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**Bridging the second gap in translation: a case study of barriers and facilitators
to implementing Patient-initiated Clinics into secondary care**

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Abstract

Rationale: Patient-initiated clinics (PIC) have been found to be safe and have patient and service benefits in terms of satisfaction and cost. This paper reports our experiences of implementing PIC and the practical challenges of translating research into practice.

Methods: The Knowledge to Action framework was used to inform the design of implementation plans in three different departments in one secondary health care organisation. A focused ethnographic approach was utilised to collect data on barriers and facilitators to implementation which were analysed using iterative qualitative analytic techniques. The Promoting Action on Research Implementation in Health Services framework was used to develop the analysis and data presentation.

Results: The success of implementation was mixed across the three departments. Despite evidence of effectiveness, contextual issues at a department level, such as empowered leadership and team members, trust in colleagues and patients and capacity to make changes, impacted on the progress of implementation.

Discussion: Patient Initiated Clinics can offer a useful and feasible alternative for follow-up care of some groups of patients with long-term conditions in secondary care, and can be implemented through strong leadership and teamwork and a positive attitude to change. Although Implementation Science as an emerging field offers useful tools and theoretical support, its complexity may create additional challenges to implementation of specific interventions, and so further contribute to the second gap in translation.

Introduction

Despite the ever increasing volume of high quality health services research being reported, a clear process of how to translate research into practice is not often described (1, 2), although barriers to the uptake of evidence have extensively been discussed (3-5). In the UK, the Academic Health Science Networks (AHSN) and the National Institute for Health Research (NIHR) Collaborations for Applied Health Research and Care (CLAHRCs) both aim to overcome the gap in knowledge translation and support research into practice to improve patient outcomes (6).

Patient-initiated Clinics (PIC) provide an alternative to traditional secondary care follow-up enabling patients with long-term conditions to activate an appointment when they need it rather than having routine follow up at a time when they may be well. The ability to deliver routine follow up often outstrips capacity and is not sustainable in the long-term in the National Health Service (NHS). In addition, routine appointments are frequently delayed, thus potentially incurring risk as there is limited or no access to timely care which goes against the principle of 'right place, right time' (7). Recent systematic reviews conclude that PIC are safe and can be cost-effective as well as improving quality of life and patient and clinician satisfaction (8-10).

A team from the South West AHSN and the NIHR CLAHRC South West Peninsula conducted an eighteen month project to facilitate and evaluate the wider implementation of PIC within the context of one secondary care NHS organisation. An academic, manager and clinician partnership approach was developed to implement PIC. This paper aims to share our experiences of the challenges and insights into what helps and hinders the translating of research evidence into practice, informed by implementation science models, theories and frameworks.

Methods

The PIC Implementation project

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PICs are scheduled by the patient when they experience deterioration and are instead of having regular clinician or service driven appointments. They are suitable for those patients with long-term conditions, particularly those of a relapsing/remitting nature, who are able to self-regulate and monitor their own symptoms. PICs involve patients or carers contacting a nurse-led advice line where a face-to-face appointment can be made, where clinically indicated, within a defined time period, e.g. ten working days, with the nurse specialist or physician.

Three hospital departments were identified to implement PIC. Departments A and B were proposed by the hospital management (top-down approach), as likely to have suitable patients for PIC. Department C had previous experience of implementing PIC and wished to expand to other patient groups within their speciality (bottom-up approach). Additional characteristics can be found in Table 1.

INSERT TABLE 1 HERE

Clinicians needed to decide on patient criteria within their speciality that would be suitable for PIC and ensure there was clinical capacity to enable timely access to services when required. In addition, the teams needed to decide on the methods and materials to educate those patients about PIC, the mechanisms for patients to be able to contact the service, and get a timely response, and a safety net process to ensure patients who might find it difficult to self-monitor do not slip through the net.

Initial engagement with key personnel, such as the quality improvement director, managers, specialist nurses and consultants for each department, was undertaken to introduce and develop PIC, as well as co-organisation of patient workshops and focus groups with staff. To understand current procedures and practice, a researcher attended clinics and coordinated exchanges between various stakeholders, including those providing infrastructure support such as IT and administration.

The 'Knowledge to Action' (KTA) Framework (11) was used to design and develop phased implementation plans with each team. KTA combines two interactive phases of Knowledge Creation and Action Cycle. Knowledge Creation uses existing evidence to inform the Action Cycle, or the actual

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process of implementation. However, this process was iterative with activities happening simultaneously, sequentially, and informing each other.

As this project related to service evaluation, ethical approval was not required although it was recorded with the organisation's Research and Development department.

Data collection

We used a focused ethnographic approach to establish experiences and factors associated with implementing PIC into practice (12, 13). This approach emerged, and has been applied in healthcare research, as a pragmatic and efficient method of focusing on a distinct issue, topic or shared experience in specific settings to explore the beliefs and practices from inside the context within which they occur (14, 15). One researcher (the first author) was regularly immersed in the day-to-day business of the three departments. This approach had two clear advantages: it allowed the establishment of trust and rapport with the stakeholders, as well as uncover issues that would have been missed using a more deductive approach or formal interviews. This approach provided insights regarding undercurrents, unstated concerns and anxieties, interpersonal relationships and power dynamics in and between teams, as well as giving the researcher a better understanding of the 'machinery' and logistics of the hospital. Field notes taken directly after a specific observation and research memos reflecting on the general process and were used as an 'audit trail' to enable transparency in the research process (16). This provided a wealth of data on strategy, practices, and patients' and staff needs, which proved invaluable for understanding the experience of barriers and facilitators for implementation. The period from entry to exit in the field stretched over fifteen months, and approximately included 80 hours of direct PIC related contact with hospital staff and patients and 200 hours of observation time.

Analysis and representation

Techniques for qualitative, iterative analysis were applied throughout all stages of the research process (17), switching between macro and micro parts of the system. Using this process we identified what

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worked well, what required modification and what factors seemed to hinder or facilitate the implementation process at an individual, team or organisational level. Emerging insights were included in subsequent cycles of data collection and analysis. Themes and patterns were discussed between three members of the research team. We reflected on discrepancies, patterns and potential connections between variables, expected and unexpected outcomes, and other relevant findings. This approach enabled independent cross-checking and reduced potential researcher bias (18). Data saturation occurred after nine months, after which no new information or themes arose.

In the final phase of analysis we used the revised 'Promoting Action on Research Implementation in Health Services' framework (PARIHS) (19) to structure our themes and to present our findings. PARIHS considers successful implementation as 'a function of the nature and type of evidence, the qualities of the context in which the evidence is being introduced, and the way the process is facilitated' (20). Each of the elements 'can be assessed for whether it will have a weak ('low' rating), medium, or strong ('high' rating) effect on implementation' (21).

Results

Using the PARIHS framework, we found that although the three departments were part of the same organisation they varied considerably in terms of context and progress towards implementing PIC. Department A expressed mixed feelings about PIC from the outset, and we experienced little progress despite good will from some of the clinical team. Department B explored the feasibility of PIC for their disease group, discussed criteria, designed materials and triaged one consultants' waiting list to establish what type of follow-up would be appropriate. At the end of the project, they decided to continue to include PIC as a part of a range of follow-up options for their patients. Department C built on their previous work to implement PIC into their service for those with a particular condition by expanding to other patient groups. Table 2 provides an overview of the PARIHS elements and the ratings we ascribed to each element for each hospital department. Key insights are reported in more detail below.

INSERT TABLE 2 HERE

Evidence

Although published evidence for PIC provided proof of concept of effectiveness, evidence for the different patient groups in our evaluation varied. For the patients groups involved in Departments A and C, population-specific randomised controlled trials had been undertaken whereas there was no existing evidence for PIC being utilised with the patient groups seen by Department B.

Clinicians and managers had mixed experience of PIC and not all understood or subscribed to the concept of PICs. However, we recognised that the design of PIC for specific patient groups needed careful consideration in terms of pathway, condition characteristics, diagnosis and patient suitability. Department A was not interested in one team member's extensive experience with implementing PIC in other healthcare organisations and were unreceptive to attempts to utilise this experience locally. In Department B there was no previous experience of this type of intervention, yet the team moved ahead slowly and proactively. Department C built on their experience of previously implementing PIC with one patient group and expanding it to other patient populations seen within the department. This included involvement of a wider group of staff in terms of grade and professional background.

Patients from all three departments expressed enthusiasm about PIC during focus group activities and feedback on the design of patient education materials. Patients from Departments A and C asked for the inclusion criteria to be widened, to allow more flexibility and the ability for decisions to be made on a case-by-case basis as to whether PIC would be appropriate for an individual patient. This request was particularly common amongst those recently diagnosed with a long-term condition as well as those whose condition was relatively unstable but who felt PIC were suitable for them, while the existing criteria would exclude them.

"I'd like to go on it, but haven't been diagnosed long enough. If it's too early in your trajectory, it's not in your best interest. It needs to be for the right reasons" (Patient, Department C)

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Contextual readiness

The second element in the PARIHS framework concerns contextual readiness, which refers to the setting in which the intervention is to be implemented, including structures and environmental characteristics that shape practice, such as leadership support, culture, capabilities and receptivity to change (19). This element was found to be the most significant for our implementation project.

Leadership support

When one department (A) became resistant to change and progress it became apparent that senior managerial support from within the hospital would be required. As a consequence of conflicting operational pressures on the department, this support was not provided. At a departmental level staff wanting to lead the implementation of PIC were enthusiastic but did not always have the authority to agree and deliver actions, and may therefore not have been the right people to progress the implementation.

“These initiatives are there, but there is no one to oversee it” (Comment from a Clinical Team meeting, Department A).

A lack of continuity through changes to or absence of staff in Departments A and B further impeded the planning stage of the implementation of PIC. Arranging meetings between the researcher and clinical staff, as well as between different members of the clinical team, was difficult with all three teams, due to time pressures and clinical priorities. Finally, at times we observed there to be procrastination, a lack of ‘driving force’ from within the teams and repeated failures to complete agreed actions that resulted in an inability to progress towards the next implementation stage. As a result, even piloting small cycles of change was challenging, let alone spreading and maintaining them.

Culture

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Our project encountered several barriers regarding departmental and wider organisational culture. First, implementing a service redesign project like PIC within a system as complex as an acute hospital requires collaboration across departments and infrastructure in order to change service delivery. Each department experienced difficulty in gaining the relevant support to allocate nursing staff time for monitoring the telephone advice line, organising the education sessions, and subsequent clinic appointments. Establishing PIC also requires the cooperation of the administration team who sometimes lacked the staff capacity and know-how to do this.

“It will fail if not done properly, so make sure that there is a person who knows what you’re asking them to do; train them up, value them. Even though Central Admin is now more like a call centre, there can be specific people responsible for specific tasks.” (Meeting between Staff members from Department B and from Department C)

Additionally, setting up PIC required different ways of registering patients in the booking department and on the IT system in order to administer the patient on the right waiting list as well as putting in place a safety net appointment that would automatically be updated if a patient contacted the advice line. Secondly, a lack of efficient internal communication led to unaddressed gaps, duplication of work, and delays in implementation. We saw proactive leadership in Departments B and C used to tackle these barriers, for example by working in collaboration with the administration team. However, within Department A offers from staff with experience of implementing this model of care elsewhere were not taken up.

The third major ‘cultural’ challenge was capacity, whether actual or perceived. Due to time pressures and clinical work load it was often difficult to arrange meetings. This led to a general lack of information, awareness and understanding of the project, and hence reduced ownership and buy-in. This was a particular issue in Department A, where creating understanding was found to be a lengthy process, even within the team leading the development of the implementation. It was necessary to clarify

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understanding or actions that been previously agreed on a number of occasions. In addition, some staff expressed they could not engage with developing their service due to 'too many other things going on'. Other observations regarding team dynamics were of a more tacit nature, including the differences in personal empowerment, staff support, efficiency, co-operation, and team spirit that impacted on the implementation. For example, across all departments some individual staff raised issues that they indicated they wouldn't have voiced if the wider team had been present. We observed de-motivated staff members, who were struggling with their workload and appeared to be unable to muster the energy, willingness, or capacity to engage with the implementation of the intervention. Comparing our observations across the three departments revealed a relationship between the level of individual empowerment of team members, as indicated below and the level of successful implementation.

"If I have reason for concern, I can contact either [nurse] or a consultant directly." (Meeting with clinical staff member, Department C)

Evaluation capability

Being able to build on telephone advice lines and email services that were already in place facilitated the implementation of PICs. However, several resource barriers reduced capability for evaluation. First, we observed a general lack of efficiency regarding existing procedures regarding follow-up appointments across the hospital, with significant operational differences between departments. This included outdated IT structures, patient administration and the unstandardized use of administrative paperwork, all of which negatively impacted on the possibility of implementing new practice. This lack of clear and convincing information discouraged clinicians to change practice, or the organisation to provide financial resources for protected staff time and also complicates future evaluation of the intervention.

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“There were 18 waiting lists for one group of patients with five different outcome forms from clinics, that were often incomplete, and no clear pathway of care” (Report on follow up services from Department B)

Receptivity to change

We observed that some of the senior clinicians in Departments A and B remained unconvinced of the need for change. For example, some staff in one team reported they were already undertaking PIC within their service, although we found no evidence that this was happening in practice, even when we spoke to patients. Some staff also reported a concern with losing financial revenue because these ‘new’ clinics might not be remunerated. A lack of trust in the capability of patients and the ability of colleagues (GPs and other members of the multidisciplinary team) was expressed and we were presented by clinicians with the perception that patients would not be ‘safe’ unless they were under the care of the specialist (with regular appointments) despite the fact that patients may be waiting more than two years for a severely delayed follow-up appointment.

“Yesterday at a meeting for example, she wasn’t allowed to explain how she saw the potential changes that could be made to the service quite easily.” (Notes from discussion with staff member from Department A)

Facilitation

The purpose of facilitation for each department was to achieve the successful implementation of PIC. Beyond the clinical team members who were leading the implementation, additional support was offered to each of the three departments by the organisation’s quality improvement lead. Where necessary, teams asked for expert advice on specific issues from managers and infrastructure support teams. External support was provided to all three departments from the academic team, however, it was recognised that this role held little authority in terms of endorsement to drive change.

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There was regular contact and communication between the academic team and the internal leads, providing practical assistance, focusing on solving problems, and evaluating small cycles of change. Facilitation from the research team was both 'task' focussed and 'holistic' (19), aiming to match 'the purpose, role, and skills (each of which can exist as a series of continua) to the needs of the situation' (22). Activities included supporting the development of the implementation plans, keeping track of the necessary steps to proceed, and assessing barriers and potential solutions such as facilitating communication between different departments. The facilitation provided was responsive (19), as well as flexible, continuous, and reflexive (20), offering support, such as redesigning paperwork (doing for) and working together with staff and patients to design educational materials (doing with) (20). In addition, all three departments were offered financial support to facilitate overcoming specific barriers, such as some additional administration time for a limited period. Departments B and C accepted and utilised these resources, whereas Department A identified an administration activity that could be resourced to free up some nursing time to work on implementation – though in fact they failed to move beyond the idea and take action. Whether the acceptance of these resources in these two departments led to a higher success regarding implementation, or whether they were able to accept this support because they were more empowered and more aware of the need to solve particular issues, is uncertain.

We facilitated the process of implementation by listening, explaining, networking and understanding (19), as well as having the 'ability to work within and across role and structural boundaries in the organisation' (23). Internal facilitation by Department A was hindered by difficulties they were experiencing at the time of the implementation with the team dynamics, while Department C was able to overcome most of the internal barriers due to strong internal drive from both individuals and the team as a whole. Department C was also strongest in 'other implementation interventions' that supported the uptake and sustainability. This included, for example, reviewing the education sessions in conjunction with patients.

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“Patients reported feeling engaged, interested and appreciated for being part of the development” (Observation from a joint meeting with academics, nurses and patients from Department C)

Discussion

Implementing PIC with three different departments in one secondary care organisation was met with mixed success. We found Department C to be the most successful having ‘high’ ratings in most of the PARIHS elements. Department B had some success with varied ratings across the elements and Department A was unsuccessful in implementing PIC and this was particularly driven by a lack of contextual readiness. Going through the exercise of applying the PARIHS framework supported this conclusion, and successful implementation indeed requires a combination of evidence, contextual readiness and facilitation (19). Comparing Department A and C and their mixed progress, there is a case for arguing that contextual readiness seems to be the strongest influencing factor. McCullough et al (24) suggest that a department needs ‘at least one and possibly two contextual elements to be strong (such as leadership, teamwork or communication) for uptake to occur. If a site was relatively weak in all three of these, uptake would not occur, despite a strong belief in the evidence. Department A were unable to overcome weaknesses, despite evidence for effectiveness, particularly in relation to contextual factors, such as a lack of leadership and teamwork, indicating that strength of evidence on its own is not sufficient. The top-down approach taken with two departments (A and B) did not take into account the willingness and capacity (physical or psychological) of individual departments to engage with a process of implementation. The bottom-up approach where clinicians were driving the process (Department C) appeared to be the most successful in implementing PIC, recognising however that this department built on previous experience, whereas Departments A and B had to build PIC from scratch. Having an open dialogue whereby clinical teams identify whether PIC is suitable for their patients, rather than management defining which departments may benefit from the different approach to follow-up, may be more conducive to improving uptake.

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Themes seen across all the departments were organisational issues, trust and communication. These are interlinked and would need to be addressed for successful future implementation. Reservations to implementing PIC were related to clinical and safety concerns, lack of time due to work-load, financial concerns, and a lack of empowered leaders to make decisions. Good will was there, but the know-how appeared to be limited, a situation which is not served by the lack of continuity of staff within teams. In order to enhance collaboration and exchange of experiences, different hospital departments could share their own learning as to how they have successfully brought about service change. Although some organisational barriers seriously impeded the implementation, it was outside the scope of our project to address these issues. This appears to be the reality of implementing any everyday (clinical) practice, particularly a complex service redesign, and may be partially responsible for the second gap in translation.

Whear et al recommend the 'need to establish the most effective methods of PIC implementation,' as well as exploring 'the relationship between patient and consultant ... in relation to the fidelity of implementation and effectiveness of PIC' (8). Further PIC evaluation will inform both these recommendations. We recommend tailoring the implementation of PIC in different contexts to allow for individual adjustments to ensure wider uptake, and increase quality and appropriate use of the system. This would allow both clinician and patient to decide to (temporarily) switch back to routine care, to ensure that PIC is the right choice at the right time.

In terms of knowledge translation of research findings, Lavis et al (25) pose five helpful questions: (1) what should be transferred; (2) to whom; (3) by whom; (4) how; and (5) with what effect should research knowledge be transferred? In our case, questions 1, 2, 3 and 5 were relatively easy to answer. Question 4 however underlines the difficulty of how to bridge the gap between evidence and clinical practice, which unfortunately is the hardest to answer, and the one with the least concrete resources as every implementation project needs to make this translation to local context.

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Implementation Science as a field offers helpful models, theories and frameworks, but there are so many of them that it brings additional challenges. Furthermore, fields such as management science, organisational change, quality improvement, knowledge mobilisation and knowledge brokering all provide overlapping and sometimes conflicting guidance. As time for fully grasping the complexity of implementation is scarce for healthcare organisations and clinicians due to pressure to provide clinical services, guidance and signposting for those implementing the research into practice on how to understand the available materials and to make informed choices is essential. This may take the form of a 'road map', guiding the user through a series of questions and possibilities to choose frameworks, models and theories to support them. Tabak et al offer a useful start (26), as do the updated QUERI Implementation guide (27) and the Report on Knowledge Brokering (28). The value of a partnership approach, such as that utilised by the CLAHRCs and AHSNs is evident (29). However, in our study, this 'coming in from the side' approach to support implementation has its own challenges and we found that offers of small amounts of practical and financial support were at times ignored in favour of 'must do' directives within the hospital.

We chose to use the KTA and PARIHS frameworks retrospectively but acknowledge that we may have rejected other potentially useful frameworks. On the other hand, there is much overlap between and even within the various frameworks, that perhaps this choice is not as important as it might at first seem. Although we did not start with KTA right away, it offered useful support for the design of the implementation of the PIC intervention in each department. Justifying the chronology of the research process in hindsight as if it fitted within KTA from the beginning is an example of the challenge of doing implementation research.

We initially rejected the PARIHS framework considering it too simplistic to be useful. This appeared to be a premature judgement and we retrospectively (21) applied it as a way to understand the varying success of implementing PIC across three departments and what was enabling and constraining the implementation process (30). Although we chose one framework to support our design, and one for

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presenting our data, there is overlap in terms of looking at evidence and context, which are present in both frameworks, as well as in other frameworks (11, 31-37). The PARIHS element of contextual readiness is also recognised in the Normalization Process Theory (38) and the Behaviour Change Wheel (33). The element of 'facilitation' however has received little attention (30) and is, to our knowledge, not explicitly recognised in any other implementation model, although our analysis indicated it plays a significant role in implementation success, which is supported by other empirical work (39).

Although the PARIHS framework was designed to assess readiness for change, track 'change and progress throughout an implementation project' (40), and 'to be used as a practical and pragmatic tool by practitioners and researchers at the local level' (20), it does not offer ready-made translation of specific evidence into a specific context. The framework was nevertheless useful to reflect on the role of the different elements of evidence, context and facilitation with regard to the levels of success of the implementation in various departments, and especially to structure the presentation of our data.

We are now using the findings of this study to inform the development of draft materials to support the implementation of PIC which could be refined and tested with other departments and hospitals. Aside from these materials, implementing patient-centred approaches will also require a significant change of culture within the NHS. The necessity for life-long regular reviews in secondary care for those with long-term conditions creates a significant demand on the system (41) with the increasing ageing population and prevalence of long-term conditions. Therefore, an exploration of different models of care, moving away from the current hierarchical approach towards involving patients and other health care professionals is essential for sustainability, as well as resources and support to facilitate change. This in turn calls for looking at clinicians' deep-seated beliefs and practices about patients' capability, trustworthiness and responsibility in their care, which may require an emancipative cultural turn to emphasise active agency.

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This study has several limitations. Although implementation plans were developed with three departments, they were within the same organisation. This raises the question to what extent our insights are applicable elsewhere. Our initial task included implementation support and evaluation, but due to the time-consuming nature of supporting the teams to design the implementation, there was no time for spread on a larger scale with parallel evaluation. Finally, the study may have benefitted from the use of the PARIHS during the design stage to pay more attention to issues that proved to be significant obstacles for implementing the PIC intervention.

Conclusions

The process of translating PIC evidence into everyday clinical practice in one NHS organisation was found to be challenging, and yielded mixed results across three departments. It confirms the PARIHS hypothesis that successful implementation is a function of evidence, contextual readiness and facilitation. Testing of theory is difficult in a highly pressured short-term implementation project, and the complexity of Implementation Science as a field, which is developing and evolving, contributes to challenges to addressing the second gap in translation. Clear signposting to simple and useful implementation models, frameworks, theories and associated tools is essential to aid this complex and challenging process which will support clinicians and managers to bridge the evidence-practice gap.

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Table 1: Department characteristics

	Dept. A	Dept. B	Dept. C
Number of Medical consultants	8	6	6
Number of patients with overdue follow-up appointments	2342	942	2000
Department experience of implementing PICs	No	No	Yes

Implementing patient-initiated clinics

Table 2: Departmental Summary of Elements and Successful Implementation

	Dept. A	Dept. B	Dept. C
Evidence			
1. Research and Published Guidelines	Medium-High	Low	High
2. Clinician experiences	Medium	Low	High
3. Patient experiences, needs and preferences	High	Medium	High
4. Local practice information	Low-Medium	Medium-High	High
5. Characteristics of PIC	Low-Medium	Medium-High	High
Contextual readiness			
1. Leadership support	Low	Medium-High	Medium-High
2. Culture	Low	Low-Medium	Medium
3. Evaluation capabilities	Low	Low	Low-Medium
4. Receptivity to the targeted EBP/Change	Low	Medium-High	High
Facilitation			
1. Purpose	Medium	High	High
2. Expectations & activities	Low-Medium	Medium-High	High
3. Skills & attributes	Medium	Medium	High
4. Other implementation interventions	Low	Low	High
Successful Implementation	Low	Medium	High

