

# Effectiveness Of Telephone Call Interventions in Promoting Glycaemic Control and Self-Management Among Type 2 Diabetes Patients: A Systematic Review and Meta-Analysis

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**Background:** Diabetes Mellitus is a growing global health concern affecting 425 million people worldwide, nearly 90% of whom have type 2 diabetes (T2DM) (International Diabetes Federation, 2017; Diabetes UK, 2018). The treatment for T2DM hinges on self-management involving lifestyle modifications such as healthy diet, physical activity, hypoglycaemic medications, regular blood glucose monitoring and foot care. Therapeutic progress is assessed by glycaemic control, measured as glycated haemoglobin (HbA1c) level (American Diabetes Association, 2018). Patients with higher HbA1c levels (>6.5%) have increased risk of developing diabetes-related complications such as hypertension, stroke, kidney failure, poor wound healing and amputations, and heart attack.

The role of patient education, support, and follow up interventions are crucial in T2DM care. Supporting individuals with T2DM is vital in promoting their self-management and translation of therapeutic guidelines to practical daily living. Telehealth by clinicians is essential in reaching individuals with a chronic disease requiring self-management (Huang et al., 2015). Telephone or mobile phone calls which are examples of telehealth interventions, can remove geographical barriers to accessible patient follow-up support (WHO 2010) and appears to be more flexible as it requires minimal user expertise compared to internet-based applications.

Several randomised controlled trials (RCTs) have tested and reported telephone call interventions' effectiveness among adults with T2DM. Therefore, this review aimed to evaluate the interventions' impact in promoting glycaemic control and self-management in this patient group across trials.

**Method:** Review authors searched electronic databases including MEDLINE, CINAHL, Embase, PsycINFO, Web of Science, and the Cochrane Library in January 2020 using the following search terms: mobile phone, telephone, self-management, glycated haemoglobin, type 2 diabetes mellitus. Additionally, searching for citations of relevant trials and reviews, and grey literature was undertaken. RCTs of telephone or mobile phone call interventions involving diabetes self-management education and support delivered by clinicians for adults with T2DM aged 18 years and above reporting changes in the primary and secondary outcomes (HbA1c and adherence to self-management practices respectively) were selected for review. Review authors independently extracted the population and intervention characteristics, and primary and secondary outcomes of the included trials followed by risk of bias assessment using the Cochrane Collaboration's tool (Higgins 2011). The primary outcome measure of HbA1c changes across trials was pooled by random-effects models using Cochrane Collaboration's Review Manager software. Due to substantial variations in the secondary outcome measurement in the trials, changes were reported as narrative synthesis.

**Results:** The review included a total of 20 trials (figure 1). However, 15 studies provided adequate information on 3612 participants for the meta-analysis. Overall, telephone or mobile phone call interventions at a median follow-up duration of 9 months led to mean HbA1c change of -0.51% (95% CI: -0.66 to -0.35; P<0.00001) as shown in figure 2. In subgroup analysis, highly intensive frequency of weekly and biweekly clinician calls over 3 to 4 months showed greater mean HbA1c change of -0.75% (95% CI: -1.14 to -0.36; P=0.0002) in favour of the intervention while low intensive monthly calls for 12 months yielded a lower effect of -0.43% (95% CI: -0.64 to -0.22; P=0.0005). Generally, statistically significant improvements in self-care activities include healthy diet, physical activity, medication, blood glucose monitoring and foot care adherence in the telephone group rather than the usual care group across most of the studies.

**Implications:** The meta-analysis shows that telephone or mobile phone call interventions providing continuing education and support delivered intensively can promote glycaemic control and self-management among adults with T2DM. It is, therefore, imperative for policymakers to consider these remote avenues in achieving better diabetes outcomes. However, further trials with larger sample sizes are needed to evaluate the effectiveness of the intervention further.

## Culture and context influencing healthcare governance behaviours

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**Background:** Healthcare boards of directors have an important role to play in upholding quality and safety in healthcare, however high-profile national reports, e.g. Mid Staff Report, have expressed concern about the focus of board priorities. My doctoral study seeks to explore the perspectives and understanding of Hospice Board of Directors seeking to embrace corporate governance and its relationship with the achievement of a Board culture for quality and safety, within the context of a changing cultural environment.

**Methods:** Research in governance and healthcare quality and safety is spread across many different fields, and informed by the philosophical theories of sociology, psychology, behavioural science, anthropology, economics, language and linguistics. Four search retrieval methods were used because of this spread of theories. The time span 2000 - 2020 was chosen as it was around the turn of the century that major government policy reports were commissioned, recommending changes in organisational culture and the governance of quality and patient safety.

**Results:** In researching the literature on behaviours in governing for quality and safety in healthcare three relevant concepts were developed. These concepts are:

1. governance behaviours
2. culture and values in healthcare
3. context

**Implications:** The literature review concept map provides a pictorial overview of the three concepts and served as a good starting point for the study. Using the concepts approach assisted with the synthesising of the literature. Some consistent findings have emerged in the literature including the interconnections between culture and context influencing individual and collective behaviours at board governance levels.

# The Efficacy of Hospital Based Interventions in Reducing Hospital Length of Stay for The Inpatient with Diabetes: A Systematic Review

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**Background:** Diabetes and its complications bring about substantial economic loss to people with diabetes and their families, to health systems and national economies through direct medical costs and loss of work and wages. In 2019, world-wide diabetes-related health expenditure was estimated to be USD 760 billion in adults aged 20–79 years, with much of the spending among those aged 50–79 years. Diabetes has a large and independent effect on hospital admissions, especially surgical admissions and the overall mean length of hospital stay (LOS) for inpatients with a diabetes diagnosis is almost twice that for patients without a diabetes diagnosis.

**Methods:** A review of the literature was undertaken using Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) guidelines. The primary outcome was reduced hospital length of stay (LOS). Four electronic databases (CINAHL, Medline Ovid, Web of Science) were searched for studies published between January 2010 and October 2020 with Scopus used for citation chaining. A total of 17 studies met the inclusion criteria and were included in this review.

**Results:** The studies varied in terms of design: three randomised controlled trials, four pre-post intervention studies, two retrospective and prospective studies and one quality improvement study. Studies were conducted across nine countries, in hospital settings and included adult patients living with diabetes. Several categories of clinical intervention were identified that led to reduced LOS: Clinical Procedures and Treatment, Education, Multidisciplinary Teams and Diabetes Inpatient Specialist Nurses and Technology.

Specifically, use of an intensive insulin therapy programme in a hospital and ICU setting reduced LOS by 23.6% and 38% respectively; implementation of a clinical decision tool showed a significantly lower median LOS (1.0 vs. 3.5 days); a DKA pathway significantly lowered LOS (104.3 to 72.9 hours) and a DKA management protocol reduced mean LOS (4.4 days vs 3.0 days). Utilising a perioperative passport demonstrated a shorter mean LOS (4.4 vs 6.5 days) while a diabetes treatment programme significantly reduced LOS (7.0 days vs 8.0 days) in patients who received percutaneous coronary intervention.

Education programmes presented positive results with mean LOS reduced (7.5 to 6.7 days) and junior doctor education demonstrating decreased LOS (5.03 days vs 6.98 days). An inpatient diabetes team resulted in a decrease in LOS (0.34 days) as did a podiatry high risk foot coordinator position (33.7 days to 23.3 days). Following diabetology consultation, LOS was reduced by 1.56 days with a foot ulcer treatment programme a significant difference in hospital stay ( $24.5 \pm 6.4$  days vs  $33.8 \pm 19.9$  days). The use of CGM technology and an in-hospital glucose control system significantly improved LOS by 1-day and by 1.6 vs 2.6 days respectively. Other clinical outcomes included reduced prevalence of hypoglycaemia, decreased glycaemic variability, improved hyperglycaemia management, high level of patient satisfaction and estimated annual gross savings. A significant change was seen in 30-day readmissions, and greater confidence with insulin administration and increased empowerment of nursing staff.

**Implications:** The clinical outcomes of this review highlight important implications for nursing management in reducing hospital LOS. Nurses have key roles in MDTs and specialist nursing positions and notable responsibilities in clinical decision making in the management of blood glucose in consultation with other members of the clinical care team all of which are shown to reduce LOS. Likewise, the application of protocols and pathways with a procedure for triaging referrals of inpatients to the diabetes team have been shown to empower nursing staff. Therefore, investment in these areas could reduce LOS and ultimately hospital diabetes care costs.

## A Communication Aid App for An ICU Ward: Findings from A Service Evaluation

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**Background:** Being unable to communicate is one of the most frequently reported distressing symptoms by patients who have been intubated in an Intensive Care Unit (ICU). It is known that communication aids can be beneficial in this situation, however there are currently few strategies in place to support communication with these patients.

Barnsley Hospital and partners, and a team of individuals who have been intubated on ICU, have co-designed and developed a communication app that aims to address this need. This forms part of an intervention which also includes general communication training for staff.

Agreement was sought from Barnsley R&D department, and key members of staff on an ICU ward, to carry out a service evaluation of the ICU communication toolkit.

### *Aims and objectives*

- To observe and evaluate the communication methods in use within Barnsley ICU.
- To observe and evaluate the impact of the introduction of the ICU app and training intervention on communication as part of normal clinical practice.

**Methods:** Training was delivered to grade 6 nursing staff, including principles and methods of communication with intubated patients, and how to use the ICU app, and iPads with the app were provided to the ward. Staff were asked to use their professional judgement to decide when a patient might benefit from the app.

The evaluation was conducted via interviews, observations and researcher notes:

- Staff were interviewed before and after the intervention, to find out how they felt about communication with intubated patients, and whether or not they felt that the ICU communication toolkit was effective in improving communication.
- Observations took place before and after intervention. This recorded communication events that took place between intubated patients and staff/families.
- Detailed researcher notes were kept throughout the service evaluation.

Data from these sources were analysed using thematic analysis, in NVIVO.

**Findings:** Findings focused on communication with intubated patients on the ward, and the introduction of the ICU communication toolkit. Themes emerged describing barriers to communication, and existing communication strategies, which were entirely no-tech or low-tech (e.g. pen and paper). Further themes described positives and negatives of the communication toolkit, and the introduction of the app to the ward, including examples of successful use and confounding factors.

**Implications:** Interviews and observations suggested that while staff were effective in communicating to patients, two-way communication was problematic. The observations illustrated various strategies in use on the ward, but nurses felt strongly that they needed a more reliable method.

Despite the positive response of staff on the ward to the idea of an ICU app, the app was not adopted successfully by the ward. The evaluation findings suggests that this may have been impacted by the design of the app itself, practical issues, and the way the app was introduced to the ward. Further work is needed to incorporate these findings into a redesign of the ICU communication toolkit.

## Identifying, Understanding and Stopping Low-Value Safety Practices

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**Background:** There is increasing recognition of ineffective clinical practices and systemic waste in healthcare services, with evidence suggesting that up to 30% of medical spending is unnecessary. Previous research has focused on the identification and cessation of clinical interventions that deliver minimal benefit. To build a better healthcare system, we must also consider de-implementing non-clinical safety practices that have little benefit for patients in order to create the space and time needed to deliver more effective care. The first step towards de-implementation is to identify low-value safety practices. Previous attempts to de-implement healthcare practices have involved external policy makers and commissioners employing top-down strategies to decide which practices are least cost effective. Guidelines have then been developed to discourage health professionals from their use, an approach which has proven difficult to implement. Asking healthcare staff themselves to identify potential opportunities for disinvestment such as practices that do not result in benefits for safety or are simply impossible to implement, may be more effective. The aim of this study was therefore to identify non-clinical safety practices used in healthcare in the UK, which are perceived by healthcare staff to have little benefit for patient safety.

**Methods:** Purposive sampling was used to recruit healthcare staff with clinical experience. Data collection took place from April 2018 to November 2019. Participants completed the survey online or by paper questionnaire on hospital wards. The main survey question asked respondents to identify wasteful practices that don't make care safer. Responses were analysed using content and thematic analysis and the frequencies of practices mentioned were recorded.

**Results:** 665 survey responses were collected from 526 healthcare staff from all NHS regions. Four cross-cutting themes including 'not my job' and 'covering ourselves' were identified across the dataset which underpinned some of the reasons why healthcare staff perceived the practices to be of low-value. Using a smaller dataset of specific low-value practices, some of the most frequently mentioned categories of behaviours included 'duplication', 'paperwork', 'ward rounds' and 'incident reporting'. The most frequently identified practices within these categories included 'double-checking medication', 'completing hand hygiene audits' and 'intentional rounding'.

**Implications:** This study demonstrates that healthcare staff are willing to identify areas of low-value in healthcare. It also highlights a list of practices which require further investigation to determine if they are appropriate for de-implementation. The next stage of this research will involve working with healthcare experts to identify a target low-value practice by considering: the resource use, feasibility of de-implementation, health economic value and underlying evidence surrounding the practices. Once a target practice has been identified, interviews will be conducted with NHS managers to understand a) how feasible it would be to remove the practice from healthcare settings and b) how healthcare staff would feel if they were told to stop carrying out the target practice.

## Early Insights from The National Evaluation of The Children and Young People's Mental Health Trailblazer Programme

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**Background:** In 2017, the Department of Health and Department for Education published the *Transforming Children and Young People's Mental Health* Green Paper. This set out proposals for improving the services and support available to children and young people with mental health problems. In response to this, a national programme of 'trailblazer' sites has been developed; the first wave of the programme, which started in 2018, involves 25 'trailblazer' areas in England. This programme has several key elements, including: 1) incentivising the identification a senior mental health lead for educational setting; and 2) creating Mental Health Support Teams (MHSTs) to provide extra capacity for early mental health interventions and to promote good mental health and emotional wellbeing in educational settings. MHSTs are made up of teams of professionals, around half of whom will be Educational Mental Health Practitioners (EMHPs) – a brand new role in the NHS mental health workforce.

**Methods:** An early, mixed-methods evaluation combining quantitative and qualitative approaches is being undertaken to examine the development, implementation and early progress of the trailblazer programme across the first 25 2018-19 trailblazer areas. This has involved analysis of relevant trailblazer documentation; online surveys of educational settings and key trailblazer contacts and qualitative interviews with local, regional and national trailblazer stakeholders.

**Results:** There are a number of high level themes emerging from the research that have implications for the implementation and success of the programme. These include capacity and preparedness, local context of the programme, history of collaborative working and communication within and between organisations. Another key theme is the early challenges with recruitment and retention of MHST staff delivering the programme and spanning the boundaries between educational settings and the NHS. Finally, the MHSTs have had to make significant changes to planned ways of working due to the Covid-19 pandemic, particularly during school closures.

**Implications:** The trailblazer programme promises a number of significant innovations in children and young people's mental health, in particular with reference to workforce and professional development. The new EMHP roles and the MHSTs are relatively novel, posing interesting questions related to training, professional status and interactions between health and education as well as with existing NHS children and young people mental health (CYPMH) service professionals and teams. It is important that the processes through which these organisational innovations develop and their impacts are properly understood. Linked to this, because the programme is being rolled out in successive waves, timely early findings about the experiences of the trailblazer areas offers a valuable opportunity to inform subsequent waves of implementation. Finally, there remains a significant degree of unmet need amongst children and young people with respect to mental health service provision and so learning from this cross-sector collaboration between health and education will be key for supporting children and young people in the future.

## Do Public Inquiries Help Maintain/ Restore Trust in The NHS After a Scandal?

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**Background:** Scandals or controversies in health care are frequently followed by the launch of a lengthy and expensive public inquiry. The use of inquiries to address the political, psychological and sociological fallout of healthcare controversies has increased over time, yet there is little consensus on the effectiveness of the inquiry as a mechanism in achieving its aims. This presentation explores whether one of the aims of inquiries in the NHS, to restore trust, is being achieved.

**Method:** This is literature-based research at this stage, considering:

- the various trust theories and how they apply to the NHS;
- the procedures and effects of inquiries to see how far they go to address issues of trust;
- the implementation and review of recommendations.

**Results:** Trust is needed in the healthcare setting at many levels for the whole system to work effectively. The patient who trusts their healthcare provider (individual practitioner and organisation) is more likely to respond well to treatment and be more willing to seek care and utilise health services. Trust has a therapeutic effect, and makes the healthcare system more cost effective, through savings on supervision and regulation

NHS scandals can cause patient, public and staff trust to be lost or diminished. Whenever a scandal is uncovered the immediate reaction is often to call for an inquiry. The main functions of an inquiry are to investigate what happened, and to make recommendations to ensure the same situation does not occur in the future. The inquiry will have a number of aims, one of the main being reassurance – which involves restoration of lost trust. The way the inquiry is handled can help to make the process appear trustworthy, for example, if all the evidence is made public and the views of victims and their relatives are considered.

The inquiry will make recommendations to effect changes. One of the factors that promotes distrust of the NHS is that many of the same recommendations are being made in inquiries many years apart. There is often no follow-up to check that recommendations have been implemented, which seems to make the whole inquiry process a waste of time and money, and will create cynicism rather than trust. The inquiry process can be seen more as a public relations exercise than an effort to identify improvements to be made.

Recommendations often call for more legislation and regulations, but such measures may reduce trust rather than increase it. The public may feel that if healthcare practitioners need to be more closely regulated, that is an indication that they cannot be trusted.

**Implications:** There have been many and various scandals over the years, and no doubt this will continue to be the case, the handling of the COVID-19 pandemic maybe being the current one we are living through. Such inquiries are expensive, and often take a long time to complete. The way inquiries are conducted; the recommendations that are made; the method by which the recommendations are implemented and followed up can all make a big difference to the restoration, or otherwise, of patients' and the public's trust in the NHS. Public Inquiries do serve a valuable purpose but in order to obtain the maximum beneficial effect for the NHS, healthcare staff and patients there should be better management of the process, both before and after the inquiry itself takes place. Inquiries are still being set up on an ad hoc basis and a central NHS department to take control of the conduct and follow-up of inquiries would make the process more efficient and effective.

# Senior Leaders' Experiences of Using Analytics to Inform Strategic Decision Making with Implications Across Health and Care

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**Background:** Senior leaders make strategic decisions about the structure and delivery of health and care services. These decisions can have implications that cross organisational and sectoral boundaries.

Knowledge generated from the analysis of pseudonymised administrative health or care records (analytics) is increasingly recognised as key to informing strategic decision making for health and care. Its actual impact on decision making depends on how analytics are perceived and used by senior leaders. This study sought to capture if and how senior leaders' readiness to use analytics in decision-making contexts varies across health and social care organisations. This study also sought to advance understanding of what facilitates or hinders such analytics use.

**Methods:** Interviews were conducted with senior leaders of partner organisations of one London-based Integrated Care System (ICS). Eligible participants were responsible for strategic decision-making for their own organisation or their local health and care system.

Interview transcripts were analysed using the Framework Method to identify initial themes. Following this, a typology was created to identify and define different types of analytics users following Kluge's methodological steps. Types were informed by initial themes, i.e. individuals' own knowledge and interests in analytics; individuals' exposure to data and processes for obtaining analytics; and the health and care system.

**Results:** Interviews were conducted with 19 senior leaders in health and care provider, commissioning and public health roles. There was considerable variation in readiness to use analytics. Five types of analytics user were identified: "Advanced" (n=3), "Hands-On" (n=5), "Challenged" (n=5), "Reluctant" (n=3) and "Waiting" (n=3).

The "Advanced" user regularly collaborated with trusted analysts to obtain suitable analytics support to inform their use of analytics to make decisions. They viewed their strategic priorities as aligned with other leaders and organisations involved in decision making. This alignment facilitated their use of analytics as part of health and care decision making. "Hands-On" users also regularly used analytics but lacked collaborative working relationships with analysts and instead chose to request raw data and conduct their own analysis to support their decision making. "Advanced" and "Hands-On" users expressed few concerns around data quality or availability.

"Challenged" and "Reluctant" users were inconsistent and hesitant users of analytics. These users did not have aligned priorities across their health and care system, which hindered collective priority setting and analytics use. These users also struggled to access necessary data and sometimes perceived data accuracy and richness to be poor. "Challenged" users attempted to overcome these issues and work towards using analytics, in some capacity, to inform their decision making. In contrast, "Reluctant" users halted analytics use when faced with these challenges. Both users relied on "anecdotal information" and "professional judgement" when unable to use analytics.

"Waiting" users seldom used analytics but expressed a readiness to do so. They were hindered by separate data systems and a perceived lack of data richness and linkage. Instead, "Waiting" users were involved in setting up more sophisticated system-wide data systems they believed could facilitate their analytics use.

**Implications:** This study suggests that the interplay between three factors primarily influences senior leaders' readiness to use analytics: alignment of priorities across health and care; the person and their relationships, particularly with analysts; and perceptions around data quality and availability. In order for more leaders to become "Advanced" analytics users, priorities need to be aligned, relationships between leaders and analysts strengthened and confidence in data and its value improved.

Recognizing the variation in senior leaders' readiness to use analytics could inform the development of approaches to supporting leaders and embedding analytics in strategic decision making. It also suggests that organisational alignment is required to support optimal analytics use in decision making.

# Investigating Strategies to Enhance Sustainability Of Improvement Initiatives: A Multiple Case Study

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**Background:** As healthcare improvements are implemented, there is evidence that they are often forgotten, changed or replaced in practice. This means that many improvement initiatives show low rates of long term impact and fail to sustain to a point where their true benefits can be realised. While a number of studies provide information about the challenges encountered in attempts to sustain, very few identify or discuss strategies which support or enhance sustainability. With few studies focusing on actions and strategies, there is little direction or practical advice for researchers and practitioners seeking to influence sustainability over time. Therefore, there is a need to expand our understanding of what makes healthcare improvement initiatives sustain and how to support this process in practice. In complex systems, it is recognised that as challenges are encountered, systems and individuals respond and adapt to improve initiative design and characteristics necessary to maintain particular improvements. This means that solutions to problems often can't be imposed, as internal sensemaking and existing interdependencies guide healthcare teams to establish relevant actions and strategies. This 'self-organisation' creates lasting change as people make decisions and act to meet the specific needs of their unique setting. This study aims to explore how improvement teams take action and self-organise to sustain improvements in practice to uncover 'patterns of self-organisation' and strategies to enhance future initiative sustainability.

**Methods:** A longitudinal multiple case study design was employed to study four improvement initiative cases from initiative inception to approximately one-year post-funding (Table 1:Case Descriptions). All cases came from the Collaboration for Leadership in Applied Health Research and Care programme for Northwest London (CLAHRC NWL). A structured sustainability tool, The Long term Success Tool (LTST) was used quarterly throughout the initiatives (January 2016-April 2017) to collect perceptions of 12 sustainability factors as well as sustainability risks and actions. Observations (32.5 hours), interviews (n=38), a focus group (n=8) and documentary analysis were conducted to gain in-depth understanding of how teams influence sustainability through specific actions or strategies. A qualitative database was developed using Nvivo 10 to organise and analyse qualitative data from observations, interviews and documents. Thematic content analysis was conducted using a coding structure based on the Consolidated Framework for Sustainability Constructs in Healthcare. Individual case reports were drafted, and emerging themes highlighted areas of interest and enabled cross-case conclusions to be drawn.

**Results:** While multiple risks were documented, five common challenges representing ongoing issues in the cases are discussed: *workforce stability, initiative impact, organisational priorities, workload distribution and patient and public support*. These challenges required teams to recognise, respond and adapt continuously and resulted in the execution of a number of shared strategies and actions. Twelve strategies for navigating sustainability in complex systems are presented within four themes: recognising and utilising interdependencies, encouraging new interdependencies, facilitating sensemaking among stakeholders, and allowing for emergence of needs (Table 2).

**Conclusions:** Healthcare planners and staff need to thoughtfully consider how they can embed improvements in care. This study provides readers with an account of the actions and strategies taken to sustain in practice. While delivering improvements in care requires continual effort, this effort may be better understood and strategically planned for with the use of the findings presented in this study.

# Barriers and Facilitators to Using Quality Improvement Collaboratives in Improving Stroke Care and Their Effectiveness: A Systematic Review

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**Background:** To successfully reduce the negative impacts that people encounter when they have a stroke, the use of high-quality health and social care practices are needed across the entire stroke care pathway. Whilst there are many examples of good stroke care practices, they are not always shared across organisations. Quality Improvement Collaboratives (QICs) offer an unique opportunity for key stakeholders from different organisations to take part in a series of collaborative activities<sup>1</sup>. QICs enable stakeholders to share, learn and 'take home' practices, to support local improvement efforts. As stroke care delivery involves multidisciplinary teams, QICs could be an effective approach in driving the system-wide change for stroke planned as part of the NHS Long Term Plan<sup>2</sup>. This review aimed to explore the barriers and facilitators to using a QIC and their effectiveness in improving stroke care.

**Methods:** Five electronic databases (MEDLINE, CINAHL, EMBASE, PsycINFO, and Cochrane Library) were searched up to June 2020, and references lists of included studies and relevant reviews were screened. Studies were included if they involved multi-professional stroke teams participating in a QIC, and were conducted in an adult stroke care setting. Study characteristics, QIC components, and outcomes were extracted from included studies by one reviewer and checked by a second. For overall effectiveness, a vote counting method was used. Data regarding barriers and facilitators to implementing improvements in stroke care when using a QIC was extracted and mapped to the Consolidated Framework for Implementation Research (CFIR)<sup>3</sup>. This data was then synthesised for each relevant CFIR construct using thematic analysis.

**Results:** Twenty papers describing 12 QICs were included. Studies were conducted in the USA, Europe, Australia and Taiwan, between 2005 and 2020. QICs varied in their setting (e.g. hospital-based), part of the stroke care pathway (e.g. acute/urgent stroke care), and their focus (e.g. improving thrombolysis treatment and screening rates). Nine QICs found that participation was associated with successful implementation of improvements. Key facilitators were inter- and intra-organisational communication and networking, positive feedback mechanisms, leadership engagement, sufficient time and resources to participate in the QIC and engage with local improvement efforts, and access to knowledge of best practice and quality improvement methods. Key barriers were staff turnover and changes to stroke service structure during the QIC, a lack of organisational support and prioritisation of improvement activities, limited access to patient data tools, and effort associated with collaboration. There was very little to no consideration given to patient and carer involvement or health inequalities in the studies.

**Implications:** This is the first systematic review exploring the use of QICs in implementing improvements in care for stroke patients.

- Current evidence suggests that QICs are associated with achieving improvement in stroke care, and so could be used to implement the planned system-wide changes.
- Factors identified as influencing improvement success in stroke have been found in the implementation literature for other clinical areas.
- Longer-term evaluations are needed to further explore whether improvements are sustained when QIC support is withdrawn.
- A lack of patient and carer involvement and consideration of health inequalities in studies using a QIC to improve stroke care was apparent.

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# Collaboratively And Rapidly Developing Processes to Improve Healthcare: A Methodological Approach and Case Study

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**Background:** Process improvement for healthcare services focuses on specifying, testing, and refining underlying processes for delivering care – rather than, as in the case of clinical guidelines, defining ideal clinical standards. However, practical methods to facilitate the specification of process improvements rapidly, remotely and at scale need further development. The deficiencies in some of the current infrastructure for process improvement have been vividly surfaced by the COVID-19 pandemic. The scale and speed of innovation in response to the pandemic has been impressive, but some of these changes may reproduce challenges previously identified in the field of quality improvement: the development of suboptimal solutions due to lack of input from certain areas of expertise; and wasted effort as organisations each try to develop their own solution in isolation. One way to address this challenge is by developing large-scale collaborative approaches for generating evidence for process improvements that enables inclusion of many perspectives and sourcing of expertise that may not always be available to local health services. Accordingly, we developed an approach for engaging diverse stakeholders remotely in consensus-building specifications for improved processes. We deployed the approach in a case study to specify process improvements in a specific area of pressing need during the COVID-19 pandemic.

**Methods:** Informed by a participatory ethos, crowdsourcing and consensus-building methods, we organised our proposed methodological approach into a framework with five steps: (1) define scope and objective; (2) produce a draft or prototype of the proposed process improvements; (3) identify participant recruitment strategy; (4) design and conduct a remote consensus-building exercise; (5) specify the process improvements.

We tested the approach in a case study that aimed to specify process improvements for the management of obstetric emergencies during the COVID-19 pandemic. To elicit initial recommendations, we used a brief video illustrating possible processes improvements. Two Delphi rounds were then conducted to reach consensus on recommendations.

**Results:** We gathered views from 105 participants, including representatives from maternity care (n=36), infection prevention and control (n=17), and human factors (n=52). The participants initially generated 818 recommendations for how to improve processes illustrated in the video. These were synthesised into a set of 22 recommendations. The consensus-building exercise was completed in six weeks and generated a final set of 16 recommendations. These were used to inform process improvement specifications and develop supporting resources, including an updated video and infographics that were disseminated across the UK, in collaboration with various stakeholder organisations, including the Royal College of Midwives and the Royal College of Obstetricians.

**Implications:** The proposed methodological approach was used successfully during pandemic conditions to build consensus among different stakeholder groups on process improvements for managing an obstetric emergency in women with suspected or confirmed COVID-19. A particular strength of the approach is its ability to support mobilisation of the expertise and ingenuity of people in healthcare systems, helping to enhance the currently limited infrastructure for collaborative building of specifications for process improvement in healthcare services. The approach has the potential to address many current challenges in process improvement, but will require further evaluation.

## More information and resources:

- THIS Institute. COVID-19: managing an obstetric emergency. <https://www.thisinstitute.cam.ac.uk/research-articles/covid-19-managing-an-obstetric-emergency/>
- THIS Institute. Consensus-building on obstetric emergencies. <https://www.thisinstitute.cam.ac.uk/research-projects/consensus-building-obstetric-emergencies/>
- Managing obstetric emergencies in women with suspected or confirmed COVID-19. <https://youtu.be/NX5L7BO3gW0>

## Developing and Implementing Care Standards for the Emergency Department

Anna Sussex  
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**Background:** In 2018 a suite of care standards for different aspects of emergency care were designed based upon the insights and perspectives of those involved with the delivery of emergency care, such as front-line staff. This work was described at the HSR conference in 2019, and this twelve-minute presentation describes the implementation of these standards, how they are used, and related challenges and improvements to services.

**Methods:** The approach utilised for this work is known as CAREMORE®, a collaborative approach to facilitate clinically-led improvement.

**Results/ Implications:** This presentation describes the work undertaken since the last HSR conference, particularly the implementation of a series of care standards. It also considers the potential of the consistent use of clinically-designed care standards in the Welsh context, and how this work can synthesise and connect otherwise disjointed care services across Wales.