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Major Article

Clinician perspectives of policy implementation: A qualitative study of the implementation of a national infection prevention policy in Australian hospitals

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A B S T R A C T

Background: Clinicians play an essential role in the implementation of infection prevention policy. Despite this, little is known about how infection control policy is implemented at an organizational level or what factors influence this process. In this study, we explore these factors and the policy implementation process in the context of the introduction of a national large-scale, government-directed infection prevention policy in Australia.

Methods: Focus groups with infection control professionals were held in 3 states to investigate the perspectives of infection control professionals involved in the implementation of aseptic technique policy requirements in Australian hospitals. Data were analyzed using an interpretive description approach, with themes mapped to the Consolidated Framework for Implementation Research.

Results: Common contextual factors were identified across all levels of the healthcare system that influenced implementation of the infection control policy, including external factors associated with the policy itself and the regulatory nature of government-directed policy.

Conclusions: This study suggests that there may be particular constructs and contextual factors that are specific to policy implementation in the hospital setting. A better understanding of these factors and their influence on policy implementation would present an opportunity for improved implementation planning, resource allocation, and more effective policy development.

BACKGROUND

In recent years, legislation and policy tools have been increasingly introduced to reduce healthcare–associated infections (HAIs) in hospitals. Implementation of these policies is a significant component of the work undertaken by infection control professionals (ICPs) internationally. However, very little research investigates how implementation of policy occurs in this context or the factors that influence implementation processes at an organizational level.

In 2010, the Australian Commission on Safety and Quality in Healthcare introduced the National Safety and Quality Health Service (NSQHS) Standards, together with a new national health services accreditation scheme. This significant piece of national policy aims to support and improve the quality of care provided in Australian hospitals.[1] The new policy requires all Australian hospitals to adequately demonstrate established safety and quality requirements from January 2013 and includes specific requirements for HAI prevention.

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A significant inclusion to this policy was a set of criteria related to the prevention of HAI, including specific requirements regarding the training of clinicians and monitoring of practice in aseptic technique (AT).[1,2] AT refers to the application of the principles of asepsis when performing invasive procedures. When correctly performed, AT significantly minimizes the risk of the introduction of pathogenic material during invasive procedures.[3,4] Although research into AT practices and monitoring of adherence to practice recommendations had been established in other countries[5-7], there was minimal literature describing AT practices in Australia or levels of compliance to this standard of care[8-10] prior to the introduction of the new NSQHS Standards in 2010.

As AT had not before been specifically included in regulatory safety and quality frameworks in Australian hospitals, it is conceivable that significant changes would be required at an organizational level to meet the AT criteria. This presented a unique opportunity to investigate policy implementation in this setting.

In Australia, ICPs are usually the clinicians responsible for the implementation of interventions which aim to prevent or control the spread of infections in healthcare organizations.[11] When the NSQHS Standards were introduced, ICPs became responsible for addressing the AT criteria and implementing interventions to enable an organization to demonstrate each of the actions required. In this study, the perspectives of these ICPs were sought to identify common contextual enablers and barriers, which influenced this implementation process.

METHODS

To gain perspectives regarding the implementation of AT interventions from this group, potential study participants were identified from attendance lists for an Education Symposia on AT held by the Australasian College of Infection Prevention and Control in 2014. Purposeful sampling was used to ensure representation from infection control services in public and private healthcare settings as well as regional and metropolitan services. To ensure participants were able to comment specifically on AT implementation they were required to have been directly involved in the implementation of AT practice interventions in their hospital since the introduction of the NSQHS Standards in 2010.

This project received ethical approval from the Queensland University of Technology Human Research Ethics Committee (approval number 1500000013).

DATA COLLECTION

Individual informed consent was obtained in advance of the focus groups held in 3 capital cities in Australia and an additional session by teleconference to enable the participation of regional and remote ICPs. Participants were asked to provide their viewpoints on key areas, including perceived changes to knowledge and practices, attitudes towards the infection prevention policy and associated implementation processes, perspectives on current practice, and implementation of enablers and barriers. As individual ICP perspectives were being investigated in this study, focus group questions were guided by the Theoretical Domains Framework,[12] a framework with a validated question guide commonly used in behavior change research.[13]

CODING AND ANALYSIS

Focus groups were audio recorded verbatim and transcribed for analysis. An interpretive description approach was used.[14] First, open coding and identification of preliminary themes were undertaken by 2 of the researchers (P.R., S.H.) independently to identify themes and contextual factors. Second, these findings were discussed jointly under the supervision of a third researcher (L.H.). In this meeting, the independently coded data were discussed and reviewed until a consensus on themes was reached.

Implementation framework

Final analysis involved mapping and interpretation of the identified themes against the Consolidated Framework for Implementation Research (CFIR)[15] to provide meaningful interpretation of the identified themes against established and verified aspects of the implementation process. The CFIR is a commonly applied implementation framework used in implementation science[15] to examine influences on implementation of interventions in healthcare settings.[16] It was selected for this study because of its capacity for multilevel analysis, an important benefit when considering the role and regulatory function of policy intervention implementation in hospitals, as well as external and internal contextual factors. The framework, which consists of 5 domains, including intervention characteristics, outer setting, inner setting, characteristics of the involved individuals, and the process of implementation, is highly relevant to the multilevel nature of healthcare and the hospital setting. Additionally, it has been used in conjunction with the Theoretical Domains Framework to explore the interaction of individual behavioral factors with broader contextual issues.[17]

Results

A total of 33 ICPs were identified as potential study participants from the attendance lists provided by the Australasian College of Infection Prevention and Control. Where potential participants from this sample were not available or found not to have been involved in AT implementation, snowball sampling was used to identify another relevant clinician at that site. Seventeen ICPs consented to participate, with a resulting 15 attending 1 of 4 focus groups conducted in February 2015. Participants provided representation from infection control services in public and private facilities as well as urban and regional areas in Victoria, South Australia, and Queensland. Focus groups ran for approximately 2 hours with 1 break.

Thematic findings

Analysis of the transcripts identified 7 key themes, including (1) policy trigger; (2) policy content; (3) systems, processes, and functionality (both external and internal); (4) roles and responsibilities; (5) relationships and culture; (6) skill and competency assessment; and (7) resourcing and preparedness. These 7 themes were subsequently mapped against the 5 domains of the CFIR.[15] Mapping of the themes to this validated tool provided a more in-depth and robust understanding of the themes, the contextual factors associated with them, and the role of the CFIR constructs specific to the process of policy implementation (Fig 1).

Domain 1: Intervention characteristics

Damschroder et al[15] describe the first domain of the CFIR as being related to the characteristics of an intervention for implementation. They suggest that interventions often come to an organization “as a poor fit” and require adaptation for effective implementation. This was certainly identified by all of the focus groups, where policy characteristics were frequently discussed and associated issues highlighted.

When describing the AT policy, participants discussed understanding the rationale for the inclusion of AT in the National Standards and the relative advantage presented by the regulatory nature of

Identified Themes	CFIR Domain	Associated CFIR Constructs
1. Policy trigger 2. Policy content	**INTERVENTION CHARACTERISTICS**	Relative Advantage Design Quality & Packaging Cost
3a. Systems, processes and functionality - external	**OUTER SETTING**	External Policy & Incentives
3b. Systems, processes and functionality – internal 4. Roles and responsibilities 5. Relationships and culture	**INNER SETTING**	Structural Characteristics Networks & Communications Culture Implementation Climate
6. Skill & competency assessment	**CHARACTERISTICS OF INDIVIDUALS**	Knowledge & Beliefs about the Intervention
7. Resourcing and preparedness	**IMPLEMENTATION PROCESS**	Planning Executing Reflecting & Evaluating

Figure 1. Key themes of significance in the implementation of a national infection control policy mapped to the Consolidated Framework for Implementation Research (CFIR) domains and constructs.

the National Standards for accreditation and licensing. Introduction of the policy was highlighted as a process for reinforcing the need for monitoring of AT and formalizing something into practice: "Certainly, it wasn't a formalized program at all. I believe the reason for it being brought in is to try and formalize the process and the steps."

ICPs in all of the focus groups described poor clinical practice as a common issue necessitating AT inclusion in the NSQHS Standards. Participants discussed the lack of standardized practice and clinician confusion as a major concern for the prevention of HAI prior to the introduction of the AT policy: "The concept of asepsis had been lost. We assessed all the doctors and the nursing staff for their … AT ability. And we discovered that there was a problem. We sort of anecdotally knew that there was a problem, but we did the assessment to formalize that."

Despite acknowledging the need for the policy change, participants commonly described confusion and ambiguity around the policy and practice requirements. In particular, participants discussed difficulties in implementation from the use of specific frameworks referenced in the National Infection Control Guidelines[4] and the ambiguity of evidence to guide best practice, suggesting how information was presented and packaged within the NSQHS requirements had a significant impact on implementation: "The Australian guidelines, the infection control guidelines sort of came out. And they referenced ANTT [Aseptic Non Touch Technique] quite a lot … because of the terminology and jargon in ANTT, I think people would think that you are coming from another planet. You could see the staff sitting there thinking, 'What is she talking about?'"

Participants described feeling unsure of policy requirements, experiencing a lack of confidence in interpretation of the policy, and the significant influence of this on resourcing and waste associated with the implementation process: "There is also a fair bit of ambiguity in the standard … and there are no really clear guidelines … It is really a matter of how you feel about it. From that perspective, it is easier to resource something where you have got some clearly defined guidelines. You know, if it's left up to you to decide, believe me chief executive officers will take the least possible road of resistance."

Domain 2: Outer setting

The second domain of the CFIR refers to the "economic, political, and social context in which an organization resides."[15] Themes within this domain, such as the health system structure, as well as external processes and functions, were frequently described by participants when discussing implementation of the AT policy. Jurisdictional requirements and private sector hospital group directives were expressed as strong external influences of the AT policy implementation within the respective organizations.

The most common external function associated with implementation of the AT policy was the process of accreditation. Upcoming external review and the process of organization review by external surveyors was described as "the driving force" behind implementation of the AT policy: "Well, the driving force, of course, is accreditation survey, when they are all arriving."

Participants reported reactive and short-term implementation activities being undertaken directly in response to an upcoming organization accreditation, with little focus on long-term sustainable change: "So I have got an audit tool that we sort of use before accreditation and did some audits around the place and it was just a general sort of one. But to keep that now going, that's another issue."

Participants commented on issues with this regulatory process, with 1 participant stating post-accreditation attitudes as, "going back to proper work." "They (project workers) come in for the project a couple of weeks or months before the accreditation and helped prepare and get the documentation ready … They come in, they put their paperwork in place, and they go away and it's not actually implemented or ingrained into the culture of the organization. It just sits there."

Other participants raised issues with inconsistency of accreditation assessment and difficulties with interpretation of the policy requirements by external surveyors: "The accreditation learning was a motivator to get some action happening, but I was very disappointed in the accreditation process, itself in that it didn't actually evaluate the quality of what was happening. So I guess it worked as a flag/motivator. But for me, coming out the other end, it was very disappointing. It didn't evaluate the quality of the AT program."

Domain 3: Inner setting

The inner setting of the CFIR includes constructs that exist "within an organization" that influence implementation, such as organizational structure, learning climate, leadership, and culture.[15] In this study, internal processes and functions were commonly discussed in describing implementation of the AT policy. Participants commonly described the development of new hospital policies as a large part of the policy implementation process, "reinforcing" new practices. Participants also described different configurations in regards to the roles and responsibilities of staff in implementation of these AT

policies. Both formal and informal structures were described, with a large part of the focus on the allocation of responsibilities in the implementation of the AT interventions, such as clinician education. A participant from 1 site described separation of roles between infection control and education departments as "ineffective," stating "It's (AT education) been taken out of our hands."

Other participants described active efforts to ensure decentralization of responsibility, commenting, "I have deliberately not taken responsibility for asepsis," suggesting that responsibility for actual AT practice change was not considered to be a part of policy implementation.

Relationships and culture were another important theme raised throughout all of the focus groups. Relationships between professional groups, in particular with medical staff, were highlighted as a significant influence in the policy implementation process. Relationships between departments were also commonly discussed. Some ICPs reported a disconnection between infection control and safety and quality departments. One participant suggested that this may be a result of the structure of the NSQHS Standards, "(The) Standards have kind of created silos." "Right, you have got this standard."

Whereas another participant described competing priorities for departments and staff, "There are a whole bunch of other things that drive practice these days that aren't related to patient safety outcomes and they are things like through put, particularly in operating rooms."

Within this domain, one of the constructs discussed by many of the participants was the issue of preparedness or readiness for implementation. Resourcing was one of the most common factors highlighted throughout all of the focus groups. Participants described costs associated with policy implementation, including physical costs such as the purchasing of new equipment, but also described the most significant costs as being associated with staffing of implementation activities: "But when the standards came in, it was a bit like, 'Well, now it has to be done or we are not going to pass the accreditation,' which I guess gave us then some power to request some assistance because before, everyone else had wiped their hands of it, as you have already alluded to, 'Yeah, infection prevention will deal with that.' I'm like, 'Great, where are we going to pull the resources for that?'"

One participant described policy implementation activities as "extremely labor intensive," with many participants describing issues with prioritization of work, no additional staffing, and no funding for the significant amount of additional work required: "There's been a lack of recognition around growth, expectations, accreditation, standards ... And who takes responsibility for it as well? Because it comes under the 'infection control banner,' apparently, we are responsible for it."

Participants also highlighted issues with capacity and workloads both for themselves in implementation of the policy as well as clinicians to undertake the required activities outlined in the AT criteria of the NSQHS Standards: "What resources or supports were there ... before it all started?"

Domain 4: Characteristics of individuals

The fourth domain of the CFIR refers to the individuals within an organization and how these individuals influence behavior change.[15] In this study, characteristics of both the ICPs themselves and the clinicians to which the policy applied were discussed when describing implementation, particularly associated with the construct of "knowledge and beliefs about the intervention": I think it is up to the individuals, if they see worth and if there's value in it for them, or if they can see that ... this is a deficit, then you are likely to get buy-in."

Some participants described concerns with the principals of the AT policy requirements, specifically questioning the validity of competency assessment and the value of auditing in changing individual practice: "But there's no change. So you think, the competency is a test. It doesn't mean because you know ... that when you get to the coalface and you are doing it, that it makes any sense to you at all because it doesn't seem to."

Participants questioned the requirement of skill and competency demonstration, as directed by the AT policy with 1 participant asking, "What does competence mean? You can be competent today but not tomorrow?"

Clinician attitudes towards the value of AT auditing and its compatibility with other priorities and heavy clinical workloads were also raised. Participants described this burden and the need to be: "measuring all the time" as "tak(ing) away precious time" (from other work). "Audit is an extremely dirty word. Use that word again with the (managers), I think they will revolt and leave the hospital because they have got more and more auditing that we want to put back on them because we physically can't do all the infection control auditing."

Domain 5: Implementation process

The fifth and final domain of the CFIR is the implementation process, which includes the 4 constructs planning, engaging, executing, and evaluating.[15] Themes raised by the participants within this construct commonly referred to a lack of planning or consideration about how to most effectively implement the AT policy requirements, at both the policy development level and at the organization level: "I don't think they consider it. I don't think it was considered when they released all these standards. Rightly or wrongly, should it have been looked into, the staffing that is required to put into standard 3?"

Participants also suggested that sharing of resources and standardization of activities and tools would have greatly assisted with implementation of AT policy requirements: "We waste enormous amounts of hours reinventing the wheel. What you want is the tools, the audit tools, video, learning package or a quiz, or "this is what it means," so you can just implement it. Once again, how many? When you add up all the different networks/hospitals that have done everything on there, and even though I have borrowed from somewhere else, I have spent a hundred hours or more on my hospital."

When discussing the effect of policy implementation and its impact on practice, participants commented on their inability to identify the quality or effectiveness of policy implementation, describing no formal evaluation processes being established. Many commented that the real impact of the policy implementation remains unknown. Participants did anecdotally discuss the effect of policy intervention activities on behavior change with varied responses in regards to the improvement of clinical practice, some area reported improvement in practice, particularly for nursing staff, whereas other participants reported "marginal" change despite significant investment in resourcing and implementation activities: "Yes, but because we are private and we haven't had the chance to tackle our medical staff yet, I would say in the nursing side of it, we have definitely seen a change."

When talking about evaluation, participants also referred to other changes resulting from policy implementation such as standardization and access to equipment: "We have some very basic things in place, like enough trolleys, how they are storing equipment. That it is easy for staff to save all their cannulation gear in the 1 spot, and it is always in the same spot in every clinical area."

DISCUSSION

The qualitative nature of this study allowed direct clinician accounts of national infection control policy implementation, which to our knowledge has not previously been examined in Australia. All

ICPs across different infection control services and in differing levels of remoteness described similar contextual and policy-related factors influencing implementation of the AT criteria from the NSQHS Standards.

When analyzed against the validated domains of the CFIR, it became clear that specific constructs of the framework were more likely to be of significance because of the nature of the externally directed and developed policy (and the associated regulatory processes that sit alongside it). Damschroder et al[15] state that interventions (of any nature) "usually come to a setting as a poor fit." This may be particularly relevant when implementing any sort of policy intervention mandated by an external regulatory body, such as the NSQHS Standards, where the policy is developed to cover a broad range of services and settings with a "one-size-fits-all" approach, subsequently lacking specificity. This may also explain why issues with policy design, ambiguity, and a lack of clarity were commonly highlighted as issues for policy implementation in this study, suggesting that policies broad in scope or setting may need greater support, in the form of tools or resources, for implementation.

External development of the policy and policy requirements also had ramifications for costs and resourcing issues for organizations when implementing the AT policy, and this was well described throughout the study. The results suggest that resource implications need to be more explicitly stated in relation to standard implementation.

The other significant factor for consideration from this study was the influence of regulatory processes and mechanisms on implementation of policy requirements. Interestingly, many participants expressed that there was a real need for some action to address poor aseptic practice prior to the introduction of the NSQHS Standards and understood this to be a legitimate reason for the inclusion of AT in the policy. However, due to the soft regulatory process of accreditation and external review, many ICPs felt that organizations had chosen to implement the AT policy as a reactive process, with implementation activities only being done to meet accreditation requirements without a true focus on improving clinical practice.

The context of policy implementation and this role of regulation had further influence, even at the inner setting and individual levels. When discussing relationships, culture, and individual attitudes to the policy intervention, many of the comments had a regulatory perspective. Noticeably, comments about relationships referred to accountability structures and roles and responsibilities. Comments on the value and practices of individuals were also all focused on their regulatory roles of auditing and monitoring.

It is not known how these contextual factors specifically impact on the effectiveness of policy implementation, as this study did not evaluate actual implementation success within these organizations. Further research focused on evaluation and measurement of each of these factors, and particularly the resource and cost impact of implementation, would strengthen these findings and provide greater insight into the policy implementation process.

CONCLUSIONS

This study contributes much needed research into the implementation of policy as an intervention in the hospital setting. It has identified several policy and context related themes common to ICPs responsible for implementing the national AT policy. Findings suggest that the implementation of policies is potentially influenced uniquely by specific factors, compared to the implementation of other voluntarily adopted quality improvement interventions. It appears that certain constructs apply to policy implementation in distinct ways, possibly because that policy is developed externally and not necessarily best-fit.

The findings from this study also highlighted the role that regulatory processes, such as accreditation, play in driving policy implementation, including the reallocation of resources to meet policy implementation deadlines. This indicates that further consideration of regulatory processes may be of importance when developing policy and planning for policy implementation.

With the use of health policy as a tool for health reform and an important part of the safety and quality healthcare agenda in Australia, more research is needed in this space to better understand each of these important constructs and the influence of these on implementation of policy and associated patient outcomes.

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