Integrated Healthcare Technology Package: Introduction

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World Health Organization, Genève

Geneva | June 2007
Why iHTP …
1. Halve extreme poverty and hunger
2. Achieve universal primary education
3. Empower women and promote equality between women and men
4. Reduce under-five mortality by two-thirds
5. Reduce maternal mortality by three-quarters
6. Reverse the spread of diseases, especially HIV/AIDS and malaria
7. Ensure environmental sustainability
8. Create a global partnership for development, with targets for aid, trade and debt relief
Goal 4: Reduce child mortality

- Survival prospects have improved in every region,
- 10.5 million children died before their fifth birthday in 2004 – mostly from preventable causes.
- The vast majority of these children (94 per cent) lived in 60 countries.
- Sub-Saharan Africa, with only 20 per cent of the world’s young children, accounted for half of the total deaths.
Goal 6: Combat HIV/AIDS, malaria & other diseases

- The epidemic remains centered in sub-Saharan Africa.
- With just over 10 per cent of the world’s people, the region is home to 64 per cent of HIV-positive people and to 90 per cent of children (under 15) living with the virus.
- Twelve million sub-Saharan African children are orphans.
- Around 59 per cent of HIV-positive adults in sub-Saharan Africa – a total of 13.2 million people are women.
Plan for scaling up HIV/AIDS treatment

WHO is moving urgently towards achieving the target: to deliver antiretroviral therapy (ART) to 3 million people with HIV/AIDS living in developing countries before the end of 2005.

For this purpose WHO devised a five pillar strategy (only strategy item 2 listed)

Provide Urgent, Sustained Country Support

- Start the emergency expansion of **Training** with a goal to train 100,000 professional and lay staff.
- Strengthen **Physical Resources** like laboratories and testing equipment.
The Reality ...
Typical Healthcare Delivery Scenario

Strategic Level

Human Resource  | Pharmaceuticals  | Medical Equipment

Operational Level

World Health Organization
Problem scope

- WHO estimated that in most developing countries in the early 1990’s half of the inventory, in some cases as much as 75-80 percent, lay idle at any given time.

- The probable level of non-functional medical equipment in developing countries under various assumptions ranges from 10% to 60%.

- The WHO estimated that the asset value of equipment in 2002 was approximately USD709 billion, with a developing country share of USD85 billion.

- Under-utilized assets (at 15%) represent approximately 22% of total health care spending in the WHO African Region.
Summary

- Within WHO technical programmes health needs and priorities (often) are known, but rarely linked to resource planning;
- Programme and implementation strategies have often been developed without looking at long-term resource planning implications;
- Resource are planned and implemented vertically;
- Implementation, training, monitoring and evaluation often done in isolation;
- The strategic and operational divide is evident;

*Healthcare technology is a major strategic factor in determining a community perception of the health system*
What is iHTP ...
What is iHTP

- iHTP is a planning methodology and software-based tool that provides guidance on an adequate mix of resource inputs, comprising human resources, medical devices, pharmaceuticals and facilities, needed to deliver a defined set of health interventions.

- iHTP integrates healthcare needs, disease profiles, patient demographics, clinical practice, human resource and technology requirements, availability and constraints, associated capital and recurrent costs, and system’s technology management capacity into one single tool.
Important Reminder

- Focus is on resource planning and costing and not on the prescription or adherence of clinical practice and guidelines
Guiding Principles

If you cannot measure something, you cannot manage it.

If you cannot manage it, you cannot improve it!
Challenges...
Challenges

- Providing health care effectively and efficiently involves putting together a great variety of resource inputs to produce an extraordinary array of different service outputs.

- The proper match between the supply of inputs and health system requirements, the right mix among the many different categories of inputs, the balance between capital investments and recurrent costs, and system's capacity to manage purchased inputs throughout their entire life cycle are vital for the effective delivery of health services and satisfactory performance of the health system.
**iHTP Objective**

- These challenges are comprehensively addressed by the Integrated Healthcare Technology Package (IHTP) allowing for informed decisions on systematic, logical, and thus strengthens optimal and rational planning, acquisition, deployment, utilization and management of healthcare technology resource inputs.
Secondary objectives (thematic)

- Strengthened HCT resource planning knowledge and capacity for various levels of care.
- Improved capacity and sustainability in target countries to plan their own healthcare technology resources.
- Thematic strengthening of resource planning, impact of recurrent, systemic and programmatic costs associated with technical assistance (bilateral and multilateral) at country level.
- Harmonization of HCT activities (including standards, nomenclature etc.).
- Increased awareness of health care management and its impact on health care service delivery.
Areas of Application …
Gaps analysis and planning

- Gaps analysis is a disciplined, creative process for determining how to take your organization from where it is today to where you wish it to be in the future.
The system …
System Overview

iHTP Simulation Tool

- Sharing of resources
- Clinical Guidelines
- HCT Constraints
- Patient Profiles

iHTP Databases

- Country Database
- Reference Database

Simulations

- Simulations and Planning
System architecture

- Focus on having a central repository for commonly used data such as medical equipment terminology, pharmaceutical lists and clinical procedures.

- Substantial effort in order to eliminate the need for each user to create a custom database, reducing duplication of effort and increasing the accuracy of the data everyone uses.
System elements...
Medical Equipment

- Comprehensive medical equipment database (UMDNS based);
- Technology, maintenance and costing data;
- Usability and technical criticality indicators;

- Separated scenario and reference database for improved country implementation
Pharmaceuticals

- Comprehensive pharmaceutical database;
- Based on WHO pharmaceutical database
- Scheduling and drug interaction capability;
- Country specific costs can be linked to any pharmaceutical
Clinical guidelines

- iHTP reference database contains 4500 pre-linked procedural
- 250 clinical guidelines (iHTP terminology: scenarios) have been completed and are available on the web;
- Scenarios can be adapted to any country situation;
Epidemiological profiles

- Population indicators
- Coverage rate and hospital admissions
- Target indicators (i.e. Caesarean rates) can be model to over specific years;
- Allows scaling up
## Health package modelling

### Health Package

<table>
<thead>
<tr>
<th>Name:</th>
<th>WHO HP with constraints</th>
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</thead>
<tbody>
<tr>
<td>Country:</td>
<td>WHO</td>
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<td>Creation date:</td>
<td>15/01/2007</td>
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</table>

**Calculation period:**

- 2007
- 2007
- Average

### Details

- Scenario
- Epidemiological Profile
- Constraint

### Calculate

#### Scenario Name

- MPS.08.B - Malaria in Pregnancy - Hospital
- MPS.17.a - Ekampela - Health Centre
- MPS.80.e - Malaria in Pregnancy - Health Centre

#### Level of Care

- District
- Clinic

#### % At Level (Seeking Care)

- 60
- 80

#### Epidemiological Profile

- Typical District

#### Target Indicator

- Malaria
- Deliveries
- Antenatal Care

#### Indicator No.

- 15,575
- 5,107
- 15,575

#### Coverage Indicator

- Malaria
- Malaria
- Antenatal Care

#### Coverage Rate

- 77
- 77
- 67.5

#### Total Req. Intervention

- 7,156.7
- 3,145.9
- 6,410.5

#### Technology Constraint

- WHO Constraint
- WHO Constraint
- WHO Constraint

### Position

<table>
<thead>
<tr>
<th>Position</th>
<th>Min. Salary/yr (Min)</th>
<th>Min. Salary/yr (Max)</th>
<th>Min. Quantity Required</th>
<th>Status</th>
<th>Training/yr (Man)</th>
<th>Recurrent Cost (Max)</th>
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<tr>
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**Geneva | June 2007**
System outputs…
## Reports - Static

- **Static healthcare technology reports** (for pharmaceuticals; medical equipment; human resources and facilities);

- Can be used for static equipment lists i.e. pedicure equipment procurement; technology scope evaluation;

- **Does not indicate quantity**

### Nomenclature

<table>
<thead>
<tr>
<th>Nomenclature</th>
<th>Device Class</th>
<th>Device Group</th>
<th>Usability</th>
<th>Status</th>
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<td>Critical</td>
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<td>Folder, Patient</td>
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**Reports - Dynamic**

- Dynamic healthcare technology reports includes quantities – calculation is based on workload and schedule;
- Provides operational costs; dynamic quantities; recurrent and opportunity cost;
- Takes into consideration healthcare technology availability;
- Reports provided “drill down technology” – ideal in evaluating cost drivers.

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Number of Cases</th>
<th>Medical Devices</th>
<th>Pharmaceuticals</th>
<th>Facilities</th>
<th>Human Resources</th>
<th>Total</th>
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<tr>
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## Drill-down Capability

<table>
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<tr>
<th>Scenario</th>
<th>Number of Cases</th>
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<th>Facilities</th>
<th>Human Resources</th>
<th>Total</th>
<th>Average Cost</th>
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<tr>
<td>MPS-06.a - Malaria in Pregnancy - Health Centre</td>
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<td>R5,760.20</td>
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<table>
<thead>
<tr>
<th>Position</th>
<th>Patient Load</th>
<th>Work Load</th>
<th>Min. Quantity Required</th>
<th>Salary/yr (Max)</th>
<th>Training/yr (Max)</th>
<th>Recurrent Cost (Max)</th>
<th>Operating Cost (Max)</th>
<th>Average Cost (Max)</th>
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<tbody>
<tr>
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<td>R1,430.00</td>
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### Linked Technique

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### Laboratory Assistant

#### Details

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<td>3</td>
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<td>CC004</td>
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<td>Rand (ZAR)</td>
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Country examples...
Country Implementation

- Mapping of Mother and Child health package;
- Approximately 30 guidelines – based on observations and recommended clinical practice;
- Primary and secondary level of care;
- Resource requirements, including operational and recurrent costs;
**Ukraine - Overview**

- Identification of cost drivers
- Minimum quantities of resources
- Critical path identification
- Optimization through evidence

<table>
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<tr>
<th>FURNITURE GENERAL</th>
<th>Group</th>
<th>Type</th>
<th>Simulated Qty</th>
<th>Total Required</th>
<th>Unit Cost (min)</th>
<th>Unit Cost (max)</th>
<th>OPER COST</th>
<th>FIXED REPLACE COST</th>
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| Total                                      | 8                 | 9.8      | 14.0          | 2,834.02        | 14,719.00       |

Ukraine, UAH
Development vision...
Vision

- Expansion of costing capabilities, including systemic and programmatic costs (Sept 07).
- Expansion of the “scenario” base – focus on evidence based guidelines.
- Monitoring and Evaluation.
- Network of users to include; “developed countries” and organizations
- Sustainability
Possible Collaboration…
WHO's strategic directions

- Generation and dissemination of evidence-based norms and standards for prevention, treatment, care, support, and their application to promote healthy lifestyles and reduce risk factors.

- Advocacy and technical support for the building of normative, technical and managerial capacity in countries for the implementation of effective interventions that result in equitable and sustainable health systems.

- Strengthening partnerships and building consensus for the development, implementation, monitoring and evaluation national policies and strategies that foster an enabling policy and institutional environment.
Thank you

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