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| ITU Logo | INTERNATIONAL TELECOMMUNICATION UNION  **TELECOMMUNICATION STANDARDIZATION SECTOR**  STUDY PERIOD 2017-2020 | | FG-AI4H-A-028 | |
| **ITU-T Focus Group on AI for Health** | |
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| **DOCUMENT** | | | | |
| **Source:** | | Garrett Mehl, WHO | | |
| **Title:** | | Addition of thematic classification schema for health system challenges | | |
| **Purpose:** | | Discussion | | |
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| **Abstract:** | **NOTE –** This document is revision-marked against document **FG-AI4H-A-030**.  For the purpose of conducting full review of the proposed reference datasets and algorithms, the following thematic classification scheme amendment is proposed to be used for the area of health system need. This addition would aid those involved in classifying the type of reference data or algorithm, to understand the health purpose of the algorithm within the common challenges faced by health systems.  This classification “Level-4 Thematic Classification (Health System Need)” is drawn from the WHO Classification of Digital Health Interventions v1.0: A shared language to describe the uses of digital technology for health” 2018 publication***.*** The document leveraged existing WHO, ITU, and ISO standards to establish three different schema for articulating system, challenge, and functionality.Targeted primarily at public health audiences, the Classification framework aimed to promote an accessible and bridging language for health program planners to articulate functionalities of digital health implementations, and the problems they were attempting to solve to achieve health sector objectives.  Reference: World Health Organization (WHO). Classification of Digital Health Interventions V1.0. Geneva, Switzerland: WHO; 2018. Licence: CC BY-NC-SA 3.0 IGO. |

## Level-1 Thematic Classification

1. **Public health (Level-1A)**
   1. H4ealth service
   2. Health systems
   3. Health expenditure
   4. Health inequities
   5. Health surveillance
   6. Health emergencies
   7. Life expectancy and mortality
   8. Cause-specific mortality and morbidity
   9. Communicable diseases
   10. Non-communicable diseases
   11. Civil registration and vital statistics
   12. Other

Within the aforementioned Level-1A (Public Health) category, any one or more sub-class will be used:

1. epidemiology
2. microbiology
3. biostatistics
4. health services delivery
5. environmental health
6. community health
7. behavioural health
8. health economics
9. informatics
10. public health interventions
11. public policy
12. Other
13. **Clinical Health (Level-1B)**
    1. Prevention
    2. Diagnosis
    3. Treatment
    4. Research

Within the aforementioned Level-1B (Clinical Health) category, any one or more sub-class will be used:

1. Anaesthesiology
2. Angiology
3. Audiology
4. Cardiology
5. Critical care medicine
6. Dentistry
7. Dermatology
8. Emergency medicine
9. Endocrinology
10. Family medicine
11. Gastroenterology
12. General Practice
13. Geriatrics
14. Gynaecology
15. Haematology
16. Hepatology
17. Infectious disease
18. Kinesiology
19. Laboratory medicine
20. Neurology
21. Nephrology
22. Oncology
23. Ophthalmology
24. Orthopaedics
25. Otolaryngology
26. Pathology
27. Paediatrics
28. Pharmacology
29. Pulmonology
30. Psychiatry (mental disorders)
31. Radiology (medical imaging).
32. Rheumatology
33. Splanchnology
34. Surgery
35. Urology
36. Veterinary medicine (nonhuman/animals)
37. Other

## Level-2 Thematic Classification (Artificial Intelligence)

### AI-benchmarking class type (methodology types)

* 1. Deep learning
  2. Robotics
  3. Natural Language Processing
  4. Computer Vision
  5. Image Analysis / Pattern Recognition
  6. Data mining and Electronic Medical Records
  7. Medical Imaging
  8. Other

## Level-3 Thematic Classification (data types)

* 1. Anonymized Electronic Health Record data
  2. Medical Images, photographs
  3. Non-medical data (socio economic, environmental, etc)

## Level-4 Thematic Classification (Health System Need)

1. Information
   1. Lack of population denominator
   2. Delayed reporting of events
   3. Lack of quality/ reliable data
   4. Communication roadblocks
   5. Lack of access to information or data
   6. Insufficient utilization of data and information
   7. Lack of unique identifier
2. Availability
   1. Insufficient supply of commodities
   2. Insufficient supply of services
   3. Insufficient supply of equipment
   4. Insufficient supply of qualified health workers
   5. Lack of population denominator
3. Quality
   1. Poor patient experience
   2. Insufficient health worker competence
   3. Low quality health commodities
   4. Low health worker motivation
   5. Insufficient continuity of care
   6. Inadequate supportive supervision
   7. Poor adherence to guidelines
4. Acceptability
   1. Lack of alignment with local norms
   2. Programs which do not address individual beliefs and practices
5. Utilization
   1. Low demand for services
   2. Geographic inaccessibility
   3. Low adherence to treatments
   4. Loss to follow up
   5. Poor patient experience
6. Efficiency
   1. Inadequate workflow management
   2. Lack of or inappropriate referrals
   3. Poor planning and coordination
   4. Delayed provision of care
   5. Inadequate access to transportation
7. Cost
   1. High cost of manual processes
   2. Lack of effective resource allocation
   3. Client-side expenses
   4. Lack of coordinated payer mechanism
8. Accountability
   1. Insufficient patient engagement
   2. Unaware of service entitlement
   3. Absence of community feedback mechanisms
   4. Lack of transparency in commodity transactions
   5. Poor accountability between the levels of the health sector
   6. Inadequate understanding of beneficiary populations

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