**Supplementary File 2**

**Detailed Description of Ten Key Themes of Implementation**

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| **S/N** | **Domain** | **Themes**  | **Definition** |
| 1 | Implementation Strategy Design | Having a clear implementation strategy prior to execution | A prevalent assumption of an implementation strategy was that of "clinical serendipity"— a natural and smooth adoption of new innovations or interventions by clinician (1). In contrast, successful implementation required various, if not all parts of the implementation strategy (e.g. dissemination, training, support) to be carefully designed. This included outlining specific tasks and timelines (2,3) and ensuring that the implementation strategy was adaptable to address unique requirements in any particular context(4). |
| 2 | Ensuring interventions are adaptable | Adaptability refers to the propensity of an intervention/innovation to be adapted to or customized to a particular context (2). As each context is unique and distinct, (4) , it will invariably have a large bearing on the success of implementation. Allowing for the intervention to be adapted to the local setting is reported to increase success of implementation (1,5,6). Allowing adaptation of the intervention to the local environment, instils a sense of ownership in the implementation process (7), to which successful implementation may be attributed to. Adaptability, was addressed in the literature in mainly two ways i.e. as in the RE-AIM framework (8,9) that called for flexibility of the intervention design as compared to a more structured approach by identifying vs CRIR 2009, diffusion of innovations that give a more structured approach to identifying “core component” i.e. the indispensable elements of the intervention that define its uniqueness and an "adaptable periphery" that maybe modified to suit local context (2,10).  |
| 3 | Organizational Support  | Conducting an organizational needs assessment.  | Organizational readiness assessments were referred to explicitly, with specific tools created to assess readiness (11) based on organizational factors such as communication channels (2), leadership (10), culture and morale (5), and resource allocations (10); and implicitly by inferring the need to develop an understanding of the local operating environment or context (2,12,13). It is expected that different medical technologies will require differing aspects of organizational readiness to be surveyed, taking context into account.  |
| 4 | Aligning innovation to organizations' strategic objectives and work routines | Aligning the innovation to the organizations' strategic objectives and work routines has been described as fitting in with the organizations' goals (13) and compatibility with existing work routine (13,14). Apart from aligning with tangible elements of work routines, compatibility has been described as being accordant with intangibles elements such as values, and experiences of adopters (15). The general consensus in the literature was that compatible interventions were more likely to be adopted (6).  |
| 5 | Context analysis of various domains | In addition to understanding organizational context, the literature guides to study the interaction between the intervention and the context, to assess and manage barriers upfront. Various methods have been proposed to assess context e.g. the CICI framework(12) defines context through 7 domains i.e. Geographical, Epidemiological, Socio-cultural, Socio-economic, Ethical, Legal, Political domain), CADTH defines context via SLEEPERS (16) i.e. social, legal, ethical, environmental, political, entrepreneurial, research and innovation issues. Regardless of the method employed, there is consensus in the literature that HTA is a multidisciplinary process and hence is likely to have interactions with the context outside of healthcare. Not all domains may be applicable, end users should assess their HTA interventions based on the relevant domains for upstream identification of barriers. |
| 6 | Ensuring the organization has appropriate resources to implement  | Resources were referred to in the literature as infrastructure, skills and motivation (17) and, financial resources in the form of funding (18), educational resources in the form of training and, physical space and time (2). This theme was usually accompanied by the recognition that implementation requires changes in various aspects of the organization, i.e. workflow, manpower, infrastructure, for which resources were a rate limiting step (1,19). |
| 7 | Stakeholder Engagement  | Engaging all stakeholders, including clinical champions and key opinion leaders, involved in the service provision of the innovation. | The theme of stakeholder engagement was widely reported. In essence, implementation efforts should be consultative, allowing for ample stakeholder participation. Early engagement of stakeholders helped address and manage any concerns upstream (20) and by doing so, ensured support for the implementation strategy (3,13) . Stakeholders representative of a range of different backgrounds catered for adaptability in the implementation strategy (18,21).“Champions” were broadly defined as individuals who were dedicated to bringing the intervention to fruition and overcoming any resistance within the organization(22). They were often thought to have a sphere of influence that could be tapped on to facilitate implementation of the intervention, especially with regard to softer elements of implementation such as culture and social acceptability. Champions should be chosen and incorporated into the implementation strategy upstream of implementation efforts. Most commonly, champions were clinical champions. However, champions from other relevant domains e.g. financial, operational should be considered. (23). Opinion leaders need not be subject matter experts but were described in the literature as influential as a result of their position or their credibility in the community (24) or status (10). They were described to be instrumental to success of implementation by spreading positive influence of the innovation. One source noted that opinion leaders should not become obstacles by promoting negative influence about the innovation (22)  |
| 8 | Information Dissemination  | Employing diverse and intelligent strategies to disseminate information e.g. Knowledge translation tools | Dissemination was defined as an active process of knowledge transfer, one that was vertical, planned, formal and centralised (25) . The more extensive and multi-pronged the mode of information dissemination was, the greater the implementation success (7,15). Specific to HTA, INAHTA’s guidance document highlighted that mail-outs and journal presentations might be ineffective as standalone modes of communication and instead, recommended a mixed approach. This involved face-to-face consultations, in tandem with distribution of written materials (26). It was also important for information dissemination methods to be tailored to the target audience, suggest forms for HTA included research and summary reports, consultations, online distributions and project specific knowledge translation tools (23). |
| 9 | Having a dedicated unit within the organization responsible for implementation | Having a localised unit (2,13) within the organization to orchestrate implementation efforts was shown to improve implementation success. Such a unit introduced structure and clarity of roles, key deliverables, and timelines for seamless information flow (3). It was suggested these units possess the necessary technical, communication, financial and project management skills required to carry out the implementation effort (1). In Singapore, institutions self-form working groups to aid and coordinate ACE’s implementation efforts.  |
| 10 | Programme Evaluation | Evaluating implementation outcomes | Evaluation of implementation outcomes was explicitly described as evaluating fidelity, adoption, appropriateness, costs, feasibility, penetration, and sustainability (27); and implicitly described as incorporating a component for audit (28) or feedback (10) in any implementation strategy. Regardless of the method chosen, ensuring some form of feedback mechanism was hardwired into the evaluation enhanced the robustness of an implementation strategy. Evaluation outcomes created in partnership (8) with stakeholders ensured the outcomes were relevant and specific to their context, instilling greater ownership among stakeholders. |

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