

CE Success Stories & MOHs

Making a Difference – Global Health Technology Success Stories: Overview of over 400 submissions from 125 Countries
<https://globalce.org/index.php/GlobaICE/article/view/43>

CE Clinical Engineering Division
A Professional Division of the International Federation of Medical and Biomedical Engineering
<http://cedglobal.org>

Success Stories

August 2018

IFMBE Clinical Engineering Division

2018-2019 Health Technology Success Stories
Prepared for Minister of Health of World Health Organization (WHO) Member States
by IFMBE-CEU, 2019

Dear Health Leaders:

Disease prevention, treatment, and rehabilitation is more efficient and effective when health services are provided with appropriate tools. Along with WHO, we recognize how important the use of health technologies (HT) is to successful outcomes for your healthcare delivery systems. In the [May 2016 HT resource document](#) prepared for the World Health Assembly (WHA), a recommendation was made:

Health technologies must be managed to ensure full clinical benefit and expected financial return on investment.

It is critical, therefore, that with limited resources, HT must be professionally guided. A new 2018 resource document - with links below - demonstrates this benefit from 400 case studies from 125 countries where management of medical devices (main component of health technologies) made a positive difference over the past twelve years.

The [2007 WHO WHA Resolution 60.29](#) urges Member States to create national health technology management plans in collaboration with biomedical engineers. WHO further clarified the definition of these personnel in 2017-2018 as part of a global survey* (http://www.who.int/medical_devices/support/en/) in coordination with IFMBE CED.

Trained and qualified biomedical engineering professionals are required to design, evaluate, regulate, maintain and manage medical devices, and train on their safe use in health systems around the world. These occupations have various names in different countries like clinical engineers, medical engineers, ... and related professionals and technicians. (WHO and IFMBE CED surveys have identified over 800,000 of these global professionals in 2018.)

IFMBE-CEU is the International Federation for Medical and Biological Engineering (IFMBE)-Clinical Engineering Division (CED), currently representing clinical engineers (hospital-based biomedical engineers) in these roles in 180 countries. See more about CED at <https://ced.ifmbe.org/about-us.html>.

The case studies - in six categories - aim to formulate national strategies and plans to improve use of health technologies and better manage costs. In several countries, this has been achieved by developing a Health Technology (HT) Unit at Ministry of Health level with clinical engineering leadership. The studies provide clear evidence that health technology is beneficial; at times, presenting complex systems that must be effectively guided and managed for optimal impact to be realized.

Innovation	Access	Management	Health Systems	e-Technology	Quality & Safety
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The full paper with active links for each story was published in the [Global CE Journal Volume 1](#) in October 2018.

The case studies are [available here](#). Technology Success Stories that demonstrate, in a limited resource environment, that it is desirable to include professional HT expertise, such as clinical engineers, in national decision-making in order to maximize health systems' services. Case studies from the above Active links demonstrate these benefits:

- Access:** The Ministry of Health HT Unit-led project in Albania that doubled access to critical diagnostic services, e.g., CT Scanners, MRI, and angiography imaging, while reducing equipment downtime to zero, and significantly reducing cost.
- Health Systems:** Improved coordination between multiple stakeholders in the National Laboratory and its satellites in Colombia, led by Ministry of Health clinical engineers who partner with experts from academia and industry.
- Quality & Safety:** A clinical engineer-led 112-hospital program in the Shanghai region that cooperates with official, industry and academic entities, resulting in improved device user satisfaction, tracking of emerging technologies, and closer partnerships with industry.

Recommendation: To encourage the availability, recognition, and increased participation of clinical engineers as part of the health workforce in your national healthcare delivery programs*.

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Respectfully,
Thomas M. Judd
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Health Leader Communications: CED Learnings

What issues is the LMIC Ministry of Health (MOH) typically facing?

WHO SDG 3 Measures

Maternal, Child, Neonatal Health

- Maternal Mortality Rate
 - need for skilled health personnel
- Under 5 Mortality Rate
- Neonatal Mortality Rate
- Adolescent Birth Rate

Infectious Diseases

- HIV, Malaria, Tropical
- Unsafe Water, Sanitation, Hygiene

NCDs – Chronic Diseases

- Cardiovascular Disease, Cancer
- Diabetes, Respiratory Chronic
- Pollution

Health Systems/Funding (CE-Focused)

- **Investment:** 800M (12%) spent <10% for health
- **Donors:** Official donor health assistance >\$9B
- **Staffing:** <1 MD/1K & <3 RN/1000 people
- Overall Health Workforce Planning
- HT-related Capacity Planning
- HT-related Program Delivery

● How CEs can help ...

- Global (WHO SDG) & National Health Technology-Related Priorities
 - Maternal, Child, Neonatal Health
 - Infectious Disease (Communicable Diseases)
 - Chronic Disease (Non-Communicable Diseases)
 - Health System Funding
 - Health Systems Development
- Frequently seen in CE Success Stories, published in 2018
 - Addressing Innovation, Access, Management, Health Systems ...
 - ... Digital Health, Quality & Safety (400 stories, 125 countries)

● How CEs have helped MOHs in 2020 ...

- Helped them WHO-recommended COVID19 Critical HT Topic Best Practices
 - Eg, Oxygen systems, PPE, various respiratory care devices, decontamination
- Helped them conduct WHO-recommended country-wide, etc. COVID19 inventories
 - Eg, through The Every Breath Counts (EBC) Global NGO Coalition in 48 countries

Health Leader Communications: Personal Experience

MOH Level

- Win the right through excellent performance in addressing MOH Health Technology (HT) related agenda to help them implement other HT-related solutions
 - As a WHO HT Consultant in Central Asia, I helped implement a funded, country-wide integrated Health Technology package of services, giving me the opportunity to strengthen CE-HTM needs through MOH

Health System Level

- Win the right through excellent performance in addressing health system leader Health HT related agenda to help them implement other HT-related solutions
 - As a US Navy HT Reservist, I helped USA Dept of Defense implement a funded & updated national military healthcare (MH) logistics system, giving me the opportunity to advise how to strengthen MH CE-HTM programs

Hospital Level

- As a USA Community Hospital CE Director, implemented successful a 4-year CE-HTM in-house program for General Biomedical, Imaging, Laboratory, & Computer equipment
 - With the robust business & clinical success of the in-house CE program, was given the opportunity by hospital leaders to develop a regional CE-HTM for-profit company; still operating successfully (by others) 36 years later