DEVELOPMENT OF A PERFORMANCE MANAGEMENT FRAMEWORK FOR FACILITIES MANAGEMENT IN THE CONTROL OF INFECTIONS – AN OUTLINE OF METHODOLOGY

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The paper is based on an on-going PhD research project, which is aimed at developing a conceptual framework for managing the performance in for facilities management services in the control of Healthcare Associated Infections (HAI). First, this paper argues the need for a performance management framework (PMF), providing a review of Scottish guidelines, which were written to probe the need of a performance management framework in controlling HAI, as an evidence-base. The crux of the paper is to present the methodological framework used to achieve the aims and the objectives of the research project. The methodology being employed for the study is a combination of quantitative and qualitative approach. However, the study attempts to relate the ultimate aim of the project, which is the proposed PMF, to the national framework in order to avoid any duplication. The implementation of a successful PMF needs careful consideration of a host of challenges which impinge on staff and process performances. The main challenges, in view of this particular study, include segregation of clinical and non-clinical practices, cultural issues, deficiency of resources and lack of evidence based standards. These challenges could be overcome, by better integration, raising the awareness of an importance of open culture, developing resource plans and deriving standards through surveillance and research.

Keywords: Facilities management (FM), Healthcare Associated Infections (HAI), Infection control, Performance Management Framework (PMF)

INTRODUCTION

Healthcare Associated Infections (HAI) by definition means 'infection was neither present nor incubating at the time of admission but has developed during the course of a stay in hospital or other facility' (Scottish Executives Action Plan, 2002). HAI directly affects the patient, their carers and employees through severe or chronic illnesses, pain, anxiety, depression and longer stay in hospital. It also reduces productivity and earnings and sometimes causes death (Public Health Laboratory Service, 2000). Treating HAI imposes an additional burden on hospitals and results in additional costs to healthcare and community services. This paper is based on an on-going PhD research project, which is aimed at developing a conceptual framework for managing the performance of FM services for infection control. The study focuses only on analysing the existing system of infection control in the National Health Service in Scotland (NHSS). However, different infection control strategies of other countries will be taken into consideration when developing the framework.

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IDENTIFYING THE NEED FOR A PMF

Review of Scottish Guidance

The research on which the paper is based, focuses on the NHS Scotland (NHSS) context in particular. Hence, it is worthwhile understanding the need for a performance management framework in the control of HAI in the Scottish context. In recent years, many Scottish guidelines and reports have emphasised the importance of a Performance Management Framework in the control of infection. The Scottish Health Plan 'Our National Health' (2000), which has given priority to the setting and monitoring of national clinical standards for NHSS, has extended the remit of CSBS (Clinical Standard Board of Scotland, presently known as Quality Improvement Scotland - QIS) to set standards for clinical services. According to the report CSBS has to implement a system for assessing performance throughout NHSS against the said clinical services standards, and has to publish the findings as a feedback mechanism. They call this system a CSBS quality assurance and accreditation system. The Scottish Health Plan, therefore, has highlighted and has already implemented a framework for assessing the performance, primarily of, clinical services. This CSBS's quality assurance and accreditation system comprises the following processes:

- setting standards
- self-assessment of performance locally in relation to CSBS standards
- undertaking external peer review of performance against those standards
- reporting findings

The Glennie report (2001) on 'decontamination of medical devices' which is a primary concern in the area of infection control, has specified the importance of developing an action plan to ensure that the appropriate arrangements are in place to oversee and improve, where necessary, decontamination processes. As per the report the action plan should undertake an audit of decontamination practices to address any issues of potential risk to staff and/or patients and make an assessment of the age and condition of decontamination facilities and equipment in both central and local decontamination units. Further, the report emphasizes the need for a 'fast track review' process which allows the identification of deficiencies in processes in relation to key standards or requirements and to define measures to achieve compliance with key standards with defined time scale. On the whole, what this recommends is a performance review framework which has:

- a clear plan of actions to be undertaken in the decontamination process,
- a fast track review process which includes an audit of decontamination practices to ensure compliance with standards and deficiencies

On the whole, both aforesaid reports, i.e. Scottish Health Plan and Glennie report, however, have not mentioned the significance of a corrective plan of action which could be used to revisit and manage the performance of the processes of infection control. The Carey Group report (2001), which discusses the steps of managing risks in terms of HAI, has also underlined the need for a comprehensive framework for managing risks in terms of HAI. Further, it emphasises the importance of a common approach to promote an organisational culture which actively seeks openness and sharing of information on managing risk.

HAI emerged as a principal concern in NHSS after the Salmonella outbreak in Victoria Infirmary in the year 2001. The working group led by Dr. Brian Watt (Scottish Executive Health Department, 2002), which was assigned to oversee the outbreak, came up with several recommendations, in 2002, emphasising that there is a need for a performance management framework to facilitate effective feedback of the process of infection control. As to the Chief Medical Officer's letter (CMO) of September (2003), a major programme of work was laid out in the Scottish Executive Health Department's (SEHD) ministerial action plan on HAI to improve the prevention and control of HAI across the NHSS. This programme is now being actioned by the Scottish HAI Task force, of which the Chief Medical Officer is the Chair. The HAI Task force is both overseeing existing work in progress and commissioning several new working groups to address the many tasks specified in the action plan. Their target is to achieve reliable, repeatable, and acceptable levels of control over HAI within a minimum of three years. For the task force, multidisciplinary groups which consist of experts who are specialised in particular areas of concern are mandated to produce and review policies, guidelines and standards on HAI related issues. This is a major step towards a strategic infection control perspective which fits with wider societal values and expectations. This HAI task force has assigned a group to administer the development of a performance management framework in order to assess the process of infection control.

Development of a PMF – Focus area of the Project

As aforementioned, many Scottish working group reports have identified the importance of a performance management framework in controlling HAI (Carey Group Report, 2001; Kennedy Report, 2002; Glennie Report, 2001; Watt Report, 2002; Scottish Health Plan, 2000). Nevertheless, none of these reports takes an FM perspective, although it has an essential role in the control of HAI. It is not the fact that the NHSS has not acknowledged the role of FM services. FM services are gaining greater recognition in the control of HAI. Yet, the primary concern is still towards the clinical services. The PMF to be developed in the current study, therefore, will give due cognisance to FM. Further, in this study, the area of FM will be divided in to two parts (figure 1). Firstly, the study will look into the extent of application of infection control standards for facilities planning and construction during new builds or refurbishment projects. Secondly, the study will explore the context of FM services and challenges associated with measuring and managing performance during the building occupancy stage. FM during the building occupancy stage will focus both on in-house and outsourced FM services to recognise any divergence of practices. Although there are myriad FM services to be considered in the control of HAI, domestic service function (cleaning) will only be taken in to consideration in this particular study. Overall, the development of the aforementioned PMF will be made up of two parts: one will be a PMF which can be used for design and construction of healthcare facilities and the other PMF will be for managing facilities services (specifically domestic services) during the building maintenance stage. These two divisions, i.e. design and construction of healthcare facilities and domestic services, albeit, are complementary to each other. It is important to design an environment that is easy to keep clean and dry since 'cleaning' is crucial to avoid HAI (Mehtar, 1992). Minimising opportunities for dust and moisture accumulation and maximizing opportunities for cleaning of inanimate surfaces (and animate surfaces, e.g. hands) are key considerations in planning and design of new healthcare facilities (Queensland Health, 2001). According to the National Health and Medical Research Council and

the Australian National Council on AIDS (1996), routine cleaning of the health care premises can be carried out much more efficiently if the design of the building is adapted to its function. Hence, functional design of healthcare facilities allows effective cleaning of facilities. Conversely, effective cleaning services (domestic services) enhance the state of the 'built environment'. As indicated by Ayliffe, Babb and Taylor (1999) regular and efficient cleaning is necessary to maintain the appearance, structure and function of healthcare buildings and their contents. Therefore, properly designed healthcare facilities allow the FM services staff to carry out cleaning practices effectively and, on the other hand, proper cleaning practices allow for effective maintenance of state of the healthcare facilities.

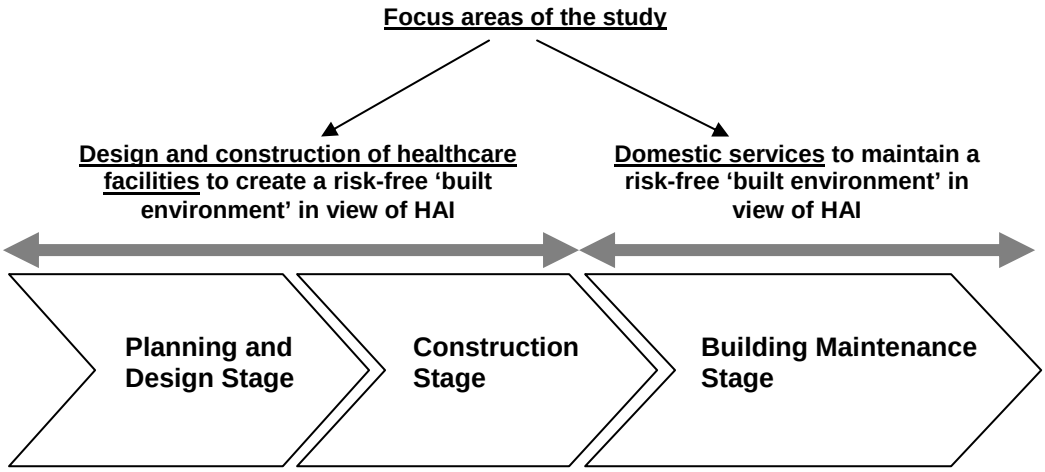


Figure 1: Focus area of the study

PROPOSED METHODOLOGICAL FRAMEWORK

The selection of a suitable research methodology is vital in any research to attain the goals aptly. At the initial stages, an extant literature review was undertaken in the general area of HAI. The variety of sources of literature consulted included electronic documents, journals, books, conference proceedings, reports and guidance documents produced by National Health Services in UK and other countries. Informal interviews and discussions with experts (sample - twenty-five) in infection control in National Health Service in Scotland (NHSS) were also carried out concurrently as a pilot study. The experts were selected from several professional categories who are actively involved in infection control. They range from healthcare managers, microbiologists, infection control nurses, facilities managers to construction professionals. These discussions offered useful insights into the current context of infection control in the NHSS. A combination of research strategies is planned to be used to execute the main study in order to avoid any gaps in terms of validity, reliability and generalisability of results to be obtained (figure 2). It is also intended to attain the participation from many professionals and staff for the main study to set a holistic view of the state of infection control in FM services. The target groups for the main study will be (figure 3): *Strategic Level* (Director of Facilities, Chief Executives, Managers of NHS Health Boards); *Tactical Level* (Facilities Managers, Assistant Facilities Managers Infection control team members, Architects); *Operational Level* (Domestic Supervisors, Facilities Services Staff)

Figure 2: Research methodology framework

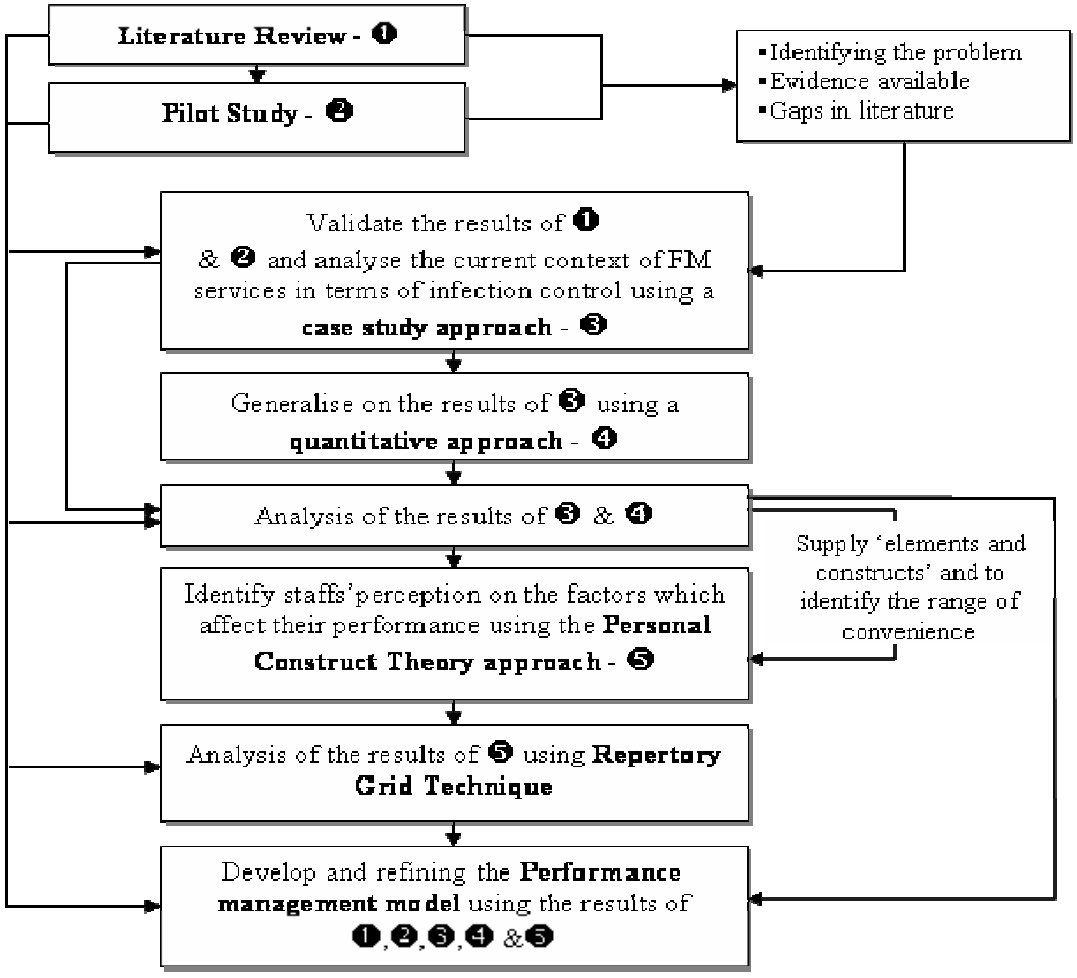
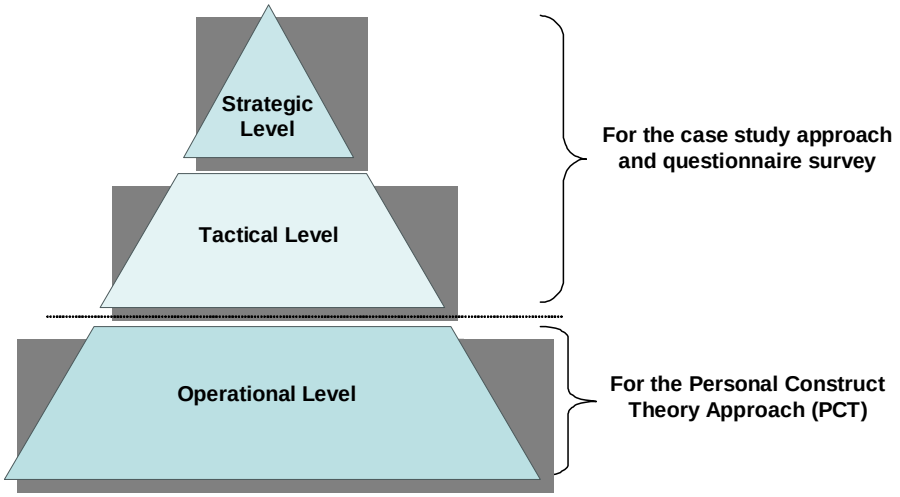


Figure 3: Target groups of the research study



A case study approach will be used at the initial stages to identify the key performance measures used in infection control practices. The case study approach is mainly divided into two parts. It was identified from the literature review that the application

of infection control standards is comparatively less during the design and construction stages due the cost of involvement and lack of mandatory and evidence-based guidelines of infection control for contractors and infection control professionals. Therefore, the first part of the case study approach will look at the extent of application of infection control standards for new builds and for refurbishments. Secondly, it will explore the context of FM services and challenges associated with measuring and managing performance during the building occupancy stage. It will focus on both in-house and outsourced FM services to recognise any divergence of practices. A questionnaire survey will be adopted to generalise the results obtain through the two parts of the case studies. The target groups of the study will be facilities managers and construction professionals (mainly architects and engineers who are involved in the design of hospitals and supervision of construction). The data obtained through the case studies and questionnaire survey will be analysed using the NUD*IST software and SPSS (Statistical Package for Social Sciences) respectively. The results will be used to evaluate mainly the; practical difficulties encountered by facilities managers, and construction professionals in the control of HAI; use of performance management approaches by facilities managers and construction professionals, in order to assess the accomplishment goals of infection control;; and, the level of integration between parties (clinical and non-clinical; non-clinical includes facilities managers, facilities services staff and construction professionals) in planning, implementing and performing infection control practices.

The study will then exploit Personal Construct Theory (PCT) to identify the challenges associated with performance of people before devising the performance management framework. The unique feature of Personal Construct Theory, which was introduced by George Kelly (1955), is that it considers people as scientists. They experience the world around them by constantly forming and testing hypotheses about the world (Kelly, 1955). According to Stewart (2004) through people's experiences they develop a very complex model of the world and their place in it. As Kelly asserts this model represents their personality. In the theory of personal constructs, Kelly develops the aforementioned principle further. For example, one considers whether and how he/she modified his/her constructs when faced with contradictory information. Also, one considers his/her 'core constructs', which are deeply held values and principles that are unlikely to change (Stewart, 2000). As Beven (1995) affirms, the basis of PCT is that people are all different with differing construct systems, which means they all construct and interpret events differently. It is widely accepted that people's personality can influence their work performance and adjustment to their jobs. Sometimes, successes or failures on the job cannot be attributed to the amount of a person's intelligence or mechanical or technical skills, but to personality characteristics. Beven (1995) asserts that PCT has the potential to help with self assessment, e.g. to reach an indication of how individuals discriminate between work roles; and to encourage tolerance in a group of others ideas and values (PCT is based upon the premise that people construct their own version of events. This becomes explicit in the process, and provides an opportunity for sharing different ideas and values). Due to the fact that this particular research study attempts to develop a performance management framework, at the end, for FM in order to control HAI, it is essential to explore issues which could affect people's performance. Exploitation of PCT is useful in this respect as a means of exploring the challenges and opportunities which can hinder or boost performance of facilities services staff, respectively. The information obtained from the case studies and quantitative approaches will be used to elicit the issues of performance in order to proceed with PCT. A repertory grid

technique method will be used to scrutinise the results. The Repertory Grid is an instrument designed to capture the dimensions and structure of personal meaning. Its aim is to describe the ways in which people give meaning to their experience in their own terms (Feixas and Saul, 2000). The information attained from all three approaches, i.e. case study approach, questionnaire survey and PCT, will be used to develop the performance management framework for FM in controlling HAI. The proposed PMF will attempt to stipulate the following:

- set up clear standards for FM
- education and training programmes for FM services staff and construction professionals
- clear lines of accountability and clear lines of authority
- meaningful framework for measurement: measuring what is essential not what is easy to measure
- clear lines of communication with infection control teams and other clinical staff members - enhancing collaboration, integration and sharing of knowledge
- public involvement (patient satisfaction surveys)
- supervision and monitoring
- identify strengths and areas of improvement
- feedback mechanisms

Avoiding Reinventing the Wheel

One of the key recommendations of a consultation document produced by the Scottish Centre for Infection and Environmental Health (SCIEH) entitled 'Developing a model of infection and communicable disease control in Scotland' was the need to develop an infection control performance management process. However, rather than developing an isolated process of performance management they suggested including the infection control performance management process into the national performance assessment framework (PAF). During the consultation of the SCIEH document, sixty four percent (64%) of the participants (Kennedy Report, 2002) including chief executives, clinical professionals and other key personnel involved in infection control in NHSS health boards and trusts responded that inclusion of the infection control performance management process into the national PAF would have a positive impact on infection control in Scotland. Eleven percent (11%) noted that it will have a negative impact, nineteen percent (19%) were unsure and six percent (6%) had no view on this. According to the results it could be seen that there is an overwhelming endorsement for the recommendation of including the performance management process of infection control into the national PAF. The national PAF, which is known as NHSS performance assessment framework, is analogous to the PAF developed by the NHS Estates (in England) in the year 1999 (NHS Estates, 1999). The PAF, which is developed by the NHS Estates in England, is based on the balanced scorecard approach. According to NHS Estates (1999) the use of the balanced scorecard allows organisations to get a more rounded view of performance by identifying different key elements of performance and understanding how changes in them may have implications for others. The PAF highlights six areas of performance which, taken together, give a balanced view of the performance of the NHS: health improvement; fair access; effective delivery of appropriate health care; efficiency; patient/carer

experience; and health outcomes of NHS care. Currently, both the PAF used in NHS England and NHS Scotland do not give much attention to infection control as part of their performance assessment. In addition, they do not consider the performance of FM services in the control of HAI. Even so, the PAF is supported by a set of national headline NHS Performance Indicators (e.g. access, mental health, diabetes, cancer, coronary heart disease, etc.). However, further progress is needed to extend the coverage of these priority areas so that the headline set presents a more balanced picture of NHS performance. The current research would endeavour to identify the strengths and areas of improvement for the national PAF and will attempt to relate the proposed PMF, for FM services in the control of HAI, to the national (NHS Scotland) PAF (figure 4).

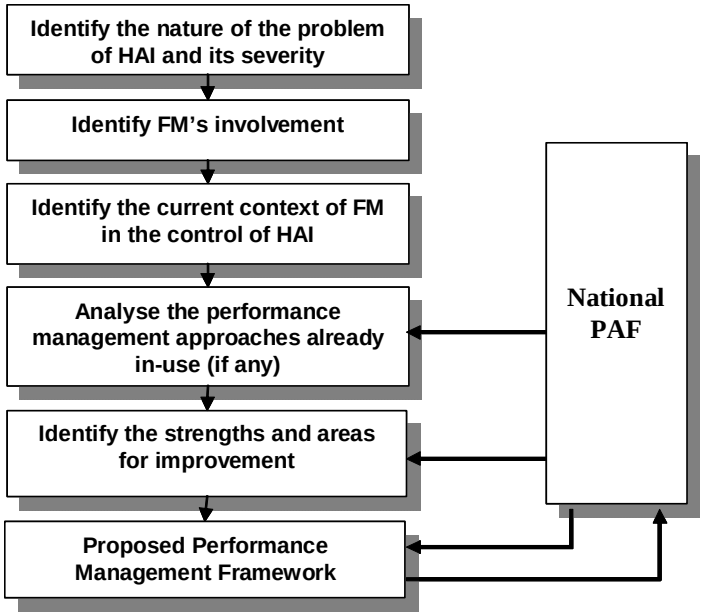


Figure 4: Development of the PMF for FM services in the control of HAI

Challenges & the Way Forward

Through the literature review conducted as part of the current research it was evident that there are some challenges which could impinge on the effective implementation of a performance management framework. The main challenges include segregation of clinical and non-clinical practices, cultural issues, deficiency of resources and lack of evidence based standards. Both clinical services and FM services (non-clinical services) have significant roles in infection control, thus, dedicated infection control resource cannot influence the prevention and management of infection control by working in isolation. To be effective, it has to work with and through better integration of all the clinical and non-clinical teams. This could improve communication and coordination among staff members and will allow the staff and management to share their ideas and experiences. Through this culture of openness both top management and staff will be alerted immediately on any emergencies in order to take prompt action. This 'open culture' will also enhance patient-focused care by reducing fragmentation of work. Other major issues in poor performance are inadequacy of resources in terms of staff, insufficient infrastructure or insufficient allocation of funds. Too often, FM services take the back seat, especially, when it comes to resource allocation. This is reflected in the view of the Auditor General Scotland (2000), as he notes, "there is a general pressure to reduce expenditure in lower priority, non-clinical

areas". This results in high staff turn-over, absenteeism from work, and lack of skills (insufficient training). This needs to be addressed by means of offering job security, instigating rewards schemes, conducting training and development programmes for the FM services staff. There should be mechanisms in place to assess annual budget of hospitals to facilitate the budget setting process specifically for infection control. Resource plans are required to respond to the identified training and development needs of staff so as to be competent in matters of infection control and to review the adequacy of staffing and infrastructure arrangement for infection control. Apart from the above, deriving evidence based standards through successful surveillance and research is a must in the present context, especially to reduce risk of effective implementation.

CONCLUSIONS

Complete eradication of HAI is an unattainable task due, in part, to the increase use of invasive procedures, complex medical technologies and use of antibiotics. However, national health services worldwide should try their best to minimize the risk of infection. One way of achieving this is to introduce an efficient and effective way of reviewing and revising the healthcare system to meet its changing needs. This can be done through the development and implementation of a Performance Management Framework (PMF). Many Scottish reports have identified the need for the PMF; however, none of these reports takes an FM perspective although FM has an essential role in the control of HAI. The PMF to be developed in the current study, therefore, will give due cognisance to FM. A combination of qualitative and quantitative research methodologies are adopted for the study in achieving the aim of developing the framework. The main research methods include a case study approach, questionnaire survey and personal construct theory approach (PCT). Through this mixed method approach the research will endeavour to address the methodological issues such as validity, reliability and generalisablity of the results to be obtained. When developing the PMF, to avoid re-invention of the wheel, the current research will endeavour to relate the proposed PMF to the national performance assessment framework of NHSS. The implementation of a successful PMF needs careful consideration of a host of challenges which can impinge on staff and process performances. The main challenges, in view of this particular study, include segregation of clinical and non-clinical practices, cultural issues, deficiency of resources and lack of evidence based standards. Most of these challenges could be overcome by better integration, raising the awareness of an importance of open culture, developing resource plans and deriving standards through surveillance and research.

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