Procurement of Complex Medical Equipment

...selection, installation, training, after sales service, maintenance

Paul LaBarre
Good news / bad news

The number of children who died before turning 5 fell by more than 50 per cent worldwide between 1990 and 2015.

Despite this, 16,000 children under age 5 die every day from preventable, treatable diseases.
Welcome to UNICEF Supply Catalogue

The Supply Catalogue contains specifications for over 2,000 commodities that respond to the needs of children and their families. The Catalogue is designed to help you identify the most appropriate supplies for your programmes, assist you in your supply planning, delivery and monitoring, and help maximize your collaboration with UNICEF Supply Division.

To find supply items and descriptions, please click on the specific product category or use the "Search" function. If you cannot find an item, go to "Help".

UNICEF Country Offices, National Committees, and Procurement Services partners can initiate orders for supplies. Please click on "How to Order".

Country Offices can access an order tracking module by logging in at the top-right navigation bar on this page.

NB: Prices that appear in the Catalogue are Indicative only. Actual prices may vary, depending on individual suppliers.
UNICEF Supply Division: The supply chain

Definition of need
Budgeting/Planning
Procurement
Delivery and clearance
Inspection
Warehousing, distribution, re-order
Utilization by end-user
Monitoring and evaluation

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Guiding principles

• promotion of UN objectives
• fairness, integrity and transparency through competition
• economy and effectiveness
• best value for money

http://www.unicef.org/supply/index_39627.html
Director General, 1st Global Heath Forum; 2007:

• 70% of medical equipment in hospitals does not work
• 10—30% donated equip never becomes functional
• Dr Malkin’s paper: 38% equip out of service
Where are we today?

- At least 40%\(^1\) of medical equipment is out of service (many studies cite 50-80%)\(^2\)
- Up to 80% of medical equipment in many sub-Saharan African countries is donated or funded by foreign sources\(^3\)
- 70-90% of donated equipment is never operationalized\(^4\)
- Only 19 BME teaching units in sub-Saharan Africa (2000)\(^5\)
- 2 sub-Saharan main-land countries have a registered BME Professional Association\(^6\)

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2. EMRO Technical discussions, “The role of medical devices and equipment in contemporary health care systems and services”, June 2006
4. CHA Medical Surplus Donation Study: How Effective Surplus Donation Can Relieve Human Suffering, April 2011
6. IFMBE and WHO country data (2015)
Complex medical equipment

• Physical Absorptive capacity
• Personnel & Training
• Process
• Organizational behavior:

Biomedical engineering is seen as an expense center rather than a necessary investment to protect valuable infrastructure.
Readiness

The issues
• Sufficient electrical hook-ups
• Sufficient medical gas hook-ups
• Adequate floor space
• Adequate access

Solution?
• Planning checklist co-developed by suppliers
Dirty electricity

The issues
• Fluctuations
• Brownouts
• Blackouts

Solution?
• Monitoring electrical levels
• Voltage regulators
• UPS + back-up generators
Staffing

The issues

• Undertrained, under-motivated staff

Solution?

• Clearly defined job descriptions
• Jurisdiction & Accountability
• Training on new equipment

Photo: UNICEF/Paul LaBarre
Health technology management

The issues

• Wide variation in performance

Solution?

• Standards, expectations clearly defined, communicated from MOH to facility-level directors

• Establish reasonable KPIs for equipment life

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Preventative Maintenance

The issues

• PM not integrated into most health systems
• Expense center?

Solution?

• Establish culture of PM
• Necessary investment protects infrastructure
• Integrate with HTM
Corrective maintenance

The issues

• CM not integrated into most health systems

Solution

• Establish processes for PM
• Clearly defined KPIs
Spare parts

The issues

• No spare parts kept on site
• No mechanisms to procure
• No budgets

Solution?

• Include sufficient spare parts with every capital expenditure
• Integrate spare purchase into procurement process

Photo: UNICEF/Paul LaBarre

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Basic BMET tools

The issues
• Most often supplied with small useless set

Solution?
• Defined standard
• Procurement mechanisms established for full set of tools

Photo: UNICEF/Paul LaBarre
Advanced BMET tools: analyzers/calibrators

Photos: UNICEF/Paul LaBarre
Warrantee

The issues

• 1 yr standard is often not enough

Solution?

• 2 and 3 year options should be considered in context of internal capability to maintain equipment and lifespan KPIs.

• Clear understanding of warrantee terms

Photo: UNICEF/Paul LaBarre
After sales service

The issues
• Some facilities lack BME/BMET staffing altogether

Solution?
• Consider ASS as a means to maintain high level of “in-service” equipment during and after warrantee

Photo: UNICEF/Paul LaBarre
Equipment disposal plan

Photos: UNICEF/Paul LaBarre

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UNICEF’s supply function vision

2005
- Direct Delivery
- Procurement Services

2008
- Direct Delivery
- Procurement Services

2010
- Direct Delivery
- Procurement Services
- Capacity Development
- Innovation

2013
- Direct Delivery
- Procurement Services
- Capacity Development
- Innovation & Market Influence

2020
- Direct Delivery
- Procurement Services
- Capacity Development
- Supply Financing
- Evidence, Analysis & Knowledge
- Products, Services & Markets

2030
- Direct Delivery
- Procurement Services
- Capacity Development
- Supply Financing
- Evidence, Analysis & Knowledge
- Products, Services & Markets
Quick reference to LTA’s for sophisticated equipment:

- Outpatient, inpatient, and diagnostic equipment
- Sterilization equipment
- Operating theater equipment
- Resuscitation, ventilation, oxygen therapy
- Thermotherapy equipment
## Installation and training (clinical and maint)

Quick reference to:

- Installation
- Clinical training
- Technical training

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<tr>
<th>Code</th>
<th>Item Description</th>
<th>Installation</th>
<th>User training</th>
<th>Technical training</th>
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<td>Sterilizer, steam, 20L, electric, w/access</td>
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<td>S0002060</td>
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<td>S0002063</td>
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</table>
Raising awareness

Workshops for hospital managers

• Example: Nov 2015 workshop in Senegal organized by JICA

Messaging:

• Maintenance is a necessary investment to protect valuable infrastructure.
• Needs to be modeled and repeated!

Thank you!