

GLOSSARY - HEALTH TECHNOLOGY

- Acceptance Testing:** a process of checking and testing new equipment on its arrival to ensure it is complete, safe, functioning properly, and entered into records, before it is put to use.
- Adjudication:** the process of evaluating and judging something, ie. tender adjudication is the process of comparing the bids submitted by equipment suppliers, assessing their differences, and contrasting their quality and relative advantages (see definition of Tender).
- African Federation for Technology in Healthcare (AFTH):** organization offering co-ordination and advice on technical issues for all persons working with health care technology on the African continent.
- Annual Action Plan:** a plan which describes the activities required to ensure that the necessary procurement and rehabilitation takes place so that the goals of the Core Technology Expenditure Plan are achieved; these annual plans cover the activities for the coming year as part of the overall long-term CTER
- Application Training:** the training of staff in the correct ways of applying equipment so that it can be used to its fullest (clinical) capacity, and providing them with experience in the application of taught procedures, eg. when different features will be employed for different patients or uses, the range of assistance the machine can offer them, how to alter the relationship between the machine and the patient or sample for different purposes, different procedures to pursue for different disorders or uses, etc.
- Appropriate Technology:** any technology which makes the most economical use of a country's natural resources and its relative proportions of capital, labour, and skills, and that furthers national and social goals; fostering appropriate technology means consciously encouraging the right choice of technology, not simply letting businessmen make the decision for you.
- Artisan:** a technical person trained, tested and certified in one or more trades (such as plumbing, carpentry, mechanics, electricians, etc.) who can be employed to undertake maintenance tasks.
- Best Cost Benefit Ratio:** choice of equipment based on the item that will be the most economically advantageous over its life-time and not simply the cheapest at the time of the initial sale; criteria which should be used to judge and compare products at the time of procurement (see definition of Tender).
- Calibration:** adjustments made to equipment to ensure the result/performance is true and correct, and to counteract the normal alterations in performance which occur due to the effect on technology of climate, time, wear and tear, etc.
- Clinical Engineer:** a person who has passed an undergraduate degree course in an engineering field and subsequently trained postgradually to apply their engineering skills to the problems of medical equipment; or has undertaken an undergraduate degree course specifically designed for the engineering aspects of medical equipment.
- Clinical Technologist:** a person who has passed a higher diploma course specifically designed for the engineering aspects of medical equipment; or has undertaken an ordinary diploma course in an engineering field and subsequently trained at higher diploma level to apply their engineering skills to the problems of medical equipment.
- Commissioning:** a series of tests performed, after new equipment is installed, to check and ensure that the equipment is functioning correctly at the start of its operational life.
- Condemning Committee:** a nominated group of staff at facility level who determine whether low technology equipment has reached the end of its life or can no longer be used reliably.
- Core Technology Expenditure Plan (CTEP).** estimates the amount of money required to ensure that all facilities are provided with functioning equipment at the level defined by the Standard Equipment lists by the end of a specified period (for example 5- 10 years), taking into account purchase, preparation, operation, maintenance, training, and replacement requirements.
- Cost Benefit Analysis:** a process of comparing the cost-effectiveness of different options or interventions to see which is the most economical route to take (the cost benefit may differ over the short term and the long term).
- Depreciation:** reduction in value of an asset as it ages.
- Donor:** see definition of External Support Agency
- Essential Service Packages:** details of the range of activities which must occur in order to achieve the health goals laid down for each level of the health service (see definition of Health Goals); definitions of the activities for a particular level of health facility which are realistic, appropriate, and affordable, thereby enabling technology needs to be rationally planned.
- External Support Agencies:** bodies such as international donors, technical agencies of foreign governments, non-governmental organizations, and financial institutions, who provide financial and material support to the MOH and its programmes; bodies which may run projects in a country to support the development of health care technology.

Freight Forwarder: a company which specializes in the organization of the packing, transport, and delivery of goods internationally across borders.

Generic Specification: a description of a piece of equipment worded in such a way so as not to link it to a particular manufacturer or model; describing an item by type not by name (see definition of Specification).

Health Care Technical Service (HCTS): a national organization and structure which supports the technology used in the delivery of health care (see definition of National Technology Management Division).

Health Care Technology: within health facilities there are many different types of equipment; for the MOH their definition of health care technology may depend on where the responsibility lies for the financing, procurement, and maintenance of the following items:-

Communication equipment	telephones, two-way radios, nurse-call systems, paging systems; etc
Fire fighting equipment	fire blankets., buckets, extinguishers, hose and sprinkler systems, etc
Fixtures built into the building	ceiling-mounted operating theatre lights, scrub-up sinks, fume cupboards; etc
Hospital Furniture	hospital beds, cots, trolleys, infusion stands, etc;
Medical equipment for clinical use	x-ray units, diathermy units, suction pumps, foetal dopplers, scales, autoclaves, infant incubators, centrifuges, etc;
Office equipment	computers, photocopiers, calculators, etc;
Office Furniture	desks, chairs, filing cabinets, etc;
Plant	boilers, lifts, air-conditioners, cookers, washing machines, refrigeration units, roller-ironers, water pumps, incinerators, solar panels, etc;
Service Supplies	electrical installations, water & sewage pipelines, gas supplies; etc;
Training equipment	overhead & slide projectors, video & tape recorders, etc;
Vehicles :	ambulances, cold-chain motorbikes, mobile workshops, etc;
Walking aids	wheelchairs, zimmer frames, crutches, etc;
Workshop equipment	hand tools, bench tools, testing equipment, etc.

Health Care Technology Package (I-ICTP): the range of inputs which need to be addressed if technology is to be successfully transferred into the health care environment, including: management and planning, allocation of financial resources, selection of technology, procurement, preparation for technology use, continued operation, maintenance and repair, personnel, training, technology assessment and research and development, and local production.

Health Goals: clear policies of the MOH regarding the kind of health service delivery which can be provided at each level of the health service ie. at each type of health facility (referral hospitals, district hospitals, health centres, and clinics); declarations of the care that can be offered at each health service level with the current financial, material and personnel resources available (eg. which facilities can provide Caesarean deliveries, which laboratory tests can be undertaken where, at which level can renal dialysis or ophthalmic surgery be offered, etc).

Health Management Information System (HMES): computerized data-gathering, collating, and reporting system for management indicators throughout the health service.

Hospital Engineer: a person who has passed an undergraduate degree course in an engineering field and subsequently gained experience of applying their engineering skills to the problems of hospital plant and service installations.

Hospital Furniture: see definition of Health Care Technology

JD Number: means of labelling equipment so that each individual item can be identified as distinct from another similar machine; applied when undertaking an equipment Inventory, and used for filing details of work undertaken on specific machines under their own equipment service histories.

Installation: tasks undertaken to fix equipment into place, and can range from building the equipment into the fabric of the room to simply connecting it to the electrical supply.

International Electro-technical Commission (IEC): international body which defines in detail standards to which equipment must be manufactured if it is to be recognized as safe; IEC 601 (Parts 1 & 2) is their standard concerning the manufacture of medical equipment to which bona fide companies should conform.

International Standards Organization (ISO): international body which defines minimum standards to which factories should conform if they are to show that they commit to quality manufacturing processes.

Inventory: a detailed listing of all the health care technology items that the MOH owns, their location and state of repair; a record which is annually updated.

Level of Technological Sophistication: equipment fails broadly into three categories - high, medium, and low technology reflecting the level of complexity of the internal workings of the machine; this can affect the ability to run, use or maintain the item.

Life-time: all equipment has a normal "life" expectancy dependent on the type of equipment and its technological sophistication (ranging from 5 - 20 years); the life will be shortened if equipment is not cared for (ie. maintained), and at the end of its life equipment must be replaced if the service it provides is to continue.

Life-time Costs: many pieces of equipment use consumable items (x-ray film, laboratory reagents, etc);

the cost of providing these inputs must be met throughout the equipment's life if it is to continue to provide a service.

Local Production: the manufacture of products nationally, or regionally in neighbouring countries.

Logical Framework: a device used by external support agencies when designing and evaluating country projects; a table detailing the various activities and outputs which are to be achieved through project interventions in order to reach the goal and purpose of the project, together with details of associated verifiable indicators, assumptions and risks.

Manufacturer's Representative: a private sector company nominated by an equipment manufacturer (producer) to act on the manufacturer's behalf in a particular country or region for the purpose of offering after sales support to their equipment; the level and quality of representation will vary depending on the nature of the contractual agreement between the two parties, ranging from subsidiaries (branches of the parent company providing strong support and access to the manufacturer), and agents (partners under contract who may provide adequate levels of support), to distributors (sales outlets with loose agreements who provide anything from a minimum level of support to no support at all).

Medical Equipment: see definition of Health Care Technology

Mobile Workshop: the tools and test equipment of a maintenance workshop mounted in a vehicle, so that the maintenance staff can travel to facilities and undertake repair work there.

Multi-Disciplinary Maintenance Teams: teams of maintenance staff made up of a variety of people with different skill mixes (electrical, mechanical, plumbing, electronic, carpentry, building, etc) to ensure that maintenance can be carried out in a hospital for all types of equipment (electrical and plumbing installations, buildings, plant, and medical equipment).

National Technology Management Division: the unit within the ministry of health with the structure, capacity and authority to oversee all aspects of health care technology management; the division within the MOH which employs technical staff; a government organization comprising a head office in the ministry of health, as well as a national network of maintenance workshops and technology management units.

Operational Training: the training of staff in the specific operating characteristics and operational procedures of a machine eg. how to switch it on, how to use its various functions, how to make it perform its customary cycles and routines, how to change the bulbs and batteries, etc.

Planned Preventive Maintenance (PPM): a specified schedule of activities carried out according to a timetable on equipment with the aim of preventing breakdowns and ensuring that equipment is operational and safe, thereby diminishing the amount of time equipment is out of service.

Plant: see definition of Health Care Technology

Purchase Agreements: a document describing i) the whole package of inputs that the customer wishes to purchase from the supplier as well as the equipment itself, in order to ensure that the equipment will function over its lifetime, including: performance guarantees, installation and commissioning, local after-sales service, spare parts, consumables, accessories, user and maintenance training, user and service manuals, maintenance contracts; as well as ii) national requirements including: delivery arrangements, payment terms, import regulations, environmental factors, etc.

Purchase Contracts: after a tendering process, the MOH enters into contracts with various suppliers from whom they will purchase certain types of equipment over a given time period (1 or 2 years) for use throughout the health service.

Purchasing Policy: MOH agreed strategy for rational and planned procurement of equipment in accordance certain prioritized areas of expenditure.

Refresher Training: a rolling programme of in-service training organized on a regular and on-going basis in order to keep staff skills up-to-date, and to cater for staff turnover.

Replacement Policy: MOH agreed strategy for the rational and planned replacement of equipment at the end of its life, and in accordance with certain specified valid reasons which have to be fulfilled.

Research and Development (R&D): process that equipment manufacturers and independent bodies go through to investigate and develop new health care technology products.

Service Supplies: see definition of Health Care Technology

Site Preparation: work required to ensure that the room or space where equipment will be installed is suitable (in terms of size, position, layout, and materials) and the environment is adequate for the particular purpose (eg. air-conditioned, dust-free, away from running water), and can include construction work, and provision of services such as electricity, water, gas and waste pipelines.

Specification: description of equipment in sufficient detail to clearly detail the functions and criteria that the equipment must fulfil; used for procurement purposes to ensure the suppliers can identify exactly what the purchaser requires, and to ensure the purchaser receives the type of equipment they want.

Standard Equipment Lists: lists of the equipment required per room, per department, for different types of health facility (referral hospital, district hospital, health centre, etc), so that the health service planned for that facility can be delivered.

Standardization: limiting the wide range of makes and models of equipment found in the health service; a strategy to ensure users and maintainers are familiar with the types of equipment they come into contact with, and to rationalize the large stocks of consumables and spare parts to be held.

Technician: a person who has passed an ordinary diploma course in a particular trade (such as plumbing, carpentry, mechanics, electricians, etc.) who can be employed to undertake maintenance tasks.

Technology Advisory Committee: a body established to advise senior management on general technology issues (such as selection, evaluation, and performance assessment), and comprised of members from the various disciplines within the health service that play a part in the life of equipment; a committee present at any level (facility, district, regional, and ministerial) to advise the senior management at that level on such technology issues.

Technology Assessment: a process of evaluating the efficiency and efficacy of existing equipment available on the market and the new and ever-evolving technologies arriving on the market.

Technology Management Unit: a team of people established to oversee all aspects of technology management at their level, eg. at facility level a handful of suitable staff chosen to oversee the daily running of technology within the facility, contact point for all equipment and maintenance matters, responsible for finding the correct solution, and may (depending on the size of the facility) undertake the maintenance themselves; at District or Regional level a group of staff from the various disciplines which play a part in the life of equipment chosen to oversee technology issues within their geographical area and responsible for advising the tender committee and senior managers of the MOH on general technology issues.

Technology Procedures Manual (TPM): a document containing the MOH's procedures and guidelines for implementing all aspects of the management of health care technology; a series of complementary manuals to cover the different procedures to be followed at central, regional, district or facility level for the implementation of technology management.

Tender: a formal procurement procedure following strict government procedures and regulations structured in such a way as to obtain responses from as many suppliers as possible, who will submit confidential bids so that the most competitive offer can be identified, by means of a Tender Board adjudication process which should consider the best cost benefit ratio of the choices available

Trade Testing: the formal method for testing and accrediting tradespeople (artisans such as plumbers, mechanics, electricians, etc) through a series of skill levels, governed by a national Trade Test Authority, and enabling tradespeople to be paid according to a set salary scale related to the Trade Test Level passed.

Training Plan: the annually revised strategy for providing equipment operators, maintainers, and associated staff with the required training in various equipment-related skills, through a variety of methods (in-service, academic courses, etc) and a variety of training organizations, together with the training timetable for the implementation of the plan; the Training Plan for the technology sector should be a subset of the overall Human Resource Development plan of the MOH.

Users: people who operate health care technology.

Workhand: a general maintenance worker possibly with some training and skills in basic maintenance in trade areas (plumbing, building, etc), but usually without formal qualifications.

Write-off. the process of condemning equipment which has reached the end of its life or is no longer safe to use, taking it out of service, taking it off the inventory records, and disposing of it.