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EMERGENCY DEPARTMENT COLLABORATIVE QUALITATIVE EVALUATION REPORT

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1.1 BACKGROUND

During 2002–2003, the National Institute of Clinical Studies (NICS) embarked upon a project to encourage evidence-based practice and introduce quality improvement methods to forty-seven hospital emergency departments across Australia. Known as the Emergency Department Collaborative (EDC), the project methodology was based on clinical improvement methods used by the Institute for Healthcare Improvement in the United States. Key objectives of the EDC were:

- ▶ To improve emergency department care through the improved application of current knowledge.
- ▶ To promote collaborative improvement methods to achieve and sustain the changes.
- ▶ To provide practical tools to help emergency department clinicians.

Some worksites achieved sustained change and improvement. Other sites were not so successful: unable to implement PDSA or arrive at sustained change and improvement to their clinical practice.

In December 2002, NICS commissioned a qualitative evaluation of the EDC 'to determine the impact of the collaborative on patient care, patient satisfaction, staff culture and readiness for change, problem solving and innovation, staff attitude to use of evidence, the sustainability of improvements and what contributed to this, spread and cost-effectiveness'. In addition, NICS sought to ascertain the 'black box', the essential ingredients in the success or otherwise of the EDC.

The qualitative evaluation found that a successful collaborative is contingent on a culture that supports quality improvement within a complex and dynamic environment.

1.2 KEY FINDINGS

Key findings of the evaluation are:

- ▶ NICS played a vital role in supporting the EDC in its establishment and maintenance phases.
 - NICS EDC model was instrumental in instigating a 'community of learning' among participating organisations. Time and resource constraints limit the ability of hospital departments to up-skill their staff. NICS provided a learning infrastructure through a number of initiatives: three two-day learning sessions held roughly three months apart, training in the Plan–Do–Study–Act (PDSA) cycle, quality improvements in the health sector and quality generally, evidence-based practice, change management strategies, training materials, conference calls, expert advice, an NICS EDC website-based reporting system, and collation and feedback of results to participants. NICS provided an anchor topic, *time to analgesia*, which had wide appeal and capacity to deliver tangible improvement in patient care which participants could identify with.
 - NICS provided the communication infrastructure encouraging participants to network, exchanging ideas, experiences and practical strategies while supporting each other down the path of continuous improvement.
 - NICS status as a respected external institution *with a clinical focus* and role in actively encouraging evidence-based clinical practice and evidence-based improvements gave senior and line management and project team members the imprimatur for authorisation of quality improvement activity.

- ▶ The importance of undertaking a project that is 'meaningful' and can make a difference in terms of patient outcomes is a key indicator of success.
- ▶ The role of the executive sponsors (organisation leadership) in committing their organisation to the EDC is a key determinant affecting the overall success of their site's participation in the EDC. Turnover of executive sponsors impedes the success of a collaborative. Understanding one's role and responsibility as an executive sponsor enhances the success of a collaborative.
- ▶ Selecting the 'right' team of committed individuals is critical to success. Selecting too narrowly and too few people for the project team reduces the sustainability of a collaborative.
- ▶ Communication is an important ingredient of embedding the EDC. Maintaining regular and ongoing communication with the emergency department staff was perceived as critical in providing an anchor for the project. This included formalising updates and dialogue among emergency department staff by including the project in the regular meetings, seminars and other activities of the department. In addition to formal communication methods, informal communication and problem solving on the ward floor was also part and parcel of the change process.
- ▶ Collection of patient data in providing an objective measurement of emergency department performance proved a strong professional and emotional trigger for the majority of participants to commit further to the EDC and use of the PDSA methodology.
- ▶ Effective IT systems were important for enhancing engagement with the EDC. Inefficient IT systems were time consuming, relied on the commitment of individuals and created barriers, where there was no dedicated resource for data entry. In some worksites, the EDC provided the momentum to sort out IT problems, skill staff in the use of IT systems and to educate hospital IT departments about demands coming onto the systems from quality improvement requirements.
- ▶ Short-term and narrow definitions of success may prematurely judge the effectiveness of the EDC.
- ▶ There were positive spin-offs from participating in the EDC that embedded a culture of quality improvement and enhanced the probability of sustainability. These included sharing notes with other organisations, the professional development of staff and the up-skilling of personnel with applied quality improvement and PDSA methodology. All these made for an attractive package.
- ▶ There was no evidence of distinct and formalised organisational policy that recognised the EDC as a bona fide part of quality improvement. The EDC initiative was dependent on the executive sponsor responsible at the time of project sign up and commencement.

1.3 RECOMMENDATIONS

1. Unpack the front end of the EDC methodology and provide a formal briefing session for decision-makers for the initial contact person(s) or those responsible for committing their hospital to the project. After the formal briefing, invitees should be given enough time to communicate with their associates at the worksite and then be invited to commit formally to participate in the EDC. The briefing session should cover:
 - a. The nature, methodology and scope of the EDC.
 - b. The expectations and needs created on site by projects. These include:
 - allocation of resources to support the EDC project team and its work, particularly non-clinical time and staff backfilling
 - budget allocation for the production of resources (for example, posters, protocol development) and the enhancement of communication (for example, on site seminar(s), briefing sessions)
 - administrative and IT support for data collection and collation.
 - c. Formalising the status of the EDC as part of the hospital QI policy and develop liaison between the project team and quality assurance department/officers at the hospital.
 - d. Optimising the successful participation of their organisation, including the composition of an effective project team. The project team should reflect the workforce composition in the site(s) of the EDC.
 - e. The requirements of hosting a project with multiple-site implementation, for example, planning, negotiation and consultation across all sites, project team establishment and resources for each site.
 - f. The availability of possible external funding sources to support the EDC project at worksites.
2. Introduce an EDC policy for attendance at the learning sessions and particularly attendance of people from the project team in line with 1(d) above. Make this a prerequisite for acceptance of each worksite's learning session registration.
3. Incorporate EDC initiatives into the formal quality infrastructure (quality department) at sites. Without any formal connection to overarching quality improvement policy, the sustainability of the EDC is diminished, reliant on the support of the executive sponsor at the time.

During 2002–2003, the National Institute of Clinical Studies (NICS) embarked upon a project to encourage evidence-based practice and introduce quality improvement methods to forty-seven hospital emergency departments across Australia. Known as the Emergency Department Collaborative (EDC), the project methodology was based on clinical improvement methods used by the Institute for Healthcare Improvement in the United States¹. Key objectives of the EDC were:

- ▶ To improve emergency department care through the improved application of current knowledge.
- ▶ To promote collaborative improvement methods to achieve and sustain the changes.
- ▶ To provide practical tools to help emergency department clinicians.

In December 2002, NICS commissioned a qualitative evaluation of the EDC. The purpose of the evaluation was:

‘to determine the impact of the collaborative on patient care, patient satisfaction, staff culture and readiness for change, problem solving and innovation, staff attitude to use of evidence, the sustainability of improvements and what contributed to this, spread and cost-effectiveness. In addition, we are interested in the “black box”, that is, the essential ingredients in the success or otherwise of the collaborative.’

On the basis of performance data generated by the Plan–Do–Study–Act (PDSA) process and reporting cycle (Appendix 1), some worksites achieved sustained change and improvement. Other participants were not so successful: they were unable to implement PDSA or arrive at sustained change and improvement to their clinical practice.

This variation in participant outcomes was the basis for NICS to commission a qualitative evaluation, which is the subject of this report.

1. www.ihl.org

3.1 OBJECTIVES

Specific objectives of the qualitative evaluation, as detailed in the project tender brief, were:

- ▶ To undertake a survey of key staff (clinical leaders, team members and executive sponsors) in participating emergency departments regarding their objectives in taking part in the EDC.
- ▶ To undertake a survey of key staff regarding the process and outcomes of the EDC.
- ▶ To examine what worked in terms of changing behaviour of clinicians and teams in emergency departments.
- ▶ To identify the key elements where emergency departments have been successful in bringing about change or innovation in improving care.
- ▶ To identify why some emergency departments were successful and how they differed from those that were less successful, including defining success.
- ▶ To inform the evaluation of the successful strategies for changing practice in emergency departments.
- ▶ To identify planned strategies for sustainability and generalisability.
- ▶ To identify issues of relevance to the evaluation and present these in a clear and concise way, which enables quick understanding and strategic thinking.

Explicit in this project brief was NICS' desire to formulate a practical definition of success. NICS commissioned this evaluation as an action-based research to improve their practice of designing, managing and resourcing collaborative quality improvement (QI) projects.

3.2 EVALUATION METHODOLOGY

3.2.1 CONCEPTUAL FRAMEWORK

The conceptual framework underpinning the evaluation methodology has been supported by international research, the interview process and the research team's experience and understanding of continuous improvement processes.

3.2.1.1 Learning from international research

A small number of comprehensive evaluations of Breakthrough Collaboratives have been undertaken overseas, particularly in the United Kingdom. The research of Glenn Robert, Paul Bate, Jean Hardacre and Louise Locock of the Health Services Management Centre at University of Birmingham (2002) is seminal in identifying the tangible impacts of Breakthrough Collaborative methodology. Their work identifies a useful evaluation hypothesis by which to assess the effectiveness (or otherwise) of Breakthrough Collaborative projects:

The effectiveness (E) of the Breakthrough Collaborative method is not just a function of the method/approach (M) but the way it is implemented (I) and the context (C) within which it is implemented. The underlying rationale for this hypothesis is the effectiveness of the collaborative method is inseparable both from the process of its implementation and the context within which it is to be implemented (Bate et al. 2002, p. 14).

This working hypothesis was used to guide the method and philosophy of evaluating the NICS EDC. As identified in the UK research, it is not possible to explain the variation in outcomes of EDC participants by assessing in isolation the method employed and disseminated by NICS. All EDC participants were subject to the same method. While our evaluation has revealed some areas in the method that could be adjusted or 'tweaked' (see recommendations), the

success of EDC participants appears to owe more to the variation in implementation within the participating organisations and the varying context into which the method was applied. We believe that the working hypothesis of UK researchers, emphasising the interaction between method and implementation and context, is a fruitful way to help distinguish factors that led to, or mitigated against, the effectiveness of the EDC at the level of the individual participating organisation.

In taking this approach, we were mindful of other important and related questions. For example, how do we reconcile the contextual differences arising from highly individualised situations found at each workplace, where 'we need to think about organisations as being cultures rather than having cultures', with the need to provide an objective assessment of the impact of the generic Breakthrough Collaborative methodology?

3.2.1.2 Learning through the interview process

We have been able to understand emergency department processes through interviews, particularly in areas such as team formation and dynamics, work organisation and design. By sketching the features of work and the work environment within emergency departments and describing these in real terms, we hope to come to a better understanding of the components of 'context' and, with the guidance of our interviewees, identify contextual factors that supported or mitigated against their embracing the EDC. In other words, we will be seeking to define the 'receptivity of context'. Our hypothesis that understanding the 'receptivity of context' in the organisations holds the key to explaining difference in progress across collaborative sites, thereby providing clues as to the how the potential of Collaboratives may be maximised in the future (Robert et al. 2002, p. 20)

3.2.1.3 Continuous improvement as a dynamic process

Central to our considerations of 'success' and its achievement in quality improvement terms is the notion of continuous improvement. Rather than conceiving a finishing point where, once achieved, organisations have arrived at a state of never-to-be-improved-upon 'best practice', continuous improvement is about organisations stepping onto and moving forward along a continuum of improvement.

Conceptually and in practice, continuous improvement acknowledges that people and organisations can consciously strive to improve their local work processes, systems and performance. Rather than focusing on arrival or achievement of goals and outcomes and equating these with 'success', continuous improvement emphasises the conscious decision of organisations to step onto the continuum, that is, actively embrace the notion of quality improvement and then move along the continuum through the practice and application of quality improvement tools such as the PDSA cycle and/or its derivatives such as the Breakthrough Collaborative methodology. Internally embraced goals propel organisations forward down the continuum, but over time and with the influence of an ever-changing context, the goals may be revisited, adjusted, added to or replaced with new goals. As discussed in this report, there appear to have been a range of triggers among EDC participants motivating their organisation to take the first step.

3.2.2 DESIGN

3.2.2.1 Background

It was NICS' original intention that all forty-seven EDC participants be surveyed as part of the qualitative evaluation and that five detailed case studies be developed to illustrate the survey findings. The five case study sites were to be selected on the basis of representing the geographical spread of participants (involving all states and territories), hospital settings and commitment to the EDC.

Due to financial constraints the scope of the survey was reduced from forty-seven to fifteen EDC participants and the development of the five detailed case studies dropped from the project brief. A survey of the fifteen EDC participants was to be directed at one emergency department team member per worksite: a clinical leader, team member or executive sponsor.

After consultation with the research team, and on the basis of their undertaking a limited literature review of evaluation methodologies and findings from overseas quality improvement projects in the health sector, the design of the evaluation was readjusted. Rather than limiting the survey to one emergency department team member from fifteen worksites, it was agreed that two emergency department team members be interviewed for four of the fifteen worksites. This was to ensure that the selection of the interview subjects reflected the divisions of authority and the layers of organisational structure that exist in a hospital environment. A person's experience of participating in the EDC is likely to be affected by where the person is situated in the hierarchy of a hospital structure. Interview subjects were referenced to the professional representation found within emergency department teams. So, for example, the majority of personnel within an emergency department are nursing staff, followed by medical officers, administrative staff and management. Selection of interview subjects attempted to reflect the average composition of an emergency department team (subject to availability of individuals for interview).

As part of the original project scope, the fifteen worksites were categorised according to 'commitment to the EDC project'. This was defined jointly by NICS and the researchers as worksite performance measured through the performance monitoring data submitted by each worksite as part of the collaborative undertaking. Hence, worksites were deemed as successful, mostly successful and unsuccessful. Worksites from each category were included in the qualitative survey².

3.2.2.2 Breakdown of participants in qualitative survey

Total number of survey participants	19
Total number of participating worksites:	15
Number of professional categories represented in the survey (by profession)	
Registered nurses	3
Clinical nurse educators	3
Nurse unit managers	1
Nurse practice coordinators	2
Clinical nurse consultants	2
Clinical nurse manager	1
Directors of emergency medicine	3
Assistant directors of emergency	2
Executive director, acute services and nursing	1
Executive director of med. services, med. super.	1
Participating worksites by state/territory	
NSW	4
Victoria	3
Queensland	4
South Australia	2
Western Australia	1
Northern Territory	1
Participating worksites by performance category	
'successful'	5
'mostly successful'	5
'unsuccessful'	5

² In order to facilitate analysis the researchers segmented the sites into 'successful', 'mostly successful' and 'unsuccessful' based on the performance monitoring data submitted by each worksite. While this approach is an aid to sorting out the data it does not reflect the attributes inherent in a broader and more sustainable notion of success discussed in this report.

Fifteen worksites were chosen and invited to participate in the evaluation. Of these, one worksite refused to participate on the basis of their 'non-performance' in the EDC. An alternate worksite was selected and invited to participate, and agreed to do so.

3.2.3 METHOD

3.2.3.1 Survey instrument

The instrument was backed by international research (OCM Change Manager³) and the research team's experience with organisations and discussions with NICS staff. A survey was developed comprising thirty-four questions exploring the major areas or themes of interest for the evaluation (Appendix 2). The survey involved a semi-structured interview and discussion by telephone. The survey took, on average, forty minutes per interviewee. Nineteen participants were interviewed. Participation in the survey was anonymous and voluntary. Interview subjects were encouraged to explore and share personal experiences and perspectives of the EDC as well as reflecting on their emergency department team's experience and feelings about the EDC. The researcher took written notes as well as a tape recording of each interview. These were then transcribed into a comprehensive record of each interview.

3.2.3.2 Learning history

A learning history session was organised by NICS and involved the research team, NICS staff and two participants from two emergency departments. The learning history is a tool for collective learning. It is a methodology to distil data from interviews, identify recurrent themes in the narrative, pose questions about its assumptions and implications, and raises 'undiscussable' issues that hover just below the surface of the quotations (Kleiner & Roth 1997). A facilitator assisted the group to engage with the de-identified data and identify themes. This provided an added layer of data interrogation and informed the analysis.

³ The Organisational Change Manager (OCM), developed by the Madison HealthCare Improvement Ltd, Wisconsin, and Professor David Gustafson of the University of Toronto, is a tool that assesses an organisation's readiness for change and predicts the success of change projects (Robert et al., 2002, p. 22).

In presenting the findings we demarcate the data into the sections headed method, implementation and context. We recognise, however, that there exists an overlap between these elements.

4.1 METHOD

Common to the Breakthrough Collaborative method is the development of a 'community of learning' among participating organisations (the collaborative aspect). Participants are encouraged to network, exchange ideas, experiences and practical strategies while supporting each other down the path of continuous improvement.

Participants are en-skilled with the Plan–Do–Study–Act (PDSA) quality cycle usually through joint learning exercises (learning sessions). They research or, where provided, select evidence-based goals that focus on the particular areas of clinical practice they wish to improve. Goals and their related workplace changes are usually small and designed to lay a foundation of incremental change that can, over time, build into more significant change. Data collection starts at the beginning of the cycle to establish an initial performance bench mark, improvement strategies are developed (Plan) and implemented (Do) and then progress monitored through further data collection and evaluation (Study). On the basis of the data, interventions may be made and approaches changed to progress achievement of the goals (Act).

For its EDC, NICS brought together forty-seven participating emergency departments drawn from metropolitan, regional, and rural hospitals across Australia. Public and private sector hospitals were represented.

Each participating organisation was required to formally agree to develop a project team from the organisation which included a senior representative, resource the travel and accommodation costs of attending the learning sessions, participate in evaluation of the EDC including meeting the monthly reporting requirements during the active stages of the EDC and a follow-up evaluation six months after conclusion of the EDC.

NICS provided the following:

- ▶ Overall and ongoing coordination of the EDC.
- ▶ A comprehensive hard-copy information kit to each participating organisation.
- ▶ Three two-day learning sessions held roughly three months apart (from May to October 2002). A comprehensive range of experts were assembled for the learning sessions presenting on various aspects of the PDSA cycle, quality improvements in the health sector and quality generally, evidence-based practice, and change management strategies
- ▶ A list of evidence-based topics or goals (see Appendix 3).
- ▶ Training materials.
- ▶ A patient survey tool and a cultural change survey tool.
- ▶ An NICS EDC website and web-based reporting system.
- ▶ Conference calls resourced with experts.
- ▶ Expert advice on particular areas to individual participants.
- ▶ Collation and feedback of results to participants.
- ▶ Review, evidence on specific goals and intervention strategies.
- ▶ Evaluation of the EDC.
- ▶ Dissemination of results.

4.1.1 PREPARATION

4.1.1.1 Role of EDC project administration

NICS project officers took an active and ongoing interest in the progress of participating organisations without involving themselves in the implementation at each site. This encouraged the development and maintenance of open dialogue with representatives from participating organisations. The personable approach adopted by NICS appears to have made a lasting impression on some of these organisations. It also provided a benchmark for some participants to evaluate collaborative projects they had had or would go on to have contact with:

We have coined the term that we are NICS Collaborative snobs. (EDC Project Team Member, Nursing Practice Coordinator)

Reflecting on another collaborative that we've attempted to be involved in since the NICS one... the pace was so slow we've actually withdrawn from that collaborative because it just wasn't happening fast enough for us. I suppose after NICS we felt, not that we've been swept along, but that we were actively participating in quite a rapid process with demonstrated results relatively early in the piece. A most recent exposure to another collaborative has been so slow and protracted that it just turned us off completely. (EDC Executive Sponsor, Executive Director)

It just seems to me part of the well grounded NICS approach and I think it both reflects the concept of NICS and also I must say... [the NICS project officer]... and really all of the people involved... are really quality people and I'm very pleased to have had contact with them. (EDC Project Leader, Senior Admitting Officer)

4.1.1.2 Project goals and topics

Important among the array of resources provided by NICS was the list of evidenced-based goals and targets (see Appendix 1).

Rather than being required to research their own goals, participants were asked to select from the NICS-developed list with 'time to analgesia' a mandatory topic for all participants. The list of topics and goals was mostly in keeping with the Breakthrough philosophy and practice of encouraging small, achievable changes such as reducing 'time to analgesia', thrombolytics and antibiotic administration.

Some of the goals, such as referral to a speciality unit, involved the participation of other departments such as X-ray and pathology. Some of the goals had a systems focus such as reducing time from bed request to inpatient bed.

The list sought to provide a choice for participants rather than being an imposed list of topics. They were designed to tap into areas of practical interest and concern to clinicians in an emergency department environment. The list of topics and goals were generally approved by interviewees:

It's the environment of an ED, you can't look at ideas that aren't achievable. You really have to sit down and say 'what are we doing now that we can do better? Let's not look at something that would make a perfect ED because we don't live in a perfect environment. What are we doing now that we can actually better and that's achievable? And I think in most circumstances we did that. (Project Team Member, Registered Nurse)

NICS said pick things that people are passionate about. Well, we were definitely passionate about mental health and pain relief. We picked projects that actually ended up improving workload because we did it a better way and also reduced the amount of unhappiness for patients that were waiting for a long time until their pain relief had been sorted.

So the sort of projects that we did, it wasn't harder for anyone. It wasn't more work for anyone, it actually improved the situation. So it wasn't a hard thing to sell. *(Project Team Member, Nurse Practice Coordinator)*

Presented as a mandatory topic, 'time to analgesia' (that is, reducing patient waiting time to analgesia) was warmly embraced by most interviewees. The opportunity to reduce waiting time to analgesia was widely perceived as a relief and particularly so for nursing staff on the frontline of emergency departments:

Even though the 'time to analgesia' as the national focus was a given [it was] the one that was very dear to the hearts of the staff. *(EDC Project Leader, Nursing Practice Coordinator)*

No one is now left to be in pain, the old thing of wait til the doctor sees you. NICS enabled that change to occur, because it was made the role of someone, it was put into their job description, that person, that medical officer is assigned that shift everyday. He's in charge of fast tracking so... you don't have to go up and say 'can you do me a favour and come over and see this patient'. You go over and say 'this patient is in pain, can you come and give them some analgesia'. We've formalised the process we used to be doing in an ad hoc way and it works well. *(Project Team Member, Clinical Nurse Educator)*

In addition to enabling demonstrable improvement in-patient care, where participating organisations chose to up-skill nursing staff enabling them to administer analgesia, satisfaction of nursing and medical staff further increased:

How many times have we gone off to a doctor and said 'this patient needs such and such' and we've not been able to give it? The fact that we could actually use our knowledge and experience and initiate analgesia to a patient instead of having them wait to be seen by a doctor before they could have something for it -- that's very good. We give nurse initiated oral analgesia in the waiting room and that's great, especially on a Saturday afternoon and we've got all these sporting injuries. People come in and they've just come off the field and they've not had anything and they're in pain. The patients are much better, much happier. They feel something's been done for them at least... [compared to] if they [couldn't] have anything and wait for an hour or two or more, they get very angry and upset, so patients' perceptions of a hospital drops. *(Project Team member, Acting Nurse Unit Manager)*

[On] specific projects, the 'time to analgesia' was a great success. It was good, everybody, even those who weren't directly involved in cycles and things, everybody did play some role in that and I think that everybody recognises that that was a great thing. It might be a bit much to say that everybody was proud of it but I think everybody acknowledged that it was a good thing. And I think some of us were very proud that we were able to do a very good thing for patient care. I think the other aspect too is the positive effect that it has had in the ED management and senior staff for processes of QA and QI. We now have these tools that they've taught us. Some of it's been retained and some of it's being applied and it's the ability to carry on. If NICS would have finished today there are some things that we would carry on to help us to continue to improve what we do. *(Project Team Member, ED Assistant Director)*

As illustrated by the latter quote the 'time to analgesia' topic delivered more than improved clinician and patient satisfaction. It was also the topic where participating organisations could practice and develop confidence and competence in the use of the PDSA cycle.

The approach adopted by NICS in providing an anchor topic, with wide appeal and capable of delivering tangible improvements in patient care, appears very sound. Further, where participating organisations experienced less successful outcomes with other self-chosen topics,

success with 'time to analgesia' could provide perspective on those failures and encourage the organisation to rethink its approach, develop self-knowledge about its capacity to handle change projects including their number and type at any one time, and maintain enthusiasm and commitment to use the PDSA cycle into the future.

There were, however, some specific concerns raised about application of the 'time to analgesia' goal with regard to differing state regulatory environments. Further, some interviewees thought it emphasised narcotic analgesia too heavily and this relates to some confusion around interpretation of the goal. Some worksites adhered to a strict interpretation of improving times to the administration of narcotic analgesia, while others interpreted it more widely as a starting point to reconsider their whole pain management performance.

Participants seemed initially to have chosen up to three additional topics. However, it appears that the reality of attempting to change up to four areas simultaneously proved unachievable for many participants. Consequently, some participants adjusted down the number of projects to one or possibly two topics. This was not generally perceived as a failure but rather part of the learning process. Further, a number of interviewees indicated that, rather than taking failed topics off their action list altogether, these were put onto the backburner to be attempted at another time or using a different approach.

For some, the EDC provided an opportunity to attempt resolution of major problem areas experienced in their emergency department. While they were able to apply the PDSA cycle, they could not necessarily resolve the problem although the process of trying may have confirmed that the problem was outside of their control and requiring a system-wide approach:

We discussed this early on in trying to come up with projects in the NICS collaborative. There are systems issues that are internal, so, if you like, micro systems that you can look at to improve efficiency within the emergency department. Then there are the macro systems that involve interactions with other units in the hospital or even other departments within the state. We'd already identified the fact that there were quite significant hospital wide as well as interdepartmental major systems issues. *(Assistant Director, ED)*

For some emergency departments it was important to know and prove that recognised problems were not of their making and more properly owned, and only resolvable, by a much larger organisational response.

4.1.1.3 Paper-based resources

As indicated above, NICS provided a range of paper-based resources including the comprehensive EDC project kit, patient and staff survey tools, training materials, bibliographies sourcing evidence-based research materials and some research papers. The EDC project kit is best considered as complementing the learning sessions. A number of interviewees indicated they felt overwhelmed when they received the project kit and, while they attempted to read it, did not understand its contents until they attended the learning sessions:

I was given information but I don't think I really appreciated how big the job was going to be. I thought... I don't really remember what I thought... I thought well, this could be good, I don't think I had much idea of what it was going to involve though until I went to the first learning session. So I was probably a bit ambivalent. I read the information but I think a lot of it went over my head until I got to the first learning session and it was all explained. There was a tonne of material and I did read it all but I don't think it sank in. *(Project Team Member, Registered Nurse)*

While the patient survey was generally well regarded the staff surveys received a mixed response with some interviewees indicating they felt their content too dense:

Unfortunately, particularly the first one and the second were not very clear. Some of the doctors found it difficult to understand let alone the nurses. And I'm afraid that I found they were filling it in but they didn't have a clue what they were filling it in for. *(Project Team Member, Clinical Nurse Educator)*

Training materials were well received:

[NICS] sent me an education package on nurse initiated X-ray. Now I have distributed that widely and freely. I mean, half the hospitals in [this region] have got that now. Because it was great, it was all done, it was done for nurses, it was all packaged up and referenced, and it was a really good piece of information. As soon as I got that off I printed about 20 copies and gave them to my staff and they did them and handed them back. Then I've handed them around to all our district hospitals who, I must admit I changed it, I think it started off with another hospital's name on the front, then it went to somewhere else, and then it ended up with our name on the front. Lucky it's referenced. Everybody owns it... although it belonged to NICS in the beginning. The other hospitals that I passed it to, they think it's great... we had one of our district hospitals, just down the road here, they don't have any resources whatsoever or any staff to do anything for them basically. I got an email from one of the girls down there a while ago saying 'we want to initiate this nurse initiated X-rays but have you got any info?' so I just sent them everything we had. She's just sent me back this email saying 'Thank you, you've saved me six months work'. *(Project Team Member, Clinical Nurse Educator and CN specialist)*

As evidenced by this comment, it appears very difficult for many clinicians to develop training materials due to lack of time and resources. This can, in turn, limit the ability of hospital departments to up-skill their staff. While it may not have been NICS' intention, the education package on nurse-initiated X-ray catalysed an unforeseen and additional community of learning extending far beyond the EDC.

Training staff represents an important structural adjustment in the work environment and should be considered an enduring aspect of the EDC that supports the sustainability of quality improvement, and enhanced patient care. It was particularly important in the extension of the clinical practice of nurses. This is evidenced by the nurse initiated X-ray example above but applies equally to intravenous analgesia application:

In terms of 'time to analgesia', our problem was that we needed to have all our nursing staff cannulating and we only had a couple who could cannulate so we had to gear up all the RNs in cannulation and that took time. I managed to do most of them but I haven't been on the floor for the last four months to follow that up. I was there to educate the staff and assess them for the cannulation, give them the in-service and encourage and remind them about the 'time to analgesia'. They needed training really, getting nurses to think there's a patient in pain, of changing and doing a set of obs' and giving them some analgesia now instead of waiting for a doctor to come and see them. *(EDC Project Team Member and Clinical Nurse Educator)*

Bibliographies and research papers made available by NICS were well received saving clinicians time and providing further evidence to underpin and support their improvement strategies.

4.1.1.4 Period prior to the first learning session

This stage was particularly important. During this time, NICS approached and recruited participating hospitals and their emergency departments to the EDC. Organisational project teams were developed and representatives selected for the first learning session. Project goals were selected from the NICS list in line with organisational and departmental objectives and

data collected around project goals to establish a performance base line. NICS required the participation of an 'executive sponsor' in the project team and advised on key areas such as the selection of representatives on the project team, and the numbers of people to be sent to the learning sessions.

Decisions taken at this time by participating organisations are likely to be critical in determining the stability, success and spread of the EDC projects undertaken at a site level. There also appears to be a strong correlation between the nature of the hospital's initial interest and commitment to participate in the EDC and determination of their project team's composition. In order for hospitals to select an effective project team, the original decision to commit to participating in the EDC had to be informed with adequate knowledge about the nature of the EDC and the significant changes it would bring:

At the time that the notice went around inviting us to participate we had a very upwardly pro-positive CEO as well as having a very astute, albeit, part-time stand-in for an ED director who's actually one of the clinical directors at the emergency department elsewhere. Together with those two plus myself, we all knew that there was going to be some huge benefits out of it in the way that we provided patient care. The staff even recognised it so we had a team onboard that we knew we felt was going to be able to achieve the aims. *(Project Team Member, Clinical Nurse Manager)*

Where such knowledge was lacking, even when the person(s) responsible for signing on their hospital and its emergency department to the Collaborative were committed and interested, inappropriate selection of the project team was more likely to occur.

Interviewees identified a successful project team as having an executive sponsor, emergency department staff management representatives (director/deputy director of medicine, nurse unit manager or equivalent), a formal or informal project officer (such as a nurse educator), ward staff and particularly nursing staff who were good communicators and respected among their peers. This is in line with the 'model' project team identified in the earlier section. An 'enabled' project team had people who could authorise the change processes (senior and emergency department management) and 'doers', people from the ward floor responsible for hands-on implementation:

You've really got to pick people from within your department. You've got to get the right people on board to start with and you've got to think very carefully who they might be. They've got to be good communicators themselves and they've got to be interested in doing new things. They're the people you've got to engage and then you've got to use them as your conduit to different groups of staff in the department or organisation. For the nurse unit manager and me to stand up and say 'well, we're going to do this and we want you all to hear about it' is just not going to work... you've really got to get champions on side, provide them with the time, the resources and sometimes the skills with respect to whether it be IT or change management or data management, or whatever it might be, to be able to communicate out to others. *(Project Team Member, Director of ED)*

Interviewees from sites lacking a representative and enabled project team were clear about this contributing to their failure in the EDC:

I think particularly for the department here, for it to work you definitely need a nursing staff member within the department who actually takes it on and owns it and is therefore able to sell it to the rest of the staff within the department. That's a person who is actually permanently in a role within your department because part of the problem that happened was that we changed directors. When the director left there was nobody who had the full training up or any knowledge

from all these meetings and things... you need a core group, with a leader in it, but everybody within that group should have a very sound knowledge of how the system works so that if somebody does leave you don't have the collapse. The director had the knowledge of how the system operated and so, when he left, there was no way you could continue on the program because you didn't have (1) the resources or (2) the knowledge there of what was going on. *(Clinical Nurse Consultant)*

We didn't necessarily choose the right people in some respects. We probably could have gained more out of the process... there's the person who gets on and does most of the work with it and there's the clinical leader who's a sponsor. I think you can accommodate a less engaged sponsor if you've got a dynamic clinical leader who's committed to the process and a good doer. All we had was a good doer, an interested but over committed sponsor and a clinical director who probably didn't really get it. That was a frustration for me so if you're asking did we pull out any beaut ones I'd have to say, probably not so much. *(Project Team Member, Senior Manager)*

Selecting too narrowly and too few people for the project team, with the first quote above as an extreme example, can and did prove an insurmountable hurdle for some participating organisations. However, if the organisation was able to recognise the problem and make a strategic intervention to adjust the project team, the situation could be saved. Such intervention appears most properly the responsibility of the senior manager/executive sponsor although, as evidenced by the latter quote, not all executive sponsors acted accordingly.

Interestingly, at the other end of the spectrum, one worksite reported that they selected their project team too broadly:

We tried to engage GP practices in the steering committee and we did engage consumer representation but I don't think we were mature enough organisationally to really reap the benefits from their involvement. I think our day to day manager has managed to overcome it... by establishing subgroups with the doing people and for the most part the steering committee, we still maintained the steering committee but it became almost redundant. It became a figure-head rather than a real influence. *(Project Team Member, Senior Manager)*

The day-to-day project manager was well supported by the senior manager at this site, the problem was identified and an alternate strategy brought into play. The role of the executive sponsors in committing their organisation to the EDC, participating and often initiating selection of the project team, and adjusting its composition if problems emerge appears as key determinants affecting the overall success of their site's participation in the EDC.

In order to help overcome problems created, in the first instance, by inadequate knowledge on the part of the person(s) committing their hospital to the EDC, we recommend that Collaborative project proponents adjust the method by 'unpacking' the front end of the project methodology in the stage leading up to the first learning session. Upon making initial contact with hospitals, introducing them to the project and inviting their participation, NICS should conduct an introductory workshop for the initial contact person(s) or those responsible for committing their hospital to the project. They should be briefed about the nature, methodology and scope of the Collaborative, the expectations and needs created by the change projects (such as dedicated internal resources) and how to optimise the successful participation of their organisation, including composition of an effective project team and its management. Participants in the initial briefing should be given enough time to communicate with their associates at the worksite and then invited to commit formally to participate in the Collaborative.

4.2 IMPLEMENTATION

4.2.1 ROLE OF PROJECT TEAM DURING IMPLEMENTATION

The project team was the engine room of the EDC at each participating site. Their work included communication, advocacy, negotiation, education, work process analysis and protocol review and development, data collection and analysis, and collaboration with other worksites.

Communication aspects, and particularly building dialogue with the wider emergency department team, saw a range of initiatives. NICS encouraged the development and display of an EDC poster by each site and the establishment of an EDC noticeboard in order to give a distinct presence to the project amid the busy communication context typical of emergency departments. Some worksites took visual communication a step further, tagging patients for analgesia further reinforcing the new work process:

It's quite a constant thing, because we did a lot of posters around the department and they were bright orange... one of the ones I got from another ED department [was] where they would tag patients at the front and it would just alert nursing staff to say, okay, I couldn't give this patient analgesia outside but this is your first priority. After you do a first set of obs. get this patient in and you know you need to get analgesia to them. So just by putting out all these signs alerting nursing staff to say this patient needs analgesia, get them in, get the analgesia to them, it's been quite a good implementation at the department. *(EDC Project Team Member, Registered Nurse)*

If nurses have the ability to give [pain relief] to fast track from analgesia, all of a sudden they're going to look at that person's pain in a different manner. They're not going to look at in the manner of 'I can't do anything about it so it's no use assessing it'. They're going to look at it I need to go and tell someone about this and I need to go and get something done about it so I need to have a good look at what I've actually got. And that's where our one to ten scales came in. I got them made up visually, our visual analogue with kids on one side and adults on the other and I put these around for people to start using. We just gave them a few little tools to help them along and to jog their memory to actually assess their pain. It's changed the culture. *(EDC Project Team, Clinical Nurse Educator)*

Face-to-face communication was the most immediate and effective way of alerting emergency department staff to the project and involving the wide emergency in changes to work processes. Some worksites organised a project specific seminar to brief associates about the EDC and establish their buy in:

We came back from the first NICS learning session and within two weeks had organised our own strategic planning day to have the senior doctors and nurses at. They'd never attended anything like that before. So, that was quite interesting because XX and I had both been in similar circumstances at other workplaces. For us it wasn't foreign but it was interesting that not one of our other senior staff had ever attended a strategic planning day. So that, in itself, they all totally enjoyed it and participated but I noticed they went into the day not knowing what to expect. So when you had to put in that much effort to get to the staff at least at that level to understand the roll out, to the rest of the workers in the department you knew that you had to put in a fair bit of effort. *(EDC Project Team Member, Nurse Unit Manager)*

People really had to be informed and until they were clear about what was going on in the department, there were pitfalls so we countered that with in-services. The in-service was for absolutely everybody, nearly every single doctor in the department and

nurse and receptionist and patient care attendant/orderly. They were all well briefed and if they couldn't attend those sessions... for the people we missed which were the night duty people, we sent them an individual memo each so everybody across the board was covered. *(EDC Project Team Member, Clinical Nurse Educator)*

Organising project-specific events for emergency department staff helped clear some space in the busy communication context of the worksite, signalling the start of the project and inviting the participation of the wider emergency department team.

An important part of embedding the EDC was formalising updates and dialogue among emergency department staff by including the project in the regular meetings, seminars and other activities of the department:

I tried to have staff meetings at least fortnightly and it's always on the agenda, those activities. *(EDC Project Team Member, Nurse Unit Manager)*

There's the four consultants certainly keep it fairly active in their teaching program. They have a teaching program on Thursday, its protected teaching time across the board for the medical staff. So the RMOs having teaching in the morning, the registrars go in the afternoon and both sets of medical staff are given current information... the clinical nurse specialists, or level 2s, are more of our permanent staff and they really run with that project as well and they have teams. Each clinical nurse specialist has a team under them and they're the mentor for that team so they're responsible for signing off work books for the team and they will remind their team how things are going. *(EDC Project Team Member, Clinical Nurse Educator)*

Maintaining regular and ongoing communication with the emergency department staff was perceived as critical in providing an anchor for the project. In addition to formal communication methods, informal communication and problem solving on the ward floor was also part and parcel of the change process:

There was a lot of the discussions took place even on the floor. A lot of our 'time to analgesia' stuff centred around actually the cupboard where the morphine is kept and there's a book there where the times and the names are written down and there's a computer nearby there where we could look at the various other times that we stored about when the patient's arrived and so on, and there were a number of little meetings that took place in that little alcove that is actually in full view of the patient area of the department. I guess that's the other thing about emergency departments we're used to solving problems on the run and in the middle of a few other things going on... someone would put up something about... and someone else would say 'but what about this and this and this' and yeah, we worked through it in that way. And so a lot of it happened outside of formal meetings. *(EDC Project Team Member, Director of ED)*

This quote is a very clear example of the type of intense engagement that many of our research group experienced during the EDC. Developing a critical mass of staff who cared about the project and its outcomes was a significant motivator for staff members who may have been feeling more hesitant. We did not find any major problems with ward floor staff blocking or being aggressively resistant to the project. Project teams showed mature negotiation skills in dealing with potential blockers, such as staff in other departments worried about their professional status being undermined, or staff in the emergency department concerned about their roles being changed. They invited their participation, or where they could, simply worked around them.

4.2.2 DATA COLLECTION

The initial collection of base line data appears to have acted as an important ‘buy-in’ for many emergency departments. While collection of patient data is a triage requirement of all emergency departments it appears that, prior to the EDC, few if any emergency departments collated and evaluated the data to assess their performance against critical performance indicators such as ‘time to analgesia’. Undertaking this process and the revealing of actual, as opposed to perceived performance, proved quite a shock for many:

I was talking yesterday to one of the girls who was involved in it and she said that, particularly with the ‘time to analgesia’, she thought that people may have been getting [pain relief]... cause they measure the time to morphine... and she went in thinking that we handle analgesia for people with pain quite well because that was just her gut feeling. But when it was actually investigated she thought, because it seemed to be quite long ‘til people got some analgesia, her opinion was that they must be having other things first that aren’t working. But when the chart audit was done, it turned out they weren’t having anything and people were waiting a long time for pain relief. *(Nurse Practice Coordinator)*

I was shocked from the first research that I read about how long it was actually taking us to get analgesia on board... it was not just us, it was country wide. We were actually not as bad, I think the average was 72 minutes and ours was 69, so it was just under. That shocked me from the start because it always feels like, you know that there’s always hold-ups getting the drugs, many hold-ups, but I didn’t ever think that it was that long. So I guess it surprised me. *(Project Team Member, Clinical Nurse Educator)*

Objective measurement of emergency department performance proved a strong professional and emotional trigger for the majority of participants to commit further to the EDC and use of the PDSA methodology. Yet, interestingly, there was little consciousness among interviewees, or indeed the NICS EDC project officers, that the measurement and assessment of work processes and organisational systems is a valid and important part of the pantheon of ‘evidence-based practice’. The cultural norms of Western medicine would appear to confine and define ‘evidence’ as the output of medical scientific and epidemiological research. As one insightful interviewee grappling with bed access issues observed:

It might sound incredible to someone coming from a manufacturing background but there’s just very little data about that side of the process at all. If you think in process terms, the main thing hospitals do is take people in through the doors and pop them out the other end and how quickly you do that is a measure of your efficiency... the in-patient processes haven’t changed since the 1970s when I was a medical student and they probably haven’t since the 1950s all that much, in terms of process. What happens in an in-patient bed isn’t any more complex or difficult to record than what we do and it happens in general in a much calmer and more structured environment. But the issues, the processes surrounding getting a patient beyond the emergency department, getting them into a bed, through their admission and out of it, they’re undoubtedly complex but I don’t think anyone is really studying it in a comprehensive way. If General Motors was still building cars in the way they did in the 70s they’d be out of business but hospitals are different. They’re special. *(Project Team Member, ED Director)*

In their evaluation of Breakthrough Collaboratives, UK researchers noted that ‘the rapid spread of Collaboratives in the UK is evidenced by the fact that, where there were none in the UK two years ago, numerous national or multi-regional Collaboratives are now to be found operating within the NHS, involving thousands of improvement teams and hundreds of Trusts, and said to be affecting millions of patients’ (Robert et al. 2002, p. 13). This is also true of the US and

becoming the case in Australia. Along with the UK researchers, we believe it is important to ground the methodology and its evaluation in an understanding and knowledge of the social systems of work.

The PDSA cycle is a deceptively simple but incredibly powerful tool for making tangible and expressing simply the extraordinarily complex interactions and structures of work processes and systems. While this is well known by organisational theorists and continuous improvement practitioners in others industries, the understanding appears to be in its infancy among health system administrators. As with many of the EDC participants, proponents of Breakthrough Collaborative methodology appear to sign up largely on the basis of trust. The first step in data collection, recording and assessment can act as a potent verification of that trust propelling participants into the next steps of the cycle. There they are required to reach into, describe and change their work processes or, as one interviewee put it, 'get your hands right in there'. There was strong evidence among many of our interviewees that their worksites will continue to collect and analyse performance data.

From the IT aspect of the EDC it became apparent at some worksites that their information technology was inadequate:

We're gathering data but we are less than... we're not utilising the cycle enough. We don't have an IT system capable of gathering the data electronically. We don't have Edis, we don't have any system so our data is dependent solely of manual data collection. That doesn't work. It's not efficient. We've done the best, we've paid for a ward clerk to collect the data each week but it's not efficient. It's one of our big bugbears, anything we're doing in the department we're really slowing down, it's definitely not cost-effective. (EDC Project Team Member, Clinical Nurse Educator)

Poor IT systems did not prove an insurmountable hurdle but, as illustrated in the quote above, were inefficient and very time consuming. In some worksites, the EDC provided the momentum to sort out IT problems, skill staff in the use of IT systems and to educate hospital IT departments about demands coming onto the systems from quality improvement requirements:

Our current computer system is very difficult for us just as a normal user to be able to go in and pull things out ourselves. It's not set up in a way that you can do that easily. So we were very reliant on help from information services to manufacture a report for us. In the early days of the collaborative... getting these reports could actually take a long, long time for them to get their heads around. Once they'd really worked out what we were wanting and then created the program so that it was easy for them to get the information it meant, subsequently, reports were easy to get. (EDC Project Team Member, Nurse Unit Manager)

4.2.3 PLAN-DO-STUDY-ACT (PDSA) METHOD

While the UK researchers identified some quite strongly adverse reactions to the PDSA cycles, this was not the case among our (limited) research group. About one-third of interviewees had heard of and used PDSA prior to the EDC. Among these and interviewees who had neither heard of or used PDSA previously, it was well regarded as a tool grounded in common sense and readily comprehensible with the support of the learning sessions:

I'd never heard of it before. It's a commonsense cycle, you look at something and you say this what we want to have a look at, lets try and do it, go back and look how we did it, and do we implement it? or do we change it and see how we go? its quite commonsense. It gets your hands right in there as well and its not just certain staff, you can bring it to the whole ward staff, its not just your senior nurses or you can make it as a big team effort.

4.2.4 ROLE OF LEARNING SESSIONS IN ASSISTING IMPLEMENTATION

As indicated earlier, the EDC included three two-day learning sessions. Resourced with a range of expert presenters at the plenaries, attendees also participated in workshops and were actively encouraged to network, develop relationships and share experiences and practical ideas. Almost all interviewees found the learning sessions very positive and particularly in relation to the tangible opportunities they provided to develop a 'community of learning':

Something that came up a lot at the learning sessions, the emergency nurses go to their own conferences, the emergency physicians go to their own conferences, we rarely get to participate in a conference type situation together and unlike many of our other... like ICU, they have very much a team approach to these conferences that they have around the country, and I found it so valuable to network with other physicians as well and that came up a lot. I don't know whether the doctors found it as beneficial networking with us, but... certainly... nurses, around the place tended to enjoy just having a whole team thing happening. *(Project Team Member, Clinical Nurse Educator)*

[As a result of the EDC] the communication between emergency department managers and directors and QI people across Australia is now drastically better. There were forums previously for consultants in emergency medicine with their conferences, but there had never been a forum where you got nurses, administrators, executives, consultants, together to discuss and think about day to day issues. That was a very big thing and a big cultural thing. *(Project Team Member, Assistant ED Director)*

By bringing together a representative cross-section of people working in emergency departments nationwide, the learning sessions provided a space away from traditional professional demarcations or institutional competitiveness allowing productive interaction between people that ordinarily wouldn't occur or necessarily be encouraged:

We were able to bounce ideas off each other, and I came back to our emergency department and said 'look, I've had this idea from another emergency department, lets see if we can give it a trial' and to this day that is the method in our department. *(Project Team Member, Registered Nurse)*

As with the development of initial baseline data, the representational nature of the audience also supported participants to develop and practice speaking the language of the work systems they inhabit. Put another way, rather than being controlled by the systems of their workplace, at the learning sessions people were being encouraged to recognise the commonality of their work systems as social and technical constructs that can be changed. For some, the very act of being invited to attend the learning sessions repositioned them relative to the traditional hierarchy of control that would normally place them somewhere near the bottom of heap:

I looked at the project teams when we got there on the first day and it was like, oh my god, there were directors of nursing and CNMs and medical directors and this and that and here I am, a level one registered nurse. I think with the staff, I've been in the department for a while and they all know me. I must have some sort of vague respect in their somewhere so I think they took it quite well making me the change agent. *(Project Team Member, Registered Nurse)*

Of the three learning sessions, interviewees identified the first session as the most important. For most, the first learning session was the first opportunity to understand the nature and methodology of the EDC project and what was being asked of them. Attendees could then report back at their worksite, translating the EDC project intention into practical terms laying out the implementation steps for their colleagues. Worksites that sent too few people, or an inappropriate mix, were in catch-up mode relative to other worksites who had selected more wisely.

I think the hospital needed to assess 'we need so many doctors, so many nurses represented for this collaborative' whereas I don't think that was sorted out here. Our coordinator only sent one staff specialist whereas I think at least two doctors and a couple of nurses to start with would have been good... we only had one person there... who has now since left... and now I've realised we should have had more. It wasn't until after he returned that we realised how big it was and that's when our director appointed other people to represent the team. *(Project Team Leader, Clinical Nurse Educator)*

As with the selection of the project management team, ensuring the right people were participating in the first learning session, and being skilled up accordingly, was an important although not quite so critical factor in establishing and maintaining the EDC at their worksite. We believe the same lack of understanding that characterised inappropriate selection of a project management team also produced under-representation or inappropriate representation at the first learning session. Hospitals that treated the first session as a preliminary briefing and project familiarisation exercise, with feedback determining their worksite's commitment to the project, disadvantaged themselves.

Implementing the recommendation to unpack the front end of the Collaborative methodology and provide a formal briefing session for decision-makers would help clear away misconceptions about the function of the first learning session. Further, we recommend that for any future Collaboratives, NICS should introduce a policy specifying the number of people and the mix a participating worksite should send to the first learning session in order for their registration to be accepted. It is not unreasonable or unrealistic to ask worksites to send a representative project team of not less than four people.

The second and third learning sessions provided further important opportunities for worksites to consolidate their knowledge of the methodology, continue actively collaborating and sharing ideas, and collectively solve problems. It also enabled them to check their progress relative to each other and maintain a realistic perspective on their achievements, or lack of, without losing faith in the process:

You can show each other where you were going wrong and where you were actually doing a lot better than what you thought you could do. I guess just being able to see that, okay, sometimes you weren't achieving your goals but nor were other emergency departments. So it wasn't a big setback and you could see how other emergency departments were changing their ways to get their results. *(Project Team Member, Registered Nurse)*

While interviewees commented enthusiastically about the supportive environment of the learning sessions, there was also some questioning of unrealistic goals and measures of success:

I suppose the one thing that we found in our group that probably needs to be acknowledged more in the learning sessions was [having] realistic timeframes and understanding the peculiarities of each different place. Whilst we were very, very clear and strong in our convictions, so we didn't feel guilty when we went to learning sessions that we weren't as far advanced as everywhere else, I think that there were other hospitals who struggled with that and felt 'oh, gee, look what they've done. We're no-where near that'. And I think they needed to reinforce that a bit more, that [it] was okay, because it would be too easy to feel dejected and take steps backwards rather than forwards. The length of the Collaborative, with the expectations of what they would have liked to have seen in presentations at learning session three, were unrealistic considering what else was going on in the world. You can have your ideals of where you want to be but the reality is that it might take you twelve months or more to get there. But there was the overwhelming impression that by learning session three that's where you had to be. *(EDC Project Team Member, Nurse Unit Manager)*

This comment appears particularly insightful relative to the complexity of arriving at and sustaining meaningful workplace change and all that that entails. It also speaks to the concept and practice of continuous improvement. It also appears highly pertinent to the key research questions that led to the commissioning of this report and its underpinning research: what is success? when is it achieved? and in answering those the additional and critical question: what is the role played by 'the peculiarities of each different place... and everything else that's going on in the world'?

4.2.5 INTERNET AND CONFERENCE CALLS

An important tool in the ongoing collaboration between EDC workplaces was the use of internet and email. Data was fed into the EDC website for dissemination among participants and email was used between participants. In general, these worked well with a few important exceptions. Some interviewees noted that they could not access the EDC website nor use it to convey their data to NICS due to IT security restrictions at their worksite. Further, while email is being used at more and more workplaces, few EDC worksites representative in our research group have made email accessible to all clinicians. As a consequence, and in keeping with all workplaces where this is the case, email use has not become part of the work system and culture and is an unreliable communication means. We are unsure of alternate arrangements for worksites that could not access and interact with the EDC website nor was there opportunity to explore, in any detail or depth, the impact of technology and its limitations on the overall success of the EDC. While we recognise that NICS preferred to use online communication for both reporting and dissemination of results, we would recommend that, for any future Collaboratives, this be supplemented by regular hard copy information bulletins mailed to worksites.

Conference calls were generally well received and seen as useful but not necessarily essential to the operation of the Collaborative. Some interviewees commented on the limitations of the technology, its anonymity and the disjointed flow of conversation between participants. Others were more positive and interestingly senior managers seemed to find them of particular use. Given the constraints on their time and their relative organisational (and/or spatial) isolation away from the day-to-day of the emergency department, conference calls were identified as a useful and efficient way of keeping in touch with the Collaborative.

4.3 CONTEXT

4.3.1 ENVIRONMENT OF AN EMERGENCY DEPARTMENT

We turn now to describing the environment of emergency departments including devoting some attention to their organisational design and work processes.

Many Australians have had some occasion to visit or attend an emergency department and, if they present during a peak period, may find themselves in an intensely busy and emotionally charged environment. Patient presentations are diverse and clinicians, and the systems they work in, must be capable of meeting an extraordinary range of challenges promptly and with due respect for ethical and patient safety considerations and requirements. Emergency departments represented in our interview group were dealing with about 18,000 to 20,000 presentations per year with the majority, on average, dealing with 30,000 to 50,000 presentations per year. Many interviewees noted their departments were dealing with increasing numbers of patients, often within the context of budget and resource constraints.

4.3.2 EMERGENCY DEPARTMENTS: CORE WORK FUNCTIONS

The core work functions of all emergency departments fall into two distinct areas. First, direct service delivery of multidisciplinary clinical care (diagnose, respond, care, refer) to in-patients presenting on a 24-hour basis. Second, the maintenance and review of clinical standards of care, practices and procedures in response to public health issues, and in line with regulatory, professional, and organisational requirements.

4.3.3 EMERGENCY DEPARTMENTS: WORK ORGANISATION

Employees are, first, grouped into their respective professional specialisations: nurses, consultants and doctors, administrative and clerical. Each professional grouping then allocates staffing resources to multidisciplinary clinical-care teams and multidisciplinary non-clinical support teams. The professional mix is determined by the skill requirements of the clinical and non-clinical teams. Raw numbers on the clinical teams are formulated with regard to variations in patient flow through the emergency department. On average patient flow is light during the night and early morning, growing steadily during the day and peaking through the mid-late afternoon and early evening. Consequently, the number of total staff starting on the morning shift is larger than the night shift (core numbers), then supplemented during the day building to peak staff numbers during the afternoon and early evening:

I've got about seventy staff on my roster... we start with about eleven staff in the morning, twelve staff on the late and then about eight staff on the night shift. We boost up a little bit on the weekends. (EDC Project Team Member, Clinical Nurse Consultant)

There's about fifty, fifty-two nurses, not all full time. There are now, I think, ten consultants, again not all full time. There are thirteen doctors on our registrar roster. Half are full-time and probably half are in the emergency registrars training program. Then we have a list of about twelve residents who a half are, again, part time. Four interns on a monthly rotation, one communications clerk and a clerical officer. Four, five other clerical staff who don't belong to the ED but work in the ED. Couple of cleaners, volunteers, we have a body of about six volunteers, and security who are hospital wide but rotate through. We have one dedicated ED security guard, twenty-four hours and we draw on others as we require them. Similarly we have a dedicated ED orderly and draw on others as we need them. Secretarial staff, one.

[The number of staff on shift] varies enormously depending on the time of the day. We deliberately adjust our rosters to projected differences in workload. Peak activity is generally between 2 pm and 8–10 pm. Our quietest period is in the very early hours probably between 3am and 6am. [For] peak activity levels, in the afternoon, we have medical staff... non-clinical [duties]... all bar one or two of our consultants. Two would be [on] clinical [duties]. We would have eight mid-level medical officers, so registrars, residents and interns and, I think, there's thirteen nurses on a shift. [A] communications clerk, three clerical officers, the security guard, two cleaners, secretary and an orderly. [The] minimum staffing level, say 4am, one registrar, two residents and interns, eleven nurses, security guard, no dedicated orderly, no secretarial or communications clerk, two clerical officers, I think. That's it. (EDC Project Team Member, ED Assistant Director)

These two accounts describe the kind of professional mix and patient-responsive staffing arrangements common to emergency departments represented in our research group, with nursing always predominating in the raw numbers. The accounts reveal the pre-eminence of professional categorisation in fixing the identity of employees participating in multidisciplinary clinical and non-clinical teams. That is, clinicians are first and foremost members of their

professional grouping where their participation and practices in a multidisciplinary team setting are prescribed and described by the protocols and practices of their particular professional group.

During our interviews we asked people to describe their 'emergency department team'. Most interviewees immediately interpreted this to mean the numbers in and ranks of their particular professional group. The first quote (pg. 25) is an example of this. The latter quote is indicative of the kind of description we received when we asked interviewees to move outside of their professional group to nominate the composition of the wider emergency department team. These two interviewees work together and are describing the same emergency department.

Of further interest is the difference in the nurse numbers indicated in the two accounts. We are assuming that the assessment of the clinical nurse consultant is the more accurate on the basis that interviewees were most familiar with the territory of their own professional group. Unless they were answering on the basis of documented numbers, and some did refer to personnel files during the discussion, interviewees had to work quite hard to summon up the composition of the larger emergency department team. For some emergency departments, this was understandable given the sometimes large numbers of people involved, anywhere between 100 to 200 employees. An additional level of complexity is added by the use of full-time equivalent (FTE) numbers that may, in fact, be filled using significant numbers of part-time and casual staff. Hence the '50–52 nursing staff' nominated by the second interviewee quoted (pg. 25) may, in fact, be true but with the rider that he is describing FTE numbers which, may in reality, convert to the seventy staff, including part-time and casuals, appearing on the clinical nurse consultant's roster.

In organisational terms, the staffing arrangements in emergency departments, particularly larger emergency departments, are complex where even tracking down the actual numbers of people involved can be difficult. High staff turnover was reported from a number of sites, adding to the difficulty. Understandably, maintaining cohesion among the wider emergency department team is an ongoing challenge:

The whole emergency department is a team but because that's a large number of people it's difficult to operationalise that and the key, of course, is to make sure in your non-clinical team that you've got the right representation from your clinical players and then you've also got the ability and the methods of disseminating both the decisions arrived at to other staff members and at the same time facilitating two-way communication so that team member number 199 feels part of the team.
(EDC Project Team Member, Director of Emergency Medicine)

Amid resource difficulties and public scrutiny, dealing with the diversity of emergency department personnel, a shifting workforce, rotating rosters and patient admissions that ebb and flow are some of the components of an emergency department. Trying to introduce a quality improvement process that makes real and lasting changes is not a separate challenge or overlay. Making improvements means knowing and engaging with your context, looking for opportunities to change things, and finding ways to make them stick.

4.3.4 COMMUNICATION IN THE EMERGENCY DEPARTMENT

Communication is critical for wider team cohesion. Yet, information flow is anchored within the separate professional groupings that work in the emergency department. The nursing group tends toward regimented communication mechanisms with structured 'hand-overs' between shifts, and a communication book, backed in with active discussion between nurses on the ward floor. The doctors tend to communicate in a less formal fashion in their handovers and were described to us as 'more independent', connected to but sitting outside of the prevailing communication culture dominated by the nursing staff.

Because communication flows are shaped and housed within these professional subgroups, the communication environment in the wider emergency department is one of multiple communication streams that converge and are integrated in those spaces shared by the professional groups: on notice-boards, in general memos, in emergency department management meetings, in non-clinical working groups, on the ward floor, and informally, in the canteen and other social places.

[Communication]... is one of the core issues of a major, busy, twenty-four hour emergency department. Compared to every other industry I think we do extremely poorly. Lines of communication are inadequate. Lines of communication are often informal, ad hoc, and not in any real way systematised. And there's communication in lots of different areas. So, for example, there is the communication of education, there's the communication of day-to-day administration. So you can look at the topic of communication from lots and lots of different aspects. Globally, it's inadequate, it's very, very difficult, it's made difficult by the very large numbers of people, the different disciplines and, as you say, different time slots. *(Assistant Director, Emergency Department)*

The communication environment of the emergency department is one of events, issues and information coming in from the respective professional groups and their shifts that make up the wider emergency department team, as well as emergency department clinical managers and non-clinical team representatives, individuals, other departments, and hospital management. Communication items bustle up against each other demanding the attention of the emergency department staff:

It gets so crowded in [the staff base] with every different person wanting to put up their own protocol. There's a mushrooming of coloured A4 sheets of paper all within the glass walled staff base and you know, at the end, there's just a whole lot of them in there so there's no particular priority of importance or anything... they tend to just be another mass of information that people take or leave. I'm not saying anything new here. There are difficulties with communication everywhere across organisations and with the shift staff as well. The 24 hours business of, God, how do we communicate that to our night staff who we mightn't see for weeks? *(Director, Emergency Department)*

The busy-ness of the emergency department environment, and the overlay of complexity stemming from shift changes, staff turnover, and professional demarcations, together with a large volume of information flowing from a variety of sources, makes for a difficult communication context. Large staff numbers must be kept in the communication loop but, even in smaller emergency departments, dealing with large volumes of information is an ongoing challenge.

This communication context poses some obvious questions around the introduction of a quality improvement project. How does an emergency department team find some clear space to consider quality improvement issues? How does it prioritise that project ahead of other demands coming in from every direction? Where the quality improvement project requires the involvement of the wider emergency department team, how is the project communicated to everyone in a way that commands their attention and participation? How are responses and feedback from the ward floor communicated to the project management team? And are the relatively ad hoc communication arrangements operating in wider emergency department teams clear and robust enough to carry a work change process?

Picking up from an earlier quote from one of our interviewees, operationalising change is really a subset of operationalising the whole team. While pulling the wider emergency department team into a cohesive whole isn't easy, the challenge is to develop and institute management and communication anchors that can deliver two-way communication flow to staff, and provide them with accurate, relevant and timely information. Working in close collaboration

with emergency department management, non-clinical teams attempt to do this. However, as reflected upon earlier, you've got to get the right representation from your groups of clinical players and they have to have the ability, skills and time to disseminate decisions in a two-way discussion with every member of the emergency department team.

The EDC project team was a non-clinical team established to drive the Collaborative at each worksite. For effective operation it, too, had to traverse the difficult organisation and communication context of the emergency department meeting the prerequisites of being representative, inclusive and a good communicator.

Given the work task and the difficult communication and organisational environment, a model non-clinical team capable of driving a quality improvement project, such as the EDC, would have:

- ▶ The capability and resources to involve all emergency department employees. It would have enough members with enough skills to act as conduits to their respective professional groups, engaging in discussion with them and passing back responses to the project team.
- ▶ Membership that reflects and represents the composition of the wider emergency department team, including the shift work divisions. More nurses than doctors, and line managers from each group, other ED staff with direct involvement such as administrative and clerical staff, and other hospital personnel representing departments with a direct interest.
- ▶ A tool kit containing a variety of communication mechanisms. While face-to-face communication was widely regarded by our interviewees as the most effective communication vehicle, other forms of communication are also important. 'Reinforcing the message' is the key given the crowded communication context and the busyness of the work environment. It's important to assess what's already in use and of that, what can be brought into the service of the Collaborative. It's important also to identify new communication initiatives that will lift the profile of the project in the worksite attracting the interest and initial buy in of staff. Further, it's important to sort out how often to communicate and to select information that's relevant and keeps the interest of staff.
- ▶ Non-clinical time for project team members to carry out their tasks.

Few of the EDC teams were able to achieve all of these requirements.

4.3.5 NON-CLINICAL TEAMS

If the multidisciplinary clinical care teams are the 'doers', the ability of these teams to coordinate, integrate and apply their skills and knowledge occurs by the use of agreed and shared procedures, practices and protocols. These are, in turn, maintained and reviewed in conjunction with non-clinical support teams. The following comment illustrates something of how this works in practice:

Emergency is an area where there is enormous amount of interdependence between different classes of staff in order to get the job done. You can't work with a team of 200 people all the time but the focus, I think, clearly should be on an inclusive thinking around what is the emergency department team. In operational terms, there is really a clinical team who's on in the morning or on in the afternoon. The clinical team, comprising doctors and nurses and clerical staff and orderlies, working any time of the day on any shift is that team... They have some challenges and goals and processes that they have to get through to be able to provide care, safe care and quality care during their shift. Then, I guess, there's a non-clinical team that, if you

like, operationally, often will have members of a clinical team in it that are trying to look at processes for quality improvement and processes for research and processes for teaching and all the other things that go on within a large emergency department. Members of the teams cross over. I might be working a clinical shift on one day and my prime focus on that day, I'd like it to be – it often isn't, but my prime focus on that day is let's manage these patients coming in during this shift to the best of our ability. Then the next day I might be heading a process improvement type team and a team making a representation to pharmacy as to why it's okay for nurses to be able to prescribe analgesia or something like that. *(EDC Project Team Member, Emergency Medicine Director)*

This quote focuses on the dual role of clinicians who practise their profession at the bed side but who are also required to assess and develop their professional practice through non-clinical activities including participating in the work of non-clinical teams.

Moving now from the individual experience of working on the EDC project team, as expressed in the quote above, to the collective work of the project team. The major tasks of each EDC project team at each worksite included:

- ▶ Opening up the procedures that define and describe particular work processes .
- ▶ Assessing these against their EDC goals.
- ▶ Testing project and emergency department team assumptions by collecting, collating and analysing data from the work processes.
- ▶ Identifying areas for change and improvement in collaboration with their clinical associates
- ▶ Overseeing the changes to work processes on the ward floor, to the written protocols that define them, and testing these further.
- ▶ Communicating and negotiating agreement and actions throughout the process and with everybody relevant to the process.

Operational relationships between the emergency department and other hospital departments such as pharmacology, radiology, pathology (and a host of others) are formalised in the clinical procedures and practices. They are also formalised and described by administrative protocols. A number of the EDC project goals involved changing these requiring, in turn, discussions and agreement with other hospital departments.

In addition, the hospital and professional groupings within the wider hospital system have yet other levels of overarching policy-making processes that regulate operational and clinical practices hospital wide. That means the non-clinical team must operate horizontally across hospital departments but also vertically, connecting to and engaging with decision-makers higher up in the hospital hierarchy.

This makes the work of an EDC project team as deep as it is broad. In addition to dealing with the assessment and change of work protocols and procedures in the emergency department itself, the EDC project team had also to negotiate changes with other departments and with other levels of hospital and clinical administration. Members of the EDC project team needed not only the standing, skills and resources necessary to communicate inside the emergency department and the clinical and administrative expertise to assess, test and change work processes and clinical procedures, they needed also advocacy skills combined with a good understanding of the political landscape in the wider hospital department through which they had to negotiate their changes. As the following subsection attests, this appears no easy task.

4.4 STRUCTURAL AND CULTURAL IMPEDIMENTS TO CHANGE

4.4.1 CULTURE OF EMERGENCY DEPARTMENTS

While the existence of structures to maintain and review the procedures, practices, and protocols defining delivery of clinical care at the emergency department ward level might suggest these can be readily used to introduce change and improvement, in fact, the opposite appears to be the case. Given the pressure to respond to growing patient numbers within budget and resource constraints and the rigid hierarchy of the internal hospital environment, complete with clearly staked out territories, the emphasis is on maintaining existing standards and practices rather than their reform or replacement:

[Workplace change is not routinely encouraged] and that's a cultural thing within Western medicine, I believe. [It's] a military structure, if you like, [that] prevents and discourages the privates from coming up with good ideas... the structure of a British-based medical system is very hierarchical. There is the professor at the top, the consultants next, and registrars, residents, and then the poor little intern and medical students at the bottom. And if the poor little intern at the bottom ever gets his head up out of the pile of paperwork that he's got to do, and pipes up that he has a good idea, it's exceedingly difficult to get that message through to the professor and the director of the unit... the NICS project demonstrated that there is this a somewhat rigid, traditional hierarchical structure. It is not a structure that's geared to change. Change doesn't happen easily. In fact, there's great resistance to change. *(Project Team Member, ED Assistant Director)*

Resistance to change can occur within professional groups and levels within the emergency department and between the emergency department and other departments:

If I had tried to do this on my own it would have taken me years because we had actually been after our medical director to get nurse initiated X-rays for a long time. And he was totally against it... The health system and the education department are good for bureaucracies out there, aren't they? People can feel very threatened if anyone else steps into their area. [For] nurse initiated X-rays, and I knew this was going to be the case, our biggest resistance was the radiographers. Like all people sometimes, when they're feeling a little bit threatened in their own environment, they don't want someone at their own equal level to be thinking that they're above their level... [with] the RNs and the radiographers, basically the radiographers came back with a comment that they don't think the nurses have enough training to order X-rays. They've been proven totally groundless but I had to do a lot of audits in the process to prove that. *(EDC Project Team Member, Clinical Nurse Specialist and Educator)*

It can also occur because of professional and politicised rigidities entrenched through 'custom and practice':

We failed to resolve some of the barriers, many of the barriers we'd identified in the interrelationship between internal medicine and ED. An example of that is we have a practice here, whereby when a patient is being seen by the internal medicine registrar and the decision to admit is made, the internal medicine registrar writes his notes, then the patient has to stay in the emergency department. They can't go upstairs until the required intern comes down to write a little note appropriate in the charts. It's completely redundant, it's duplication, completely inefficient and added quite significantly to the time the patient was in the emergency department, typically anywhere from 60 minutes through to 3 or 4 hours sometimes at night. We were unable to change that practice because of entrenched resistance on the parts of the

medical registrars. It almost became industrial. All sorts of reasons were put forward as to why it couldn't be done but when it got down to it, it was a fear of change. They were frightened that this was going to somehow increase their workload. It wasn't entirely negative. I think what it did, it demonstrated to them after a while that this was really an illogical knee jerk fear reaction. That it was simply a resistance to change. It wasn't anything of great logic in what they were saying. Nonetheless the process is still in place. *(EDC Project Team Member, ED Assistant Director)*

It can occur due to the lack of key line-management personnel and related team advocacy and authorisation ability:

Our situation is, before I came on board as nurse manager, the department didn't have a nurse manager for two years. They basically had to fend for themselves which they did but they were very, very angry and very stressed to the max. Then they decided to bring in the nurse manager. We had a very flat structure of management up until two years ago. Basically, they were using the clinical nurses, the senior nurses, as being jointly responsible for the management. So, I would say that, even though they were working or trying to work together as a team, they weren't moving forward. They were very much retrospective in their outlook because they were just trying to maintain the status quo as such. *(EDC Project Team Member, Clinical Nurse Manager)*

Not surprisingly, the daily requirement of 'manag[ing]... patients coming in during the shift to the best of [their] ability' combined with structural and political rigidities and impediments occurring within and outside of the emergency department can dull the desire of employees to innovate.

Although some interviewees spoke of a few work colleagues in their emergency department who were resistant to change, emergency department employees were characterised overwhelmingly as receptive to the EDC project recognising it as an opportunity to act on improvements already known and identified among emergency department staff. This was particularly evident among nursing staff who understood the project as a way to expand and upgrade their skills and clinical practice while improving standards of patient care.

The drive to innovate and improve their work processes and practices seems to be part of the culture of emergency department practitioners. A particular desire expressed most often by nurses was to move across some of the traditional professional demarcations constraining their role and functions in order to take up greater responsibility in their clinical practice. However, they weren't the only ones aspiring to enhance the professional role of nurses:

In our fast track we utilised advanced practice nurses and we've trained those advanced practice nurses to do things that are traditionally non-nursing. Like not just ordering X-rays and analgesia but putting on plasters and suture wounds and all those sorts of things... more than doctor extenders, so they're still not working as autonomous nurse practitioners, but there has been a recognition that they're much better at it than our second year residents. Much better. I would prefer to put my efforts into them in some ways than my second year residents because I know that well, I'm always short of them and they're only here for three months, so there's a limit to what they can master, and if we put efforts into a couple of good nursing staff they might be with us for five years. I think there's been that awareness even among the most parochial of medical staff. They've said hey, our nurses are much better at doing things. And then there's also another recognition from the nursing staff and that is, well doctors can be okay in some situations as well. *(EDC Project Team Member, Director of Emergency Medicine)*

This quote illustrates the point that professional demarcations are not necessarily respected on the other side of the demarcation line and may be recognised as much older structural and political rigidities in the work environment that devalue the role of nurses and frustrate doctors, too.

Several interviewees remarked on previous attempts initiated at the very local level but, lacking wider organisational support, they enacted the changes in a 'hidden way':

There's certainly a pecking order... sometimes to get a change through organisationally is really difficult because of the processes and, I think, a lot of times you just throw your hands in the air and think it's just too hard. Or you do it informally but it's never, ever written up. It's not a ratified process, if you like, it's just done in the unit. *(EDC Project Team Member, Nurse Practice Coordinator)*

Such attempts at innovation are courageous and speak to employees respecting the value of new and good ideas, trying to put these into practice but being forced to do so in an anonymous and unregistered way within the wider systems of work. They point to work hierarchies that contain most employees while authorising and empowering a few as 'gatekeepers'. And they emphasise the real difficulties faced by non-clinical teams, such as an EDC project team, attempting innovation and change in the face of their department's day-to-day clinical responsibilities, surrounded by structural rigidities in the hospital system and difficult personalities in positions of power.

In practice, the changes wrought by use of PDSA and Breakthrough Collaborative methodology are the antithesis of contained and hidden innovation. As discussed earlier, the practice of continuous improvement actively encourages employees at participating worksites to develop and practice speaking the language of the work systems they inhabit and, rather than being firmly controlled by these systems, to start recognising them as social and technical constructs that can be changed.

Seemingly small goals, like reducing 'time to analgesia', can create a ripple that moves through the larger work systems revealing rigidities and impediments. This can empower participants with a newly critical eye able to sort out impediments into opportunities for action, innovation and change or understand them as intractable hurdles requiring a different approach.

It's one thing to see the need for change, or to identify obstacles. Acting on that knowledge demands authorisation. Involving senior management of the hospital stems from a real, not theoretical, need to cut through some of the worksite politics and structural rigidities that can confound and contain a change team. A quality improvement project team needs the active involvement and authorisation of senior management levels to empower it and to activate the blessing of line management down through the levels of the hierarchical work system. In order for a meaningful 'bottom up' change process to occur, 'top down' authority has to be present.

4.4.2 PARTICIPANT CONCEPT OF 'SUCCESS'

Further, in terms of the key research question underpinning this report and its commissioning, how do we answer meaningfully the question 'what is success and what leads to success?' when these notions are, in themselves, highly subjective particularly given the variability of the fields into which the Breakthrough Collaborative methodology is sown? A comment appearing earlier in this report speaks to this and the potential dangers of imposing narrow and de-contextualised definitions of what constitutes success that can render Collaborative participants as appearing to fail and so, unwittingly, encouraging their actual failure. It was important for participants to put in measures of success that took into account cultural and organisational factors that impinged on their operations. This enabled them to maintain their commitment to the EDC without being buffeted around by externally imposed conceptions of success or failure:

... it would be too easy to feel dejected and take steps backwards rather than forwards... The length of the Collaborative, with the expectations of what they would have liked to have seen in presentations at learning session three, were unrealistic considering what else was going on in the world. *(EDC Project Team Member, Nurse Unit Manager)*

Perhaps, most importantly, they appear to have entered into the EDC with a very clear conception of their own identity as an individualised workplace dealing with a raft of issues and of those, had identified particular aspects of their context that could and would impact, both positively and negatively, on progress toward achieving their EDC goals.

Further, of these they were able to identify those things in their control to change (or not), the processes by which they would affect change (if possible), and the timeframe in which change would be realised (regardless of whether that met the EDC timeframe):

Things that I did illustrate in earlier reports [to NICS] were that there were barriers around, like having sufficient staff to roll this out properly. That was not just nursing, that was medical as well. So we had our models for fast track and 'time to analgesia' and how we wanted to do it but we can only really do this properly on these days of the week while we're building up the staff. It really took 'til right at the end of the collaborative for us to actually start seeing what we wanted, from the staffing numbers point of view, to be able to achieve our aims. In fact, probably the times that I've put on that were the end of last year and the beginning of this year are where we're showing the improvements in everything. But we acknowledged it and we always stood up and said that, during the Collaborative, we can see the light at the end of the tunnel because we... knew doctors-wise, come beginning of February [2003], we were going to be meeting our targets for the numbers of staff that we felt we needed to make these things happen properly. *(EDC Project Team Member, Nurse Unit Manager)*

The ability of employees to demonstrate a conceptually sophisticated understanding of their workplace may, indeed, be an indicator of workplace receptivity to change. At the very least, we endeavour in our analysis to recognise definitions of success adopted by individual workplaces, and presented to us by interviewees, as both legitimate and valuable contributions to our understanding of the take-up of Breakthrough Collaborative methodology.

As will be detailed and discussed later in this section, other workplaces appear to have been much less clear in defining themselves and so, their context, and appeared to lack understanding of the interplay between aspects of context and their attempts to achieve EDC project goals. For some, the lack of clarity would prove an insurmountable hurdle although, even for these, the EDC seems to have had the affect of maturing their understanding of the workplace. This may prove useful in informing their future attempts to implement quality improvement and change processes.

We spoke with organisations that could not participate in the EDC and could be deemed to have failed. Yet, at the time of interview, after the formal conclusion of the EDC, the impediments had been removed and they were starting on their own quality improvement process based on the EDC methodology. We spoke with workplaces that were able to participate during the active stages of the EDC but could not show an improvement. They, too, on the basis of 'reading the numbers', could be considered a failure. Yet, at the time of interview, they had broken through achieving performance improvement and successful numbers. Lastly, we spoke with workplaces that had participated in the EDC, achieved their goals and made their improvements. Yet, again, at the time of interview they were anticipating project failure. Shifts and change in context over time can make impediments disappear for some, and appear for others. With this in mind, we believe a more tangible and enduring demonstration of success and sustainability is to be found in the evidence of structural adjustments within organisations that provide anchors for the continued practice of quality improvement methods.

4.4.3 SENIOR MANAGEMENT AND CONTEXT

A requirement of the EDC was the active involvement of the executive management of participating organisations. Our research was limited to interviewing two executive sponsors, one from a worksite that perceived its EDC participation as successful, and the other from a worksite that withdrew from the EDC. While the comparative insights provided by these two are useful, we will also use the comments of the other interviewees who were asked about senior management support and sponsorship during the EDC project. Further, we asked them to reflect on the motivations they believe led their organisation to signing up to the EDC in the first place.

Senior managers have an important external focus fixed by the funding and policy environment at regional and state levels of the health system, and through which they must navigate their organisation. While it has been ever thus, in recent years major changes to the funding environment have seen significant budget cuts, funding levels tied to patient throughput, and externally imposed performance benchmarking. Concomitant has been major health system re-organisation at state and regional levels, which is particularly advanced in Victoria, but underway in other states. NSW interviewees cited examples of significant changes in regional hospitals networks while interviewees from Victoria, NSW, Queensland and South Australia expressed increasing concern about shortage of hospital beds (access block), increased numbers of patients, and particularly, increased numbers of admissions through emergency departments. At the time of writing this report, public debate among health system analysts was underway regarding ever-higher numbers of patients presenting in emergency departments and whether this was caused by GP withdrawal/restriction of Medicare bulk-billing.

In very real terms, hospital senior management is faced with a turbulent external environment directly affecting the operation of their organisation, and with emergency departments positioned on the frontline. Not surprisingly, this is posing an equally urgent need to find cost-effective responses. Given the external context and its impacts on emergency departments, the EDC was a timely project. It presented the opportunity to use a lateral approach in dealing with big problems yet asked little in the way of a dollar contribution from participating hospitals. Whether a Collaborative can actually deliver solutions to problems like access block, and there is nothing from our research to show the EDC did, does not belie the immediate appeal of a low cost and low risk project that might just help. The positive spin-offs like sharing notes with other organisations, the professional development of staff and, related to this, the upskilling of personnel with applied quality improvement and PDSA methodology, made for an attractive package. Further, participating in the EDC could send a strong message out into the external environment and down into their own organisation – here was demonstrable proof of senior management being proactive, being seen to do something of national, regional and local significance.

Across the body of interviews, various expressions of this were articulated to us. Some interviewees emphasised the problem-solving aspects of the EDC as their organisation's major buy in:

We had an emergency department review go through which had identified some very positive things that were being done in our department and from there, there were particular problems. One of the particular areas of concern for us was how successful we'd been in meeting our triage targets. Our department was under stress having been through significant change and enormous growth in attendances, well beyond projected growth. So we thought it was probably important to try and pick up from learnings in other parts of the country where they were grappling with similar issues of high attendances, access block etc., to identify whether they had any improvements they could offer. We particularly wanted to look at areas such as medically assisted triage, fast track processes for lower acute patients and that sort of thing. *(EDC Executive Sponsor)*

Others emphasised the professional development aspects, or the clinical improvement value, and others the opportunity to participate in a project with a national focus:

The focus has been very much on financial performance and we're still struggling to some extent in that regard and we believe we are fundamentally under-funded as I suppose most health services would say. It's particularly an issue for us because we've demonstrated by a whole range of financial and economics indicators that we're actually providing a very cost-effective service but we still don't have... we don't enjoy the levels of infrastructure or icing on the cake that other services in [this State] have. So, we've really just reached the stage now where it's generally been recognised that we are running a cost-effective [service] and now the focus is to help us move on and not only provide cost-effectively but with a focus on clinical outcomes and services to the community. *(EDC Project Team Member, Executive Sponsor)*

We wanted to participate cause we knew we were going to get a benefit out of it at the end. And that was to improve our times, improve our patient care. At the time that the notice went around inviting us to participate we had a very upwardly pro-active CEO as well as having a very astute, albeit, part-time stand in for an ED director who's actually one of the clinical directors at the emergency department in this hospital. Together with those two plus myself, we all knew that there was going to be some huge benefits out of it in the way that we provided patient care. The staff even recognised it. So we had a team on board that we knew we felt was going to be able to achieve the aims. With hindsight of course we didn't realise that we were going to have more changes in staff etc. etc.... We're actually a privately run public hospital and we have to achieve certain specifics from our licensing requirements. Now for an executive, it was certainly going to fix one of the problems and the other point was that it showed that our hospital was pro active and was actually looking towards the future and that it was being considered part of the overall emergency medicine, emergency care, within the state and within the nation. So it was putting us on the map as far as the executives were concerned or the initial executive. *(EDC Project Team Member, Nurse Unit Manager)*

It's not possible to say if any one of these emphases proved more enduring, holding the attention and/or interest of senior management, than any other. Finding something of interest and value in the EDC was not difficult nor was the process of committing one's organisation to the project.

Senior management didn't have to know a great deal about Collaborative methodology in order to see the potential value of their organisation's participation. However, emerging from our research is another important factor about senior management that appears to have had a direct bearing on success and sustainability of their organisation's participation in the Collaborative.

Indicated in the last quote above, at the start of the project an organisation including senior management, the project team and ward personnel could believe they had all the signs of an effective and sustainable project. The quote continues below describing the situation eight months later:

The team meetings were very beneficial. Working together having an executive officer who was working with us to set up aims was actually a brilliant idea. If we had kept him, if he had stayed on board, we would have been a lot further ahead than what we are now... I'm quite concerned that the collaborative project, this will be its demise as far as the hospital goes. I have put in place some key people that may keep it going. But the momentum is going to stall because there's not that push from above, not that push from executive. I've been told face to face that they don't really care whether it falls over or not. So, from my point of view it's so important,

especially in small hospitals, that the team, the importance of the project team and the members of that project team, they need to be supported... all the work that's gone in, all that work that's been put together by the team, I'm quite concerned that it might fall over but at least, if it does, at least they shone out and they can look back and say 'we did this and this is what we do now' as a result of it. There's so many things that we could go onto like nurse initiated X-rays and nurse initiated analgesia and that sort of thing. But without that upper level support it's not going to happen.
(EDC Project Team Member, Nurse Unit Manager)

With an enthusiastic executive sponsor, project team and ward staff, this site 'shone' in reducing their 'time to analgesia'. They achieved and experienced success in their own terms with their EDC project. The interviewee's lament is about the pending demise of the project caused by replacement of the executive sponsor with others 'who don't care if it falls over'.

The right settings might exist within the context at the start of the project and endure for long enough to enable a worksite project to proceed and for staff to experience success implementing the methodology. However, over time the context can shift and change making the work environment unreceptive to the continued application of the methodology.

One of the ways context can change, with a raft of other impacts, is the loss of a supportive executive sponsor. For some worksites in our research group, the loss of their sponsor either significantly impaired their ability to apply and bed down their improvements during the active phases of the Collaborative (lack of initial success) and/or prevented them from going on to apply the methodology in other areas earmarked for improvement (lack of sustainability). In short, there was either a discontinuity in or outright loss of the authorising power at the executive sponsor level necessary to continue the innovations. As described previously, the hospital context presents a thicket of obstacles, rigidities and impediments. Remove the authorising executive sponsor and the innovation process is rapidly disempowered, the path grows over and people on the ward floor are almost powerless to do anything about it.

This problem has been addressed in other industries and is reflected in industrial quality standards (ISO 9000 series) by the development and promulgation of policy that formalises the organisation's commitment to quality improvement processes. The ISO 9000 series doesn't dictate what the policy should be. It does emphasise, however, that the starting point for a credible quality improvement procedure is the existence of organisational policy supporting that to happen.

In our research we did not find any evidence of distinct and formalised organisational policy that recognised the EDC as a bona fide part of quality improvement. Only one or two interviewees mentioned any dialogue occurring between their emergency department and the quality improvement department/officer in their hospital. The EDC appeared to sit out on its own dependent on the executive sponsor responsible at the time of project sign up and commencement. Without any formal connection to overarching quality improvement policy, which these workplaces most probably do have, the relationship between the Collaborative, its innovators on the ward floor and the office of the executive sponsor appears to have been very personalised, indeed, reliant on the good will and personal support of whoever was in the CEO chair at the time.

An obvious way to help overcome this problem is to connect Collaborative projects with quality improvement policy in the organisation *on a formal basis*. Rather than Collaborative project success and sustainability being reliant on the hope that a supportive executive sponsor doesn't change jobs, the leadership of such projects needs to be transferred to *the office of* the senior executive sponsor, whoever that person might be. The policy then starts dictating that quality activities are part and parcel of the leadership job and not an optional extra. At the very least, this would empower employees embarked upon a Collaborative project to seek some accountability in line with the operational policy of the organisation from a reluctant, uninterested or recalcitrant senior manager.

Formalising the approach might also help give some direction to executive sponsors who are interested and supportive but lack the practical skills necessary to maintain a Collaborative in their worksite. This has bearing on a second important aspect of management, but this time middle and departmental management emerging in our research. Discontinuity at middle management levels through staff turnover can also destabilise or lessen the success of a Collaborative project on the ward floor:

It probably wasn't an ideal time for the project to be done because the director was away and even though he's been backfilled, one of the others stepped up to do that role. I think it's always better when the person who owns the position is actually there. The NPC prior to me had resigned and gone to Melbourne and there were people acting in that role as well. So, I think at the time the ED itself was undergoing a lot of changes, senior staff were out of the department and there was a lot of backfilling occurring within the ED. I think that would have been a big impediment that there was no one who actually owned the position of driving it. *(Nurse Practice Coordinator)*

This interviewee's organisation withdrew from the EDC. The senior executive officer did not act to provide the necessary support and continuity of approach required and indicated, during the interview, that they were unsure about the appropriate intervention.

Conversely, there were a range of examples from the interviews where the strong and ongoing involvement of departmental management anchored the projects and enabled them to go forward. Departmental management can take up a significant portion of the leadership role in the absence of ongoing senior executive support although there may be some question as to whether this contains the innovation within the department.

A third and important aspect of the senior management role, related to context, was the availability of resources within the emergency department necessary to support the EDC. As indicated at the beginning of this subsection, one of the appealing aspects of the EDC to senior management, was the relatively small financial outlay involved. As described in the Method section of this report, participating organisations were required to pay the airfare and accommodation costs associated with their representatives attending the three two-day learning sessions.

However, implementation of the EDC on the ward floor generated specific resource needs. In approximately half of our interviews these appear to have been ignored:

You know how we were supposed to make posters? Well look, we just had no money, absolutely no money. So, I took a few photos around the hospital, my daughter typed up some stuff on the word processor, we cut and pasted and then I took it down to the local laminator and got it laminated. I mean this is so pathetic compared to some of the stuff that was displayed on the posters. I was really very embarrassed but that was all we could do. We were just totally not funded. There's no money for anything. *(EDC Project Team member, ED Director)*

I think if we had, and this applies both to the project and more generally, we've been asking for administrative help here ever since. When I came here they promised me a secretary or administrative assistance, let's put it that way, and that's yet to happen. So if we had had someone who was sitting in an office and was able to do some of the data, some of the recording work that would have helped considerably. *(EDC Project Team member, ED Director)*

It was by the good grace of people that we made this happen. We were given some resources, we were given our data inputting nurse who did some shifts with that and so we were given 'hours' which was terrific because it did ensure that things were collected. However, that died off and she's since [gone] and the data's totally

stalled right now. It felt like, really, the rest of senior management, as in the CEO, even though he certainly funded it, he wasn't that interested in what we'd achieved. I think he had a resignation on the way and then we were directionless for a long time. I think that it could have been nurtured a lot more from the top and publicised and it really wasn't. I don't think it was resourced as well as it could have been. *(EDC Project Team Member, Clinical Nurse Educator)*

No. It was do your work and if you've got to, do some extra work at home. It was on top on existing workload. I'm hoping in future that will change now. *(EDC Project Team member, Acting Nurse Unit Manager)*

We are not asserting that it was impossible to achieve success without being resourced internally. Nor are we asserting that it is impossible to sustain the innovations into the future without dedicated resources. The interviewee in the first of the series of quotes above wasn't daunted by the lack of money. In fact, one of the things they learned from the EDC experience, which has inspired them to look at a few other 'little' projects, was that lots of resources aren't essential to making important changes.

However, in terms of a key part of our research brief asking us to identify 'what makes for sustainability into the future' appropriate and adequate resources emerge as an important factor. People were enthused to attempt the EDC. They may not be so enthused if future quality improvement projects are presented to them as more work 'to be done at home'. The 'stand out' interview on this matter among the twenty we conducted came from a worksite that had additional and adequate funding provided by an external source to support their participation in the EDC. The interviewee reflects on the needs it met and on the situation had they not been funded:

The DHS gave us an enormous amount of money. Well, I thought it was enormous which we used most of. That was used to give me office space and allow my shift to be back filled so that I had the time to do the protocol development and that the doctor was backfilled as well so he had time to do the statistics. I think we were catered for very well. [If we hadn't had that support] I would have been stuffed. The whole thing wouldn't have worked. That was essential. If I had had to try and do this project and work full time on the floor it just wouldn't have happened at all. *(EDC Project Team member, Registered Nurse)*

Later in their interview, they go on to reflect and, for our purposes, define what a sustainable project looks like:

Once this protocol appeared on the scene the nurses were at me, 'let us do this, let us do that'. I've gone on to develop protocols such as the ability to put in local eye anaesthetic drops for people with eye injuries. That's been hugely successful because it's just a simple process putting in one drop of stuff into someone's eye and their comfort is instantly achieved and nurses love being able to do that. It's minimal effort for maximum result. And the patients are appreciative as well, as a rule. The use of lignocaine anaesthetic gel for wounds... we'll pop that on a child's wound while they're waiting and it will (a) reduce the pain and (b) quite often they don't need to have an injection of local anaesthetic. That's a winner. We've got protocols, I've written protocols for nurses being able to give Ventolin nebulisation to asthmatic patients which is really useful and I'm doing one at the moment so they can give intravenous saline and Maxolin to people with gastro without a doctor's order. When we've got waits of three or four hours these poor people sit around in this dehydrated state. It will be really good just to be able to give them some fluid and stop them vomiting. A lot of time they'll be cured by the time the doctor sees them and the doctor can say 'well, off you go'. So it's snowballed really. *(EDC Project Team member, Registered Nurse)*

Compared to this ‘snowballing’ effect of innovation, continuous improvement of patient care, professional and team development, many of the other worksites in our research group were struggling along buoyed by the personal enthusiasm and commitment of ward staff and/or emergency department management.

It may well be the case that overstretched hospital budgets simply don’t have the capacity to meet the resource needs of quality improvement projects. But, senior managers who commit their hospital to such projects and then don’t find the necessary resources to support their staff are guilty of a triple failure: they fail their organisation, they fail the staff they have committed to the project, and they fail a component of the second principle of quality management: ‘Leadership’ and particularly ‘providing people with the required resources, training and freedom to act with responsibility and accountability’ (‘Quality Management Principles’, Industrial Organisation for Standardization (ISO), 2003).

Rather than damning those executive sponsors in the EDC who may have failed in these ways, it is worth concluding this subsection with two final quotes:

We’ve just started another new initiative looking at service improvement in the emergency department and I think the confidence level to embark on this process was much higher because of the NICS collaborative. It’s almost as if we had demonstrated to ourselves and our peers that we [could] actually achieve a noticeable difference through those activities. So we felt more confidence to put our hand up for Commonwealth dollars to roll out this other project. It was really good in terms of, not only networking and picking up ideas and possible opportunities from other network partners, but also giving us confidence to move ahead with a new initiative.
(EDC Executive Sponsor)

The point is that executive sponsors and senior managers may also need the opportunity to learn, develop professionally and grow their confidence. For some of the participating emergency departments and their executive sponsors, the EDC was their first experience of applied quality improvement methods. As the above quote demonstrates, for this executive officer the experience was positive, successful and helped position both the organisation and its leader to move ahead, obtain resources, and seek the achievement of sustainable, ongoing improvements.

The following quote illustrates the benefit of taking an approach that uses internal hospital resources and particularly quality improvement officers who are able to provide important intellectual and practical resources to a Collaborative project:

Early on we identified that and we were successful in getting some time of a quality manager from the network, who’s the key contact. She was in the position to be able to I guess do a lot of the data crunching, put out the big spreadsheet, okay, well these are the dates of the three days of the learning session and this is when the NICS report due and it doesn’t sound like an enormous amount, but gee it takes a lot of time. And we wouldn’t have been able to participate in the NICS had we not done that. That was fantastic because the person was very cluey about quality as well. The break down of where she left off is that she’s not embedded in the department in any way. So, she’ll report all the data and send it back to us and say look your times are going up again and then it was up to us of course to widen that out to the rest of the department but even that takes a lot of time. On reflection, and what I would like to achieve for the next budget is actually having a person affiliated with the department to provide [that function] *(EDC Project Team Member, ED Director)*

Although initiated by management of the emergency department, the benefits were clear and can be used to support an argument to senior management for internal dedicated resources that embed the position and the capability within the emergency department. While the EDC provided

senior management with an opportunity to learn directly about quality improvement methods, and the supports necessary to underpin innovation, it also provided middle management with some lessons they could use to teach them.

4.4.4 THE CONTEXT OF OTHER ORGANISATIONS

In the introduction to Context, we referred to some organisations that had difficulty in defining their context and posed an insurmountable hurdle when trying to participate in the EDC. We will turn to these as they appear to present some important findings relevant to future Collaborative initiatives and add to our understanding of contextual factors contributing to success or failure.

In our research group, we found two emergency departments that were sub-entities of other larger organisations. One was a small emergency department clinic in a suburban fringe connected to a geographically distant larger regional hospital with its own emergency department. The other was an emergency department operating in a private hospital that was, in turn, part of a larger public hospital with a (public) emergency department. They were geographically separated by a road, and organisationally separated by their respective public/private status, and distinct workforces.

The EDC was imposed on both of these by the larger host organisations. In addition to trying to introduce the EDC to these external satellites, the host organisations were also trying to implement EDC projects within their own emergency departments. Attempting to implement two separate EDC projects, internally and within an external satellite, proved impossible.

For the regional hospital and the small emergency department clinic the EDC was used as an opportunity to try to improve relations fraught with competitiveness and bad feeling. The origin of these tensions resides in the history of the two organisations and significant changes in the demographics of the wider community they service. Once a quiet and remote rural setting serviced by the smaller and older clinic (and small hospital), during the last twenty years the area has seen major suburban development and a rapid expansion in population numbers requiring a new and larger hospital facility. In the transition from a rural to suburban region, the smaller clinic (and hospital) found its status reduced. Rather than being the key provider of hospital and emergency care in the region, it became part of a small regional cluster with the new, larger hospital at the core.

While management of the new hospital were and are committed to improving relations between the two and believed the EDC to be a means of achieving this, key management in the clinic asserted their power in the relationship by rejecting the EDC. The problems and tensions escalated to the extent that they threatened the viability of the EDC within the host organisation's own emergency department. As a consequence, the larger hospital was forced into postponing their attempts to establish the EDC in the smaller clinic. Yet, by pulling back, and being seen to acknowledge and respect the autonomy of the clinic, resistance in the clinic eased. At the time of conducting the interviews for this evaluation, almost a year later, the clinic was starting to come to terms with the EDC and seeking assistance from the larger hospital to attempt EDC implementation in its own right:

My colleagues reflected on the fact that [the other clinic] is now ready to implement some of the changes that have been experienced here and, rather than use something like the NICS collaborative as a method of combining two units, I think our experience has been let one unit take the leadership role then let the smaller unit take a following role in their own right (Executive Sponsor, host organisation)

As discussed in the introduction to this section of the report, the basis for successful implementation of the EDC owes something to a strong sense of internal identity where employees know the landscape of their internal workplace context and use this to help them

determine if, when and how they will proceed with a change management process. In this example, while the host organisation thought that its familiarity and connections with the smaller clinic were the ideal basis for introducing positive change, the smaller entity experienced the relationship as a threat with the EDC exacerbating their fears. It was only by acknowledging those fears that the host organisation could demonstrate its respect for the smaller organisation and so enable it to become open to the establishment of the EDC at the site.

The second example is that of a private emergency department in a private hospital geographically and organisationally part of a much larger cluster of public hospitals. The initiative for establishment of the EDC came 'across the road' from the larger public emergency department. Only one person from the private emergency department was recruited to participate in the EDC project team that was owned ostensibly by the public emergency department. The clinical educator, chiefly responsible for establishment and day-to-day management of the EDC, was shared between the two sites, with the public emergency department commanding the lions share of their time. While the private emergency department recruit was enthusiastic, attending the first learning session, and gathering data from the private emergency department site, they didn't disseminate information and devolve responsibility to other employees in the private emergency department. A few months into the project, they left employment in the private emergency department and the site was left without the skills, knowledge and resources necessary to continue participating. As spelt out by the interview subject from this site, it's not possible to implement a change process when you're treated as an adjunct to the main action going on across the road:

If you're going to be involved in it you need to have the full involvement of the department feeling like it's totally involved in it and not, this person running it on behalf of this department with a bit of backup from the other side. If you're going to do it you've got to do it as a full department with the full resources in the department supporting. *(Clinical Nurse Consultant)*

We didn't interview a representative from the public emergency department, and are unable to comment on whether they saw failure of the private emergency department as their failure. However, the interviewee emphasised that, had they been able to participate in the EDC with proper recognition and resources, they would have succeeded as an EDC participant in their own right:

Nothing against those people but their priority is to support the department within which they're working and they don't have that time given to be available to us when we necessarily need them. That's outside of NICS control but what I'm saying if NICS is looking at it they should say 'if this department wants to be involved in it it's got to have a full core thing from within it's own department.' If it hasn't got that, then there's no point in being on the trial. *(Clinical Nurse Consultant)*

Connections with and geographic proximity to a 'satellite' site might appear an ideal setting to extend an improvement process. However, as learned in the previous example of the larger hospital and smaller clinic, and as underlined by this second example, misreading the relationship might, in fact, doom the 'satellite' to the experience of failure:

Just because they're close to each other [doesn't mean that you] can rely on the resources from that other department... to work the program. The resources need to be within the department itself so it's got full contact within the department and [is] not relying on some one else to be feeding them the contact information. *(Clinical Nurse Consultant)*

4.4.5 THE ROLE OF NICS IN AUTHORISING CHANGE

Given the structural impediments to change identified above, the role of the EDC proponent, NICS, emerged as an important influence in opening up nascent receptivity to change both within the emergency department context and wider hospital system. NICS had a major role as an authorising agent both for senior and line management, and for the EDC project team members during the start up and implementation phases that followed.

Interviewees variously described the authorising power of NICS as emanating from its status as a large external organisation able to neutralise some of the internal structural impediments. This doesn't mean that NICS actively involved itself inside organisations on a day-to-day basis. In fact, NICS arms distanced itself consciously from the internal machinations of each participating worksite. Rather, it appears that many EDC participants saw and used NICS' reputation as a respected external institution, with a clinical focus and actively encouraging evidence-based clinical practice and evidence based improvements. This seems to have been a particularly persuasive combination for internal change agents when dealing with internal committees or clinicians who are posing barriers:

If I had tried to do this on my own it would have taken me years because we had actually been after our medical director to get nurse initiated X-rays for a long time. And he was totally against it. But now as soon as NICS initiated it, it came from them, he, all of a sudden, changed track. He said, okay, this may be a good thing and is now a great fan of it. I had tried this a few times before and had hit a brick wall. The nurse initiated pathology, I wouldn't have thought that I could have changed that. I wouldn't have been able to initiate that. But I think because it's come from the Collaborative... the people that were going to be involved in nurse initiated pathology, which is our pathology department, [they] didn't think it was the nurses stepping over their role thinking they could be smart. When they realised that it's actually from a big organisation, that this is possible, they've actually said 'okay'. They didn't try and obstruct it. That same obstruction I talked about before coming from the radiographers, because it's come from this bigger organisation they feel less inclined to object. (Q how long would it have taken you to achieve nurse initiated pathology without NICS?) It would have taken up until a year. It would have had to go through committees and objections. With NICS it went through without the fuss. It bypassed all committees. *(EDC Project Team Member, Clinical Nurse Educator and Specialist)*

It's one thing to try and block change sought by colleagues who are trying to be 'smart'. It's quite another to repudiate changes authorised by an external arbiter with distinct knowledge about clinical practice and its improvement. Hence, in some EDC worksites challenging the changes suggested by the internal EDC project team became synonymous with challenging NICS and its reputation.

Further, and related to this, we suspect that NICS, as projected by EDC project teams, hooked into the personal motivations that drive many professionals working in the medical and health sectors:

I think that one of the distinguishing features of medicine or the practice of medicine or the practice of medicine by its practitioners is that there's an intense drive to do the job well, far more than, I think, the vast majority of other professions. It's almost masochistic at times what people will do to be seen to have done their job in a diligent and good way. But, it's exactly right, that is quite different from encouraging change and looking for better ways of doing things systems wide.

For some the NICS EDC became a clearly delineated way of people 'being seen to [do] their job in a diligent and good way' in combination with encouraging change and taking a systems wide approach. That is, internalised motivators could be transformed into externalised goals, action and change.

Within the limitations of our evaluation brief, it was not possible to research and compare the role of NICS as an 'insider' proponent of a Breakthrough Collaborative with, for example, more distant quality improvement proponents such as a state health system department or generic improvement program or even a QI consultancy. We did discover, however, the complete absence of any scepticism among EDC participants about NICS motives in mounting the EDC. They greeted NICS and its EDC as agents for positive clinical changes and happily used both to open doors and seek out support wherever needed.

The evaluation was constrained by timing and financial constraints, which limited the number of interviews to nineteen and the number of sites to fifteen, and did not enable case studies. The case studies would have enabled observation by the researchers, and a greater number of interviews at each site that would have provided a level of data triangulation. However, given the in-depth content of the interviews the researchers believe that the main issues were likely to be identified in the interviews undertaken

The design of the study was limited to interviewing participants after the formal action stages of the EDC were finished. We were not able to assess the context and views of organisations prior to their involvement in the Breakthrough Collaborative, nor witness and evaluate the processes by which organisations applied the PDSA cycles at the time. From an evaluative perspective, therefore, we have no 'before' or 'during' that we could use to measure the transformation of work processes via the Breakthrough Collaborative. After the event, we are reliant on the individual testament of interviewees to describe and measure the effect of the change processes both on their workplace and on their own perceptions as active participants within those processes.

1. Unpack the front end of the EDC methodology and provide a formal briefing session for decision-makers for the initial contact person(s) or those responsible for committing their hospital to the project. After the formal briefing, invitees should be given enough time to communicate with their associates at the worksite and then be invited to commit formally to participate in the EDC. The briefing session should cover:
 - a. The nature, methodology and scope of the EDC.
 - b. The expectations and needs created on site by projects. These include:
 - allocation of resources to support the EDC project team and its work, particularly non-clinical time and staff backfilling
 - budget allocation for the production of resources (for example, posters, protocol development) and the enhancement of communication (for example, on site seminar(s), briefing sessions)
 - administrative and IT support for data collection and collation.
 - c. Formalising the status of the EDC as part of the hospital QI policy and develop liaison between the project team and quality assurance department/officers at the hospital.
 - d. Optimising the successful participation of their organisation, including the composition of an effective project team. The project team should reflect the workforce composition in the site(s) of the EDC.
 - e. The requirements of hosting a project with multiple-site implementation, for example, planning, negotiation and consultation across all sites, project team establishment and resources for each site.
 - f. The availability of possible external funding sources to support the EDC project at worksites.
2. Introduce an EDC policy for attendance at the learning sessions and particularly learning session that specifies attendance of people from the project team in line with 3(d) above. Make this a prerequisite for acceptance of each worksite's learning session registration.
3. Incorporate EDC initiatives into the formal quality infrastructure (quality department) at sites. Without any formal connection to overarching quality improvement policy, the sustainability of the EDC is diminished, reliant on the support of the executive sponsor at the time.

- Bate, S. P., Robert, G. & McLeod, H. (2002) *Report on the 'Breakthrough' Collaborative approach to quality and service improvement within four regions of the NHS: A research-based investigation of the Orthopaedic Services Collaborative within Eastern, South & West, South East and Trent regions*, Health Services Management Centre, University of Birmingham.
- Robert, G., Hardacre J. & Locock, L. (2002) *Evaluating the effectiveness of the Mental Health Collaborative as an approach to bringing about improvements to admission, stay and discharge on Acute Wards in the Trent and Northern & Yorkshire Regions*, Health Services Management Centre, University of Birmingham.
- Kleiner, A.. & Roth, G. (1997) *Learning Histories: A New Tool for Turning Organisational Experience into Action*, Center for Organizational Learning, Massachusetts Institute of Technology.

APPENDIX 1: INTERVIEW QUESTIONS FOR QUALITATIVE EVALUATION

1. Job title?
2. Length of time in ED at hospital?
3. Length of time in the profession?
4. Total number of people in ED team (approx.)?
5. In any one shift what is the approximate number of people on duty?
6. Before the collaborative, do you feel you worked well together as a team?
7. How do you communicate as a team and maintain cohesion as a team across all shifts?
8. Which areas were represented on your ED Collaborative project team?
9. Feelings about ED when first told?
10. Has your emergency department participated in a collaborative or other change project before?
11. Does your hospital routinely encourage workplace change and improvement?
12. What do you think was your hospital's interest in participating in the collaborative?
13. Have you used or come across PDSA before?
14. Have you participated in or been familiar with a collaborative based approach to change before?
15. After participating in the introductory learning session, received the documentation did you feel skilled up and ready to go?
16. What performance topics did your ED choose?
17. Was your team able to make it the point of implementing the PDSA cycle and measuring the improvements?
18. How did you find the pace of learning about PDSA and the quality improvement cycle?
19. The collaborative provided opportunities to network with other hospitals. Did you participate in the networking?
20. Did your, and your team's, understanding of patient needs improve as a result of the collaborative?
21. What did you and your team want to achieve from the collaborative?
22. Over the period and process of implementing PDSA and participating in the collaborative did you notice any change in the relationships between people in your ED?
23. How did your team resolve conflict and particularly where there was creative conflict around changes to work processes?
24. Did the collaborative and use of PDSA result in changing work practices/processes within your ED?
25. Was your ED properly resourced to participate in the collaborative in terms of personnel, time release?
26. Was your ED/hospital information technology adequate to track your team's performance and generate the graphs?

27. Did your ED change process enjoy senior management support and, if so, how was that demonstrated?
28. Did your and other ED team members job satisfaction increase or decrease during implementation of the change processes?
29. The ED collaborative had a number of components. These were senior management sponsorship and support, the learning sessions, networking, conference calls, and data collection? Please prioritise these in terms of the most useful to the least useful?
30. What do you think were your EDs key achievements including unexpected spin-offs and/or unexpected achievements?
31. What do you think were the key problems or setbacks experienced by your ED when trying to introduce and implement improvements?
32. Do you think your hospital and ED is interested in continuing to use quality methods?
33. Are you aware of any other departments that have developed interest in quality improvements as a result of your EDs collaborative projects?
34. If you were to talk with a hospital department team embarking on a collaboratively based quality improvement process, what three pieces of advice would you give them?
35. Was there any other area or issue not covered in this interview that you wanted to raise?

APPENDIX 2: CLINICAL AND OPERATIONAL INDICATORS (PERFORMANCE GOALS) PROVIDED BY NICS TO EDC PARTICIPANTS

1. Time to IV analgesia: Suggest 20 minutes correlates with high patient satisfaction.
2. Referral & response time to specialty units: Suggest 20% less than current mean time.
3. Time to administration of thrombolytics: Suggest less than 30 minutes achieves best clinical outcomes.
4. Time to antibiotic administration in pneumonia: suggest 60 minutes to optimise patient outcomes.
5. Time to antibiotic administration in febrile neutropenia: Suggest 30 minutes to optimise patient outcomes.
6. Time to nebulisation administration: Suggest 20% improvement on current median time
7. Total time spent in the ED for admitted and non-admitted patients: Reduce total time spent in the ED by 20% or more.
8. Percentage of patients fast-tracked: 5–10% and 80 minute or less median length of stay.
9. Percentage of patients that did not wait: Decrease 'did not waits' (e.g. by 50% or to 1–2% of all patients).
10. Time to admission decision or bed request: Decrease time from bed request to inpatient bed by 20% or more.

11. Pathology turn-around time: Suggest 20% improvement on current median time.
12. Time to resolution of patient complaints: Target main area of complaints and set achievable reduction.
13. Patient satisfaction: Measure patient perceived needs.
14. Staff satisfaction: Measure ED culture and readiness for change.