: 18% (Current Year), 28% (Past Year), 50% (Overall)
- **% of facilities with matching vaccine and diluent stock levels (mismatch <1%)**: 61% (Current Year), 63% (Past Year), 64% (Overall)
- **% of facilities with accurate vaccine stock records (mismatch with actual stock level <1%)**: 65% (Current Year), 68% (Past Year), 69% (Overall)
- **% of facilities that were able to fully satisfy all requests from lower level facilities or for outreach in the past year**: 68% (Current Year), 60% (Past Year), 62% (Overall)

*The data was collected between 2010 and 2013 in 58 countries across all 6 WHO regions.*
Quality indicators (2010-2013)

% of facilities in which all cold and freezer rooms have continuous temperature recorders

% of facilities in which all vaccine refrigerators have continuous temperature recorders or freeze indicators

% of facilities that pack freeze indicators with deliveries of freeze-sensitive vaccines

% of health facilities in which all VVMs are before the discard point

*The data was collected between 2010 and 2013 in 58 countries across all 6 WHO regions.
Efficiency indicators (2010-2013)

- % of facilities with an up to date cold chain equipment inventory: 57% (Primary), 62% (Sub-national), 58% (Lowest distribution), 89% (Service point)
- % of refrigerators that are fully functional: 89% (Primary), 88% (Sub-national), 85% (Lowest distribution), 89% (Service point)
- % of facilities with a functional telephone, radio or internet connection: 95% (Primary), 82% (Sub-national), 85% (Lowest distribution), 78% (Service point)
- % of facilities with a computerised stock management system: 19% (Primary), 48% (Sub-national), 76% (Lowest distribution), 78% (Service point)

*The data was collected between 2010 and 2013 in 58 countries across all 6 WHO regions.
EVM public access website (http://www.who.int/immunization/programmes_systems/supply_chain/evm/en/)

A one-stop shop for all things EVM:

- Download EVM tools and user guides:
  - Background EVM documents
  - EVM assessor training materials
  - EVM assessment report template
  - EVM site selection tool and user guide
  - EVM Assistant tool and user guide
    This tool facilitates the calculation of available and required storage and transport capacities.
  - EVM Analysis & Recommendations tool
    This tool facilitates the identification of gaps and drafting of recommendations.

- Link to EVM Assessors website (https://extranet.who.int/evm/)
  - Download latest versions of the offline assessment tool and questionnaire.
  - Upload completed EVM assessment reports and datasets.
  - This website is for registered EVM assessors only. To register you must first complete a WHO EVM assessor training course.

- Link to EVM e-learning website (http://apps.who.int/immunization_delivery/systems_policy/logistics/evmlearning/index_0_1_1.php)
  - An online training course on how to use the EVM assessment tools.
  - This course compliments the formal WHO training course, it does not replace it.
  - It is highly recommended that you complete this training BEFORE you start using the EVM tools.
Thank you

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