Design of an approach for assessing a novel health capability maturity model

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Acknowledgements

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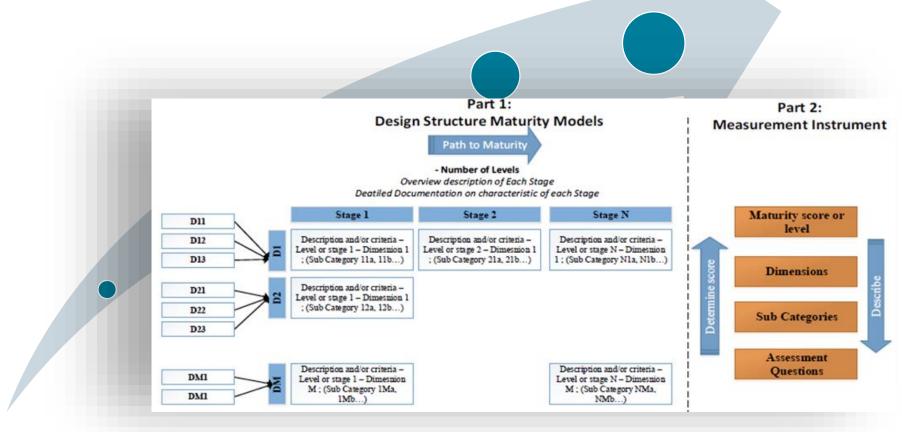
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Let's talk Capability Maturity

General representation of the CMM structure, Lasrado, L., et al. 2016

Maturity vs capability assessments

Capability Maturity Model	Capability Assessment
Usually a five-layered model with defined levels of "maturity"	Does not have "maturity layers".
Each layer of maturity builds upon lower levels in a progressive manner	Each aspect being assessed can be independent.
"Maturity" is a highly subjective term lacking in universal agreement	Criteria for each aspect being assessed can use industry metrics
HIMSS maturity models widely used in healthcare and widely understood – the need for different assessments is supported through different specialised models such as O-EMRAM, AMAM, DIAM etc.	No universally agreed set of digital health capabilities for healthcare

Purpose of both digital health capability / maturity assessment

- Digital health transformation expectation: substantial efficiency and quality and safety improvements in healthcare

- Digital health maturity assessment aims to measure the state of digital health profile of a health service organisation

  - What capabilities are relevant and How to assess them?

  - Practicality? Assessment is often expensive and burdensome to organizations

  ☐ How to validate and evaluate an assessment framework?

The VDHMM – a novel model combining maturity and capability assessments

Maturity model pillars and subcategories

Governance and stewardship

Alignment of leadership, oversight and assurance		Investment and direction		Operational, program, technical and clinical governance				Clinical, business and ICT strategy	
Organisational capability	IT operations and infrastructure	Level of digitisation and functional adoption	Security and privacy	Information sharing and integration	Data and analytics	Consumer participatory health	User experience	Innovation	
Change capability / clinical engagement	IT operations and infrastructure management	Clinical information systems adoption	Adoption and continuous improvement of security controls	Information management	Data principles	Telemedicine	Quality of user experience	Innovation capability	
Project capability	IT budget management	Electronic medications management	Cybersecurity Capability Maturity Model (C2M2)	Adoption of nomenclatures	Data governance	Consumer representation in governance	User experience and design principles	Innovation initiatives	
Continuous improvement	IT capability management	Electronic clinical decision support	NIST Cybersecurity Framework	Interoperability of systems	Reporting capability	Training/support on use of digital tools to support wellness	Innovation funding		
Business continuity management	Managing IT for business value	Electronic order entry capability		Information sharing with third parties	Busines intelligence capability health		Measurement of user outcomes	Innovation partnerships	
Workforce capability		Digital tools for consumers		Data quality management					
Benefits management		Other eHealth functional capabilities							

Level 5: Transformative
Coordinated and planned initiatives form part of a continuous improvement loop

Level 4: Established
Coordinated approach to continuous improvement and measurement

Level 3: Developing
Some desired outcomes achieved via strategic decision making

Level 2: Basic
Desired outcomes identified and some initiatives commenced

Level 1: Initial
Unpredictable, reactive and poorly controlled outcomes

https://www.health.vic.gov.au/sites/default/files/2022-02/victorias-digital-health-maturity-model.docx

MedInfo 2023 . Nguyen and Cooper

Our approach to evaluate the VDHMM

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- E1. Knowledge base principle
- E3. Validity principle
- E2. Socio-technical principle
- E4. Usability principle
- E5. Practicability principle
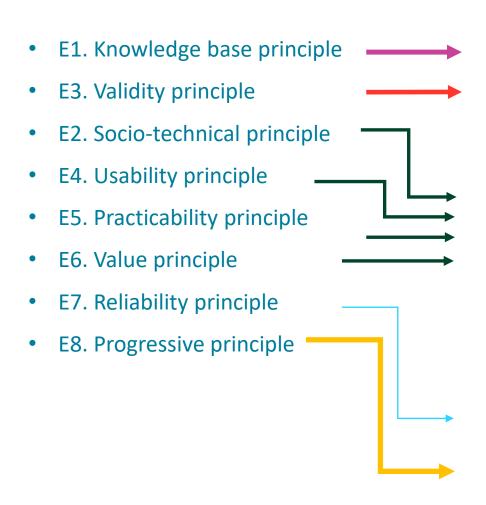- E6. Value principle
- E7. Reliability principle
- E8. Progressive principle

Phase A involved a literature review to compare the available key maturity assessment framework against related frameworks.

Phase B was a content validity study to address the E3 principle (Validity).

Phase C was a survey study to evaluate the model through lens of stakeholder assessment:
- a two-stage survey to evaluate the model, assessment tool, process and resources
- interviews with stakeholders using a socio-technical lens of the assessment process, structure and people, assessment tool, organizational context, assessment results and values.

not feasible to be implemented

In **Phase D**, findings were integrated and recommendations to improve the maturity model and inform future implementations

Findings

□ Valid in current context at a qualitative level for Victorian Health Services

□ More comprehensive when compared to other international best practice toolkits and maturity models

□ Easy to use and understand for health services

□ Likely to be applicable beyond Victoria

Reflections and next steps

- useful and robust in evaluating VDHMM

- unable to assess the model reliability due to the limited resource to repeat assessments

- future research can test the generalised assessment approach on a larger range of digital health capability models in the marketplace.

Thank You