Activity worksheet- **ANSWERS**

**Case study 2:** “So, we need to optimise” – applying the NASSS framework across adoption stages   
to identify implementation strategies

**Background:** Computerized clinical decision support systems (CDSSs) enhance patient care through real-time, evidence-based guidance for health care professionals. Despite this, the effective implementation of these systems for health services presents multifaceted challenges, leading to inappropriate use and abandonment over the course of time. Using the Non-Adoption, Abandonment, Scale-Up, Spread, and Sustainability (NASSS) framework, this qualitative study examined CDSS adoption in a metropolitan health service, identifying determinants across implementation stages to optimize CDSS integration into health care practice.

**Research aim:** This study aims to identify the theory-informed (NASSS) determinants, which included multiple CDSS interventions across a 2-year period, both at the health-service level and at the individual hospital setting, that either facilitate or hinder the application of CDSSs within a metropolitan health service.

**Study design:** Participants involved in various stages of the implementation process were recruited (N=30). Participants took part in interviews and focus groups. We used a hybrid inductive-deductive qualitative content analysis and a framework mapping approach to categorize findings into barriers, enablers, or neutral determinants aligned to NASSS framework domains.

**Link to research paper:** <https://medinform.jmir.org/2024/1/e60402>

**Link to NASSS framework paper:** <https://bmcmedicine.biomedcentral.com/articles/10.1186/s12916-019-1463-x>

**Activity:** Complete the table below by allocating the provided quote to a domain and construct of the NASSS framework. If time permits, use the final column to explore other concepts including:

* consider how the quote would affect implementation as either a barrier or enabler to implementation; or
* choose an implementation strategy to suit the context; or
* explore how you might measure implementation and other outcomes.

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| Index | Quote | Domain | Sub-domain | Other:  Type of determinant  (e.g., barrier or enabler) |
| 1 | "very much organically, not necessarily a push from a you know, we need to improve the service of a reaction to that extent at all. Like, I would not call it a reaction, but it's we've got a new business problem and a business problem. We didn't see it coming. And now, till now, we've got to respond to it." | Condition | Clinical context | Enabler |
| 2 | "Just having that previous information all in one place, and I guess you could carry your ups machine and your computer…” | Technology | Material properties | Enabler |
| 3 | "There's been lots of glitches." | Technology | Material properties | Barrier |
| 4 | "We developed an Intel specific training module for doctors for IMRR, which has been rolled out across Metro South." | Technology | Knowledge to use it | Enabler |
| 5 | "Overall, I think they are helpful, they make things quicker for the most part..." | Technology | Knowledge generated by it | Enabler |
| 6 | "It's like a system that brokers this level of communication so that the information is tracked." | Technology | Knowledge generated by it | Enabler |
| 7 | "Our clients and customers, they think they're things really important. Because they have no visibility of the strokes that we're managing at the moment.” | Value proposition | Supply side to developer | Barrier |
| 8 | "So it's really saving time on things that can very well be done by, you know, sort of an artificial intelligence means." | Value proposition | Demand side to adopter | Enabler |
| 9 | “But I'm just interested in news about what those performance indicators are like. As you know, I mean, we do have a few dashboards in there, sort of monitoring devices. But I'm not convinced that a lot of frontline clinicians talk about them sort of at a macro level, the level of executive look at. But, you know, the front factor.” | Adopter | Staff- role & identity | Barrier |
| 10 | "Some people might think this robotic person is going to tell me what to do.” | Adopter | Staff- role & identity | Barrier |
| 11 | "I think you need to get back to the clinicians that are trusted within the community and have them lead the charge." | Organisation | Capacity to innovate in general | Enabler |
| 12 | “We've been able to develop around about 50 odd dashboards.” | Organisation | Capacity to innovate in general | Enabler |
| 13 | "Then the standalone systems complain 'cause they're not integrated with our enterprise systems." | Organisation | Readiness for this technology | Barrier |
| 14 | "nobody nobody wants to get behind it." P6 And then there's this whole thing, but nobody's really wanting to make a decision. Should we do it or not. So what I'm trying to do at the moment is articulate that if you don't,you know, make a change" | Organisation | Readiness for this technology | Barrier |
| 15 | "There's an understanding there's roles, but it's really establishing that enterprise data governance type system that needs to be done... improving data literacy is one of the things that we're looking at." | Organisation | Work needed to plan, implement and monitor change | Enabler |
| 16 | "There should be some mechanism for us to provide feedback to the system." | Organisation | Work needed to plan, implement and monitor change | Barrier |
| 17 | “Yeah, we can't go and do that same update to any of the medical devices because the TGA certifies the actual equipment, but also the extension of the infrastructure that hangs on.” | Wider System | Regulatory/legal issues | Barrier |
| 18 | "We as pharmacy doesn't get a lot of undergraduate digital training at the moment, which I think is a downfall for pharmacy." | Wider System | Professional bodies | Barrier |
| 19 | “It's achieved a level of familiarity with. The the newer system that they're then willing to accept it” | Embedding and adaptation over time | Scope for adaptation over time | Enabler |
| 20 | "how do we then make sure that the tool stays accurate over time?" | Embedding and adaptation over time | Scope for adaptation over time | Barrier |