Access to medical devices for Universal Health Coverage and achievement of SDGs

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Definitions: Medical devices are health technologies that include: in vitro diagnostics, implantables, medical equipment, software, surgical instruments, …
Medical devices need to be appropriate for each Health Care Facility

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>• Health post</td>
<td>• District Hospital</td>
<td>• Specialized hospital</td>
</tr>
<tr>
<td>• Health center</td>
<td>• General Hospital</td>
<td>• Regional hospital</td>
</tr>
</tbody>
</table>
Medical equipment (niveau 3)

- Are medical devices that require installation, maintenance, calibration, consumables, spare parts.

- Their design, evaluation, procurement, planning, training, maintenance and decommissioning usually done by biomedical engineers.
Medical devices that do not need maintenance:

**Single use devices**
- Cathéters
- IV sets
- Syringes
- Condom
- ...
- Last secondes
- / minutes/ heures
- Incinérable, single use
- $-$ $$

**Implantables**
- Prothesis
- Pacemaker
- Stent
- Intramedular
- Many years
- Biocompatible
- Patient monitoring
- $$-$$$$$$
The performance does not depend on the device itself but on the way they are used, this has to be safe and correct,

- Most medical devices require intermediary
- Device - doctor/ nurse/ technician – patient
More devices are being used by the persons themselves.

Medical and assistive devices, point of care in vitro diagnostics, personal protective equipment, mobile apps w diagnostics.
10,000 Types of medical devices
500,000 different products commercially available

- All medical equipment for patient care
- Diagnostic imaging
- Laboratory and pathology equipment
- Implantable medical devices
- Personal protective equipment
- Prosthesis and orthosis
- Quality assurance
- Radiation protection devices
- Single use devices (IV)
- Solutions and reagents
- Sterilization equipment
- Surgical instruments
Medical devices are technologies indispensable to accomplish the health related SDGs: prevent, diagnose, treat, palliate, assist.

<table>
<thead>
<tr>
<th>Target</th>
<th>Example of health technology/medical device</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1 by 2030 reduce the global maternal mortality ratio to less than 70 per 100,000 live births</td>
<td>Blood pressure meters, pregnancy tests, surgical instruments, cord clamps..</td>
</tr>
<tr>
<td>3.2 by 2030 end preventable deaths of newborns and under-five children</td>
<td>Neonatal resuscitation devices, warming devices/incubators, diagnostics</td>
</tr>
<tr>
<td>3.3 by 2030 end the epidemics of AIDS, tuberculosis, malaria, and neglected tropical diseases and combat hepatitis, water-borne diseases, and other communicable diseases</td>
<td>In vitro diagnostics to initiate the right treatment.</td>
</tr>
<tr>
<td>3.4 by 2030 reduce by one-third pre-mature mortality from non-communicable diseases (NCDs) through prevention and treatment, and promote mental health and wellbeing</td>
<td>Diagnostics: in vitro, blood glucose meters, pathology; x rays...imaging, Treatment: surgical instruments, implants, radiotherapy, inhalers chemotherapy, cardiac support</td>
</tr>
<tr>
<td>3.7 by 2030 ensure universal access to sexual and reproductive health care services, including for family planning, information and education, and the integration of reproductive health into national strategies and programmes</td>
<td>From condoms to contraceptive devices</td>
</tr>
</tbody>
</table>
Medical devices are required to achieve SDG3: universal health coverage, including financial risk protection, access to quality essential health-care services.
Global Atlas of Medical Devices 2017 includes global, regional and country profiles.

Nomenclature systems for medical devices.

Country participation in the Baseline Country Survey of Medical Devices.
Government establishes national policies, regulates and selects and supplies medical devices.

To define national policies

The medical device agenda within a national health policy

Development of medical device policies

WHO Medical device technical series
Pharmacists are to medicines as biomedical engineers are to medical devices!!.

- Country information on the number of biomedical engineers and technicians,
- Educational institutions
- Professional societies
- roles in the life cycle of a medical device, from conception to use.

Biomedical engineers study: math, calculus, chemistry, biology, pathology, physiology, electronics, mechanics, physics, biochemistry, biomechanics, transducers, optics, ...
National regulatory authorities in the governments decide which medical devices can enter the local market. (WHA67.20)
2. Sequence of process to warranty access to appropriate and safe medical devices.
Continuous Spectrum of health technology assessment for priority setting and decision making by income level

Low income countries with low coverage:
- Primary health care interventions
- HTA Define:
  - Essential medicines package, essential interventions mainly for MDG
  - Vaccination package
  - Prevention and some treatment.
  - Define which ones to add and to whom.

Middle and high income countries with medium coverage:
- HTA for defining:
  - Package of interventions on prevention, promotion, and some on treatment and rehabilitation.

Strong health system
- Integrated care
- People-centered
- Universal health coverage
- Middle and high income countries with medium coverage:
  - Package of interventions on prevention, promotion, and some on treatment and rehabilitation.
  - HTA to define extension on:
    - NCD interventions
    - Vertical programs.
    - For specific populations.

High coverage:
- Prevention, Diagnostic, Treatment, Rehabilitation, Palliative care, Home care
- Medicines, Devices, interventions
- For all: children, Adolescents, Mothers and Ageing population
- HTA to define innovative or extra services.

Coverage and resources, define continuum of HTA activities.
- Location of different HTA activities
- Relevance of activities changes by position

Fragile states:
- HTA define:
  - Basic packages
  - Emergency kits
  - Disaster planning

Health Systems
- Need to perform HTA is higher where resources are limited
- Strong health system
- Integrated - care
- People-centered
- Universal health coverage
- Middle and high income countries with medium coverage:
  - Package of interventions on prevention, promotion, and some on treatment and rehabilitation.
  - HTA to define extension on:
    - NCD interventions
    - Vertical programs.
    - For specific populations.

High coverage:
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- Medicines, Devices, interventions
- For all: children, Adolescents, Mothers and Ageing population
- HTA to define innovative or extra services.
2015 WHO survey on national authorities on HTA indicated the following areas are/are not being assessed for medical devices. (WHA60.23)
Lists of priority medical devices


Priority medical devices

List of priority medical devices

Core medical equipment refers to technologies that are commonly considered as important or necessary for specific preventive, diagnostic, treatment or rehabilitation procedures carried out in most health care facilities. WHO has been working, along with experts, collaborating centres and Member States, to develop several tools for better resource allocation, selection, incorporation and safe use.

Nomenclature of medical devices
### List of medical devices by health care facility
#### Specialized Hospital - Critical Medicine

<table>
<thead>
<tr>
<th>Area</th>
<th>Unit</th>
<th>Subunit</th>
<th>Type*</th>
<th>Name</th>
<th>GMDN**</th>
<th>UMDNS***</th>
</tr>
</thead>
<tbody>
<tr>
<td>Critical Medicine</td>
<td>Coronary Care Unit</td>
<td>Bed</td>
<td>ME</td>
<td>Bed scale</td>
<td>35321</td>
<td>13458</td>
</tr>
<tr>
<td>Critical Medicine</td>
<td>Coronary Care Unit</td>
<td>Bed</td>
<td>ME</td>
<td>Blood pressure instrument</td>
<td>16156</td>
<td>13106</td>
</tr>
<tr>
<td>Critical Medicine</td>
<td>Coronary Care Unit</td>
<td>Bed</td>
<td>ME</td>
<td>Cardiac output module</td>
<td>36561</td>
<td>20774</td>
</tr>
<tr>
<td>Critical Medicine</td>
<td>Coronary Care Unit</td>
<td>Bed</td>
<td>ME</td>
<td>Examination light</td>
<td>36843</td>
<td>12276</td>
</tr>
<tr>
<td>Critical Medicine</td>
<td>Coronary Care Unit</td>
<td>Bed</td>
<td>ME</td>
<td>Flowmeter for oxygen therapy</td>
<td>37132</td>
<td>11746</td>
</tr>
<tr>
<td>Critical Medicine</td>
<td>Coronary Care Unit</td>
<td>Bed</td>
<td>ME</td>
<td>Hemodynamic parameters module</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Critical Medicine</td>
<td>Coronary Care Unit</td>
<td>Bed</td>
<td>ME</td>
<td>Invasive blood pressure module</td>
<td>36550</td>
<td>NA</td>
</tr>
<tr>
<td>Critical Medicine</td>
<td>Coronary Care Unit</td>
<td>Bed</td>
<td>ME</td>
<td>Multichannel infusion pump</td>
<td>17634</td>
<td>17634</td>
</tr>
</tbody>
</table>
9 Global NCD targets to be attained by 2025 (against a 2010 baseline)

- A 25% relative reduction in risk of premature mortality from cardiovascular disease, cancer, diabetes or chronic respiratory diseases
- At least a 10% relative reduction in the harmful use of alcohol
- A 10% relative reduction in prevalence of insufficient physical activity
- A 25% relative reduction in prevalence of raised blood pressure or contain the prevalence of raised blood pressure
- A 30% relative reduction in prevalence of current tobacco use
- Halt the rise in diabetes and obesity
- A 30% relative reduction in mean population intake of salt/sodium
- An 80% availability of the affordable basic technologies and essential medicines, incl. generics, required to treat NCDs
- At least 50% of eligible people receive drug therapy and counselling to prevent heart attacks and strokes

World Health Organization
Defining, Guidelines, Interventions, and medical devices by levels of care. 
Work on priority medical devices 2014-2016

Interagency list of priority medical devices for essential interventions for reproductive, maternal, newborn and child health

WHO list of priority medical devices for cancer management

In development: 2017-2018

WHO list of priority medical devices for cardiovascular diseases

WHO Medical device technical series
## FAMILY PLANNING and REPRODUCTIVE HEALTH

### Medical Devices

<table>
<thead>
<tr>
<th>Category</th>
<th>Subcategory</th>
<th>NAME</th>
<th>Basic Medical Examination</th>
<th>Preventive Immunization</th>
<th>Provision of contraceptives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family planning supply</td>
<td>Family Planning</td>
<td>Cervical cap</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Consumables</td>
<td>Diaphragm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Female condoms</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Intra-Uterine Devices (only prequalified copper IUDs)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Levonorgestrel IUD</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lubricants</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Male condoms</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sub-dermal implants (included the insertion device)</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Acetic acid, 36 %, bottle</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Acetone, bottle</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Buffer, tablets, PH 7.2, box</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ethanol, denaturised, 70 %, bottle</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Formaldehyde, 10%, 10ml, ampoule</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Glycerol, bottle</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Definition of list of all priority medical devices for cancer management (continuum of care) to support to implement country cancer programs.
Total: 11 MD

Medical equipment for...

- Examination & diagnosis: 58
- Referral: 101
- Labor: 67
- Surgery & anesthesia: 83
- Inpatient care – mother & newborn: 49
- Inpatient care – child: 47
- Intensive care: 79

Total: 484 MD

Capital equipment

- Medical equipment: 82
- Laboratory & pathology equipment: 62
- Quality assurance devices: 28
- Surgical instruments: 81

Total: 253

Single use, consumables...

- Laboratory & pathology eq.: 26
- Personal protective eq. & clothing: 22
- Radiation protection /monitoring devices: 23
- Single use devices/disposables/medical supplies: 179
- Solutions and reagents: 108
- Other (glassware, utensils, etc.): 70
- Software: 3

Total: 431

GMDN – X-ray

- Mobile specimen x-ray system, analogue (42279)
- Mobile specimen x-ray system, digital (42280)
- Stationary specimen x-ray system, analogue (42284)
- Stationary specimen x-ray system, digital (42282)
- Basic diagnostic x-ray system application software (40866)
- Basic diagnostic x-ray system operation software (40821)
- Diagnostic x-ray digital imaging system workstation application software (58473)
- X-ray system tube support, ceiling mount (40946)
- X-ray system tube support, floor stand (37076)
- X-ray system tube support, gantry mount (40949)
- X-ray system tube support, table mount (40951)
- X-ray system tube support, wall mount (40947)
- Basic diagnostic x-ray system table, non-powered (40654)
- Basic diagnostic x-ray system table, powered (40655)
Using the priority list of medical devices, to determine the gaps: needs assessment

Figure 1. General needs and examples

- Level of care
  - Clinical practice guidelines
  - Medical devices list

- Analyzing/interpreting

- Epidemiological needs/disease priorities
  - Population data (demography, catchment area, patient rate)
  - Service availability and accessibility
  - Infrastructure situation
  - Health technology / medical device situation
  - Human resource situation

Prioritization

- Overall gap / need
- Budgetary and HR situation

Prioritized need

Baseline data
Medical Device Donations represent more problems than benefits if wrongly done.
Procurement of medical devices

plus 60 technical specifications for procurement

Figure 2. Summary flow chart of standard procurement procedures

Technology assessment
- Review of existing reports
- Review of International Network of Agencies of Health Technology Assessment (INAHTA) web site for available reports (44)
- Assessment commissioned, if required, from health technology assessment (HTA) agency

Device evaluation
- Market research
- Review of existing product evaluations
- Specialist input if local market information not available
- Reporting on function and performance

Planning and needs assessment
- Establishment of multidisciplinary team and development of work plan
- Data gathering and definition of strategic areas
- Development of a list of required supplies, quantities and specifications (i.e. needs assessment)
- Costing and specification of site requirements
- Funding and budget analysis
- Definition of purchase method
- Finalization of plan and management indicators

Note: HTA and device evaluation are helpful preparatory steps to good procurement, although they are separate from the procurement process itself.
Technical specifications of Neonatal resuscitation devices

Chapter 1: Technical specifications for a self-inflating neonatal resuscitation bag with mask
1.1 Scope ..................................................... 10
1.2 Background for a neonatal resuscitation bag with mask 10
  1.2.1 Self-inflating bag .................................. 11
  1.2.2 Valve ................................................ 12
  1.2.3 Mask ............................................... 12
1.3 Standards and regulations compliance .......................... 13
1.4 Other considerations .................................... 13
  1.4.1 How to use a resuscitation bag with mask 13
  1.4.2 Reprocessing .................................. 14
  1.4.3 Storage and packaging ........................... 15
  1.4.4 Maintenance .................................. 15
  1.4.5 Capacity-building and quality assurance related to the neonatal resuscitator 15
1.5 Key tender/request for quotation specifications for a neonatal resuscitation bag with masks 16
  1.5.1 Neonatal resuscitation bag with mask specifications 16

Chapter 2: Technical specifications for a suction machine
2.1 Scope ..................................................... 18
2.2 Background for a suction machine ........................ 18
2.3 Equipment requirement ................................... 19
  2.3.1 Electrical suction machine ...................... 19
  2.4 How to use an electrical suction machine .......... 20
  2.4.1 Manual/foot-operated suction machines 21
2.5 Standards and regulations compliance .................... 22
2.6 Other considerations ................................... 22
  2.6.1 Reprocessing .................................. 22
  2.6.2 Maintenance .................................. 22
  2.6.3 Suction catheter ................................ 23
2.7 Key tender/request for quotation specifications for a suction machine, electrically operated 23
  2.7.1 Suction machine specifications ................. 23

Chapter 3: Technical specifications for a suction device .................................. 25
  3.1 Scope ..................................................... 25
  3.2 Background .......................................... 26
  3.3 Standards and regulations compliance .................. 26
  3.4 Reprocessing ...................................... 26
  3.5 Maintenance ...................................... 26
  3.6 Capacity-building and quality assurance related to the suction devices 26
  3.7 Key tender/request for quotation specifications for a suction bulb 27
    3.7.1 Single-use suction bulb specifications ........ 27
    3.7.2 Suction device specifications .................. 28

Figure 1. Sample neonatal resuscitation bag with mask
Figure 2. How to use a neonatal resuscitation bag with mask
Technical specifications of oxygen concentrators


### Purpose of use

<table>
<thead>
<tr>
<th>Purpose of use</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>14 Clinical or other purpose</td>
<td>Provide positive air pressure ventilation to newborn babies with asphyxia, babies who experience respiratory arrest, apnoeic or respiratory distress requiring assisted ventilation, and babies who require assisted ventilation during procedures.</td>
</tr>
<tr>
<td>15 Level of use (if relevant)</td>
<td>Health centre/district hospital/provincial hospital/specialized hospital/other health facilities that include maternity services.</td>
</tr>
<tr>
<td>16 Clinical department/ward (if relevant)</td>
<td>Nursing services, surgery, paediatrics, emergency medicine, obstetrics, intensive care unit, labour and delivery room.</td>
</tr>
<tr>
<td>17 Overview of functional requirements</td>
<td>The resuscitator is used to ventilate newborns with a body weight less than 5 kg. The resuscitator can be used to efficiently maintain ventilation, or as resuscitation in other critical situations.</td>
</tr>
</tbody>
</table>

### Technical characteristics

18 Detailed requirements

- A resuscitator is used to ventilate a neonate with a body weight of less than 5 kg. It is operated by hand and ventilation can be done with ambient air or with oxygen. A resuscitator can be totally disassembled, and is easy to clean and disinfect. All parts are manufactured from high-strength, long-life materials that require no special maintenance or storage conditions. A resuscitator is supplied as a complete set with:
  - Non-rebreathing patient valve with a pressure limiting valve so that airway pressure does not exceed 4.5 kPa (45 cmH₂O) and can transmit an airway pressure of at least 3 kPa (30 cmH₂O);
  - Masks, transparent, in two different sizes: Size 0 (preterm and low-birth-weight baby), round type, outer diameter 35–50 mm; Size 1 (term baby), round type, outer diameter 50–65 mm silicone rubber or any material fulfilling at least the standards ISO 10993-1:2009; ISO 10993-5:2009; ISO 10993-10:2010, or equivalent; or classified as USP Class V;
  - Compressible self-inflating ventilation bag: silicone rubber or any other material fulfilling ISO 10651-4;
  - Bag size: 200–320 mL; intake valve with an optional nipple for O₂, tubing, polycarbonate/polyethylene or any other material fulfilling the ISO 10651-4 or any other equivalent;
  - Bag made of silicone and valve made of polycarbonate or polyethylene or any other sterilizable material complying with ISO 10651-4 or equivalent material: polycarbonate/polyethylene or any other sterilizable material fulfilling at least ISO 10651-4.

### Displayed parameters

| Displayed parameters | N/A |

### Physical/chemical characteristics

| Components (if relevant) | Self-inflating neonatal resuscitation bag with masks for preterm and term babies. Patient valves with pressure relief valves ± 45 cmH₂O. |
| Mobility, portability (if relevant) | Portable and mobile. |
| Raw materials (if relevant) | Recommended material is silicone rubber for the bag and mask and polycarbonate/polyethylene for the valves. Any material fulfilling ISO 10993-1:2009, ISO 10993-5:2009; ISO 10993-10:2010 or equivalent or USP Class V is also recommended. |

### Utility requirements

| Electrical, water end/or gas supply (if relevant) | N/A |
Maintenance of medical equipment
Local production and technology transfer to increase access to medical devices.

Towards improving access to medical devices through local production
Phase II
Report of a case study in four sub-Saharan countries
Research, development and innovation: WHO Compendium of Innovative Health Technologies for Low Resource Settings

Infant radiant warmer for primary care

Country of origin: India

Health problem addressed: Nearly 2.5 million deaths (1 in 10) of newborns occur in 12 countries, India being the largest contributor with 336,000. Lack of skilled personnel, infrastructure and affordability are key challenges to providing primary care. Hypothermia at birth is one of the most significant risk factors of newborn mortality irrespective of birthweights and postnatal care. Urgent action is needed to address the issue of newborn deaths and progress on MDG4, since 40% of under-5 deaths are in neonates.

Product description:

Infant radiant warmer with uniform heating: the warmer features a fitted "J" profile design that reflects heat uniformly to the bed for more thermal stability. Reduced heat loss to the header is made with a cartridge (CarabioTech) technology that allows for rapid warming of cold surfaces, thus helping to reduce cold shocks for the babies. Safe contact with the patient. All patient contact surfaces are made with biocompatible materials—chosen to be gentler on the baby's delicate skin. Rugged: The warmer's metal body is engineered to operate without a risk of hazardous vibrations and is withstands voltage fluctuations of ±10% of rated voltage. Clear observation: With a LED-based observation lamp emitting a white light, the warmer allows for great patient observation.

Developer's claims of product benefits:

- Many cheap warmers available in the market are unreliable, break down frequently and do not deliver the desired level of clinical performance. There are others that are too heavy and very high priced and much beyond the buying capacity of primary care agencies. With Carabio technology for the best clinical outcomes, ruggedness and reliability (7 years warranty) and at extremely affordable prices.

Suitability for low-resource settings:

- Designed for low-resource health facilities with poor infrastructure (interrupted power, power fluctuations, no electricity), low-skilled nurses, lack of space, low purchasing power. Easy to use, the device is plug & use requires minimal training. Rugged & Reliable, can withstand voltage fluctuations up to ±10%. Comes with 5-year maintenance warranty. The product was approved by the Indian standards institute. Low purchase price, low maintenance & service costs. So far, the warmer has been installed in many challenging environments across India and now used in poor remote areas, where control over power supply, sagged environment, and a limited availability of skilled clinicians. The rugged and reliable design was well suited to the challenging environment and usage conditions.

Operating steps:

- Plug into the assembled unit for power source and switch on the device. The warmer performs a self-test, then a switch ON in the manual heating mode. Use the mode to preheat, if needed. Place the baby on the mattress in the basket and attach the sensor to the baby. Apply the baby mode and adjust the temperature for the warmer.

Regulatory status:


Future work and challenges:

- switches to different modes and marketable for low-resource settings. One of the obstacles is the uneven distribution and funding. The documents need to be updated with new technical information so that the product can watch the markets it is actually meant for.

Use and maintenance:

- Mainly intended for use by obstetricians, nurses, or midwives.
- Training: Basic training manual (times reference guide) provided and video available.
- Maintenance: No scheduled maintenance required.

Environment of use:

- Effective for neonatal and infant clinical settings, as well as primary and secondary health care facilities.
- Energy and Primary requirements: Requires a continuous power supply of 230V and an environment within the range of 18-30 °C and 0-100% RH.

Product specifications:

- Weight: 320 x 670 x 670 mm
- Dimensions: 320 mm x 630 mm x 630 mm
- Consumables: Heat reflector skin patch
- Reliability: 7 years

Contact: Indera Manoharan | Email: i.Indere@gmail.com

WHO Collaborating Centers
NGO in official relations with WHO
WHO Publications on the safe and quality use of medical devices, example ultrasound

http://www.who.int/medical_devices/publications/en/
Conclusions

Science and technology are evolving daily, so are medical devices that need to be designed, regulated, assessed, managed and used properly.

Medical devices

- Are indispensable for health care provision and need to be appropriate to the setting
- Are not pharmaceuticals, do not achieve systemic biochemical changes
- Can be 1 mm to 4 mts; last 1 second or 30 years; weigh 1 gram or 1 ton...
- Require special training to be used appropriately,
- Some require maintenance and spare parts
- Require collaborative work from biomedical engineers with doctors, nurses, laboratory technicians, radiographers, IT, hospital managers… to help in the selection, supply, training and best use of medical devices.
- Are necessary to provide universal health coverage and to achieve the health related Sustainable Development Goals.

Much work needs to be done in this area, specially in LMIC to ensure access!!
Thank you!

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