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Process performance indicators in redesigning the patient care process

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Acknowledgements:
The authors express their sincere appreciation of the editorial input provided by Michael Bouy.

Abstract:
Purpose
– The purpose of this paper is to investigate the regulator’s attempt at redesigning the patient care process (PCP) – a core business process in public hospitals – by introducing dichotomous process performance indicators as an innovative management tool intended to align the State health care policy with the everyday management of operations at a hospital ward.

Design/methodology/approach
– The paper presents an ethnographic case study of redesigning the PCP according to the strategy originating outside the organization. The study employs competing theories that represent alternative epistemological and ontological views of the world in order to produce a tentative explanation of why the intended redesign of the PCP has not fully eventuated. Observational data and opportunistic interviewing are used to answer the research question of whether and how the information and operational flows on the ward were affected by introduction of process performance indicators. A business process redesign framework was employed for data analysis since it better reflects the objectives of the State-wide initiative and offers a convenient tool in dealing with data complexity.

Findings
– Introduction of the process performance indicators did not result in redesigning of the PCP as intended by health care authorities. Out of four process performance indicators, only one was consistently implemented, which merely produced a duplication of the previously collected information, therefore adding no value to the PCP. On a theoretical level, the results indicate that the emergent theory rather than the rational agent theory demonstrated a greater fidelity to the empirical observations.
Originality/value

– The paper assessed the feasibility of using innovative dichotomous process performance indicators as a tool for redesigning the business process at the ward level, in order to achieve macro-level policy objectives. The failure to successfully implement a top-down universal approach to redesigning business processes in health care is likely to reflect a lack of appreciation of emergent rationality that characterizes essential aspects of the PCP.

Keywords:
Australia, Hospital management, Health care, Service delivery systems, Process redesign, Process performance indicators, Ethnographic case study

Type:
Research paper

Publisher:
Emerald Group Publishing Limited

Article

1 Introduction

In Australia in 2001, the State of Victoria Department of Human Services (DHS) introduced an innovative effective discharge strategy (EDS) that aimed to “further enhance and consolidate discharge improvement processes in public hospitals” in order to “improve continuity of care for patients by improving communication and integration between hospitals and community” (Metropolitan Health and Aged Care Services Division, State of Victoria DHS, 1998). The EDS was a statewide project of integrating health care delivery introduced to public hospitals over 2001-2004. The strategy directly targeted operations performed at the ward level by outlining the tasks that need to be performed at particular stages of providing patient care within given time limits in order to improve effectiveness of patients transfer across different health care facilities. The EDS effectively aimed at streamlining the horizontal flow of activities performed by members of a multi-professional hospital team. Although the EDS was not promoted as an attempt at redesigning the operational processes, it can be viewed as such since, as argued further in the paper, it has many essential features of a business process reengineering (BPR) project (Grover and Malhotra, 1997).

The EDS also introduced a new type of process performance indicators (PIs) that, unlike the conventional PIs that are based on quantitative measures of outcomes, were concerned with whether a particular task was performed and therefore measured in a dichotomous (yes/no) variable.

The need for intervention at the level of wards’ everyday activities arose from the incomplete integration of delivery of health care in state-funded public hospital and public and private health care facilities in the community. On the one hand, some essential health care previously provided in the hospital both before, during and after admission is now provided in the community, which turned hospitals into a specialized component of the broader health care system (Newhouse, 1993). This shift necessitated an integrated approach to the planning and delivery of services to ensure continuity across organizational boundaries. On the other hand, the Australian reimbursement scheme (medicare) continued the historical separation of payment for medical services
(commonwealth) and payment for hospital services (public by states, and private by private health insurances and individuals). The 60 or so different funding streams provide barriers to continuity and coordination of care (Cunningham, 1997).

The object of this case study is the patient care process (PCP), a core business process of a neurosciences ward of a large teaching public hospital in Melbourne, Victoria, Australia. The PCP is defined as a social process, comprising a sequence of activities that uses human, physical (e.g. beds) and IT resources to manage patients' progression from admission to discharge. All aspects of the PCP are interrelated in a complex systemic fashion, in that information flow enables operations that in turn generate information outputs. Operations present a sequence of purposeful activities carried out by ward staff according to their individual or shared interpretation of organizational objectives. Integrated services provision implies integrated information flow shared by members of multi-professional teams within the hospital and across the network of associated health care facilities.

This objective of this study is to use the occurrence of the new process PIs to investigate whether and how the introduction of the dichotomous process performance measures affected the behavior of the multi-professional members of the neurosciences ward and subsequently, the PCP. This objective is achieved through exploring the actual managerial situation in order to test two competing theories belonging to the opposite sides of ontological and epistemological divide – the rational agent theory (Pfeffer, 1982) and the emergent theory (Markus and Robey, 1988) – in order to find a tentative theoretical explanation of why the process PIs were not implemented according to DHS intentions. The method of ethnographic research (participant observation and opportunistic interviewing) was used to address the study objective (Geertz, 1973).

The contribution of this paper is twofold: first, it informs organization managers and public officials about the feasibility of using universal dichotomous process PIs as an instrument for redesigning the business process at the ward level in order to achieve macro-level policy objectives and second, the results of this case study suggest that in order to improve the probability of success of a business redesign project managers should be prepared to critically assess whether the expected behavior of the participants of the PCP is better justified by the assumptions of the rational agent theory or the alternative emergent theory. The answer to this question would then guide the approach to redesigning the PCP in order to achieve the desired policy objective.

The paper is organized as follows: the background section presents the types of PIs and outlines their role in public health care; the next section outlines the alternative theoretical frameworks for answering the research question of whether and how the introduction of the process performance measures affected the PCP; this is followed by a methodology section, and a description of the study setting. The results section provides an answer to the research question of whether the EDS was successfully implemented. This part is organized according to the stages in the PCP and the sequential tasks that comprise the “phases” of the EDS. This section is followed by evidence of the external validity of the study findings. The section titled “analytical exploration of the study results and theoretical generalization” provides a “thick description” of the organizational agents’ activities and motivations and, drawing on the assumptions of the competing theoretical frameworks, offers some explanation of why the EDS was not implemented as intended. The summary of the research findings is presented in the conclusion section which also offers practical recommendations towards redesigning the PCP.
2 Background: PIs in health care

The increasing use of PIs in public health services in the 1990s has been related to the proliferation of IT, demands for increased accountability of public services and professionals and increased pressure to ensure that public finances are spent efficiently (Bird et al., 2005). With limited market mechanisms regulating public health care system in Australia, outcome measurement and monitoring has been accorded a central role in securing hospitals' compliance to the overall health policy objectives. From the governments' perspective public hospitals are typically viewed as “black boxes” that are expected to respond to a complicated set of financial and administrative regulations in order to fulfill the public health policy objectives. In this context the value of PIs is in their ability to:

- secure government control of semi-autonomous health care providers to ensure compliance with system-wide objectives of efficiency, effectiveness and equity;
- ensure accountability of health organizations and members of the medical profession to a range of external stakeholders, including the general public, patients and independent regulatory bodies; and
- provide a means for comparison of the same organization over time and between similar organizations.

Production control theory distinguishes the control activities with a global scope, which in implication to the public health sector corresponds to the governments' strategic policy perspective, and a local scope, corresponding to a production unit or a hospital ward. At the ward-level control activities (e.g. maintaining the targeted bed occupancy rate, reducing the waiting list) are frequently complimented by activities that help health practitioners and managers to identify opportunities for personal and organizational improvement (e.g. conforming to safety regulations and continuous quality improvement initiatives). These activities are invariably context specific and rely on engagement of the members of the multi-professional team working on the ward (Section 4 elaborates further on this issue). There is a view in the literature that outcome PIs better suit the strategic policy perspective, while from the production unit perspective, process PIs provide more information to the managers responsible for operations on the ward (van der Bij and Vissers, 1999). Table I summarizes the PIs identified in the literature and how they are used in public health.

For example, over 2001-2004 the DHS developed and implemented a program, called the demand management strategy, which consisted of financial, administrative and performance assessment measures aimed at efficient provision of hospital services and simultaneous improvement of quality. The program targeted emergency and elective services by introducing strategic global PIs that assessed the following quantitative outcomes: number of ambulance “bypasses” per month percentage of emergency department presentations admitted according to their category of urgency and percentage of category one elective patients admitted within 30 days that reflected the strategic objectives of public health care provision.

Hospitals met the objectives of the demand management strategy by means of reorganizing resources and restructuring the organizational divisions, linking organizational plans to the strategic plan and monitoring and benchmarking the organizational level PIs. There is evidence in the literature that outcome PIs exogenous to public hospitals can secure the desired changes in measured aspects of service provision because senior managers and practitioners are able to interpret outcome PIs as clear preferences in terms of policy and funding priorities, whether or not they agree with those priorities (Bird et al., 2005).
The EDS was introduced at the same time as the demand management strategy with the intention of improving the continuity of care (i.e. ensuring that patients are discharged on time and to the appropriate destination). However, if implementation of the demand management strategy relied on the conventional use of quantitative outcome PIs, the implementation of EDS relied on the introduction of innovative dichotomous process PIs that, unlike the conventional process PIs outlined in Table I, were meant to be universal rather than context specific. Figure 1 shows the DHS approach to governing hospitals by means of outcome PIs and process PIs.

Figure 1 shows that the system-wide objectives of the demand management strategy form exogenous inputs that allow hospitals to choose how to best adjust their organizational structure and business processes to convert inputs into outcomes. The PCP within the “black box” remains invisible for the DHS. Performance is assessed in terms of the quantifiable performance measures and hospitals are either rewarded for meeting the performance targets or penalized for the lack of achievement. On the contrary, the EDS adopts a process view of the hospital and employs the universal process PIs to assess whether specific tasks have been performed at particular stages of the PCP and within the prescribed time limits. It is noteworthy that while the aggregated data for assessment of conventional outcome-based PIs (e.g. throughput and admission targets), are available from the hospitals’ databases and are easily converted into rates and proportions, the dichotomous (yes/no) process PIs can only be obtained from patients’ medical records and that would require an audit.

Thus, the EDS surpassed the government predominant approach of treating health care organizations as “black boxes” that independently align their internal processes according to the set of objectives and/or exogenous constraints and attempted at redesigning the core business process by direct control over the operations at ward level by means of exogenously determined rules. While strategic outcome PIs indirectly affect the behavior of health care professionals, the innovative universal process PIs attempt to exercise direct control over activities of clinical staff that comprise the PCP. The following sections will answer the research question of whether and how the PCP was influenced by this innovative managerial initiative.

3 Theoretical framework

The implicit assumption of the EDS seems that hospital staff would react in a rational way to the set of exogenous inputs. This approach is known as a value-maximizing model of rational choice that assumes that organizational actors decide on value-maximizing activities prospectively and according to a set of consistent preferences (internal rationality). An alternative, the situational control theory, suggests that behavior is not determined by values or preferences of the actors but instead reflects the external constraints, demands or forces that the social actors may have little control over or even cognizance of. The reasons are then constructed retrospectively to explain what has occurred (external rationality) (Pfeffer, 1982). Theoretical frameworks consistent with assumptions of the rational choice dominate the business process management (BPM) literature. Examples include the theory of reasoned action (Ajzen, 1969), the theory of planned behavior (Fishbein and Ajzen, 1975) and the related “technology acceptance model” (Venkatesh and Davis, 2000). Within these theoretical frameworks the problems with incentive and control systems are seen as engineering problems, which assume that the antecedents (e.g. administrative/financial incentives or restrictions) relate to outcomes (e.g. reduced waiting time in emergency departments) in an invariant, necessary and sufficient manner (Markus and Robey, 1988).

If these assumptions are valid at the process level, the process PIs can be viewed as a logical extension of conventional quantitative outcome-based PIs, where both types of PIs are presumed to
be dependent variables of the ex ante decisions made by hospital staff to achieve the desired outcome within available resources, while taking contingencies (e.g. clinical uncertainty) into consideration.

The main idea of the EDS is to make clinical staff “think ahead” and plan for discharge at the early stage of an inpatient episode (Acute Health Division, State of Victoria DHS, 2001). Hospital staff are assumed to be responding to the EDS as rational agents. The retrospective reasoning of the situational control theory is not consistent with the assumptions of the EDS. The EDS effectively extrapolated the assumptions of internal rationality that seem to be valid at the macro level of health system governing, to the micro-level of day-to-day operations.

In contrast with the theories of rational agents and situational control, which assume that causes relate to outcomes in an invariant, necessary and sufficient manner, the alternative emergent theory assumes that an exogenous impact triggers complex social interactions with unpredictable outcomes. In this context process PIs merely present an occasion for a process change but do not determine which of a large variety of alternatives, if any, would actually emerge. Within the emergent theory framework, identifying behavioral patterns requires a detailed understanding of dynamic organizational processes in addition to knowledge of the intentions of actors (Markus and Robey, 1988).

Theoretical frameworks that have been used in the studies of business process change reflect the multitude of different definitions of the constructs that ultimately relate to one or another of the alternative epistemological and ontological views of the world that fall along the following demarcation lines:

- objective vs subjective;
- rational vs empirical; and
- positivism vs phenomenology/interpretive framework.

The theories of rational agents and situational control represent the “rational”, positivist side of the dichotomy. The alternative emergent theory is more consistent with the subjective, phenomenological view of the world. Although alternative theories may mutually inform each other, it was argued that within a single research project the theoretical integrity should be preserved and:

[...] odd bits and pieces of research results cannot be integrated or interchanged from one theoretical type to another; the effort produces confusion and stagnation – the frustration of the theory. Sorting the two out and keeping them separate, however, produces clarity and basis of progress (Mohr, 1982, pp. 67-8).

The scientific value of case studies is in their potential to analyze critical rival hypothesis or theoretical propositions which in turn opens a possibility for analytic generalizations (Yin, 2003), as opposed to conventional statistical inference. On the theoretical level the study presents a test case of whether the proposition of the rational agent theory, which seems to be the DHS’ implicit assumption, or the emergent theory would demonstrate a greater fidelity to the observational data. The potential for analytic generalizations is enhanced if the contrasting theoretical explanations represent both sides of the ontological and epistemological divide. The choice of the rational agent theory vs the emergent theory satisfies this condition. More importantly, depending on empirical support of one or another theory, different normative applications and attribution of the responsibility for the observed outcomes are derived (Markus and Robey, 1988). It can be argued
that the theoretical persuasions, whether implicit or explicitly recognized as in the present study, influence the interpretation of the results as well as conclusions and practical recommendation.

4 Methods

In this case study, research theory serves as a guide to the data collection methods. Since it was not known a priori whether the emergent theory or the rational agent theory would better explain whether and how the information and operational flows on the ward were affected by the introduction of process PIs, a method based on structuring questionnaires and interviews according to some preliminary theoretical construct is unsuitable, as it potentially creates difficulties in adjusting the theoretical basis to accommodate emerging issues and findings (Sawyer, 2004). Both the emergent theory and the rational agent theory can prove operational in explaining business processes that have a mixed and apparently conflicting nature; e.g. exhibiting technical and social, tangible and intangible, objective and subjective, quantitative and qualitative dimensions (Melão and Pidd, 2000). Therefore, an alternative, less structured research method based on a combination of participant observation, opportunistic interviewing and analysis of relevant Government and hospital documents (Fulop et al., 2001) was chosen. This approach was previously used in studies of organizations, in particular, in the development of information systems (Randall et al., 1994).

Although the EDS was not introduced to hospitals as a process change initiative, it can be viewed as such because it is explicitly aimed at altering the nature and timing of routine operations on the ward level. While two contrasting theories formed the interpretive framework for understanding the feasibility of using dichotomous process PI to achieve macro-policy objectives, the business process change framework can be employed to analyze the actual content of the observed changes in the PCP.

Since, to the best of our knowledge, there have not been previous attempts to redesign the PCP using the exogenously defined universal qualitative PIs, a few approaches to business process change could potentially suit the task: quality assurance (QA)/total quality management, BPR and BPM.

QA in health care is generally associated with external professional standards, certification and accreditation procedures. The elaborated set of quality indicators developed within the QA framework covers most functional areas, but is not consistently linked to the dynamics of business processes and clearly favors quantitative metrics such as percentages. Some observers remarked that the static outcome measures were “developed in order to avoid the necessity of focusing on ‘how’ things are done” (Asubonteng et al., 1996). In contrast, TQM recognizes the importance of improving the processes as a necessary step to improving the outcomes. While both approaches recognize the importance of clinical and managerial leadership and staff training, within the TQM framework the processes, not individuals, should be the objects of quality improvement. While the aim of QA is to satisfy regulatory requirements, TQM aims at actual performance improvement across functional areas and was initially orientated towards satisfying the needs of the “internal customer”. It was implicitly assumed that improvement in organizational performance would translate into better outcomes for patients. The philosophy of TQM is based on the active engagement of staff in achieving performance standards and continuous assessment of employees’ professional requirements and training. As in the manufacturing industries where it originated, TQM in health care aims at improving the process by utilizing the methods of statistical control to eliminate special cause variation. Clinical guidelines that were introduced to decrease variation in clinical outcomes in patients admitted to the hospital with the same diagnosis is a typical example of TQM in health care. Clinical guidelines help in managing medical knowledge by disseminating and
advocating the use of the best evidence-based clinical practice. However, implementation of guidelines was shown to be ineffective to produce significant sustainable changes unless accompanied by changes in the PCP that affect the decision-making process (Woolf, 1993). From that point of view the BPR or BPM frameworks may better suit the task of understanding the implementation of EDS as neither focuses on the improvement of individual performances as QA or rationalizing a particular part of the PTC – clinical patient management. The success of both BPR and BPM is linked to the degree of incorporating IT in management or redesigning of the business process. For example, BPM is defined as “supporting business processes using methods, techniques and software to design, enact, control and analyze operational processes involving humans, organizations, applications, documents and other sources of information” (van der Aalst et al., 2003). However, while “reengineering is the fundamental rethinking and radical redesign of business processes to achieve dramatic improvements in critical, contemporary measures of performance such as cost, quality, service and speed” (Hammer and Champy, 1993), its descendant BPM is more practical, iterative and incremental in fine-tuning business processes (Ko et al., 2009). In this respect BPM is not unlike TQM, which is also concerned with continuous incremental quality improvement but existed long before the proliferation of information technologies.

It appears that the EDS does not neatly fit any of the approaches to business process change: it was not conditional on computerizing the operations on the ward (as would be typical for BPR or BPM) or measuring the assessment of compliance to process PI's (as required by TQM). However, the EDS had more similarities with the BPR approach (Packwood et al., 1998) than with TQM or BPM, first, in approaching process redesign without too much analysis of the existing version; second, in focusing on the reasons for communication breakdowns between the health care providers (i.e. addressing bottlenecks in information flow across the functional division of a health care system) and third in attempting to expand the roles of some members of a multi-professional ward team.

Therefore, a BPR analytical framework was employed to deal with data complexity. In particular, the well established practice in BPR projects of comparing the “as is” version of the business process with the “to be” version and identifying the gaps was beneficial in understanding the attempt at redesigning the PCP using process PI's. The “to be” version of the PCP as it appeared from the DHS' and hospital’s documents was compared with the “as is” PCP as it was observed by one of the authors. The operations conducted at each stage of the actual PCP were compared with the “phases” of the EDS that prescribed what EDS tasks were to be performed and by whom. In addition, 120 medical records were randomly selected and reviewed with the purpose of estimating the added value of the EDS to the PCP. Functional role analysis with respect to information production and use was also instrumental in understanding the PCP.

The study belongs to the class of “ethnographic” research (Geertz, 1973). Ethnographic research is suitable for research questions that define simple quantification and focus on the activities and behavior of groups such as an organizational unit. The task of redesigning the PCP naturally lends itself to the method of ethnographic research where the purpose is to provide a “thick description” of the organizational actors' activities and motivations that, depending on whether the rational agent theory or the emergent theory would demonstrate a greater fidelity to the observational data, will determine the study conclusions and practical recommendations.

5 The study site

The neurosciences ward of a large teaching public hospital in Melbourne, Australia, admits two types of patients according to its specialties: neurology and neurosurgery. In addition, during periods of increased demand for emergency admissions, the 26-bed ward accommodates non-specialty
patients and provides nursing, administrative and managerial services for these patients, while specialist clinical services are provided by respective hospital departments. In 2003 the ward admitted 1,809 neurosurgery patients, 865 neurology patients and 443 patients from other clinical specialties. The ward is a highly efficient unit. During 2001-2006, budget cuts resulted in a 29 percent reduction in the number of beds available to neurosciences patients, while at the same time the ward’s throughput has been increasing annually by 20 percent.

6 Results: whether and how the dichotomous PIs affected the PCP

6.1 Hospital management responding to EDS

The innovative dichotomous process PIs were designed to add some discipline to the pre-existing PCP by establishing additional targets in terms of time limits within which certain tasks ought to be completed and focusing staff’s attention on the patients identified as being at “discharge risk”. Table II shows the stages of the PCP and the corresponding stages of the EDS that in turn correspond to some PI.

The EDS was introduced to hospitals that had already established some form of discharge planning (Acute Health Division, State of Victoria DHS, 2000). For example, in the study hospital a practice of writing a discharge summary form, had already been implemented. Nevertheless, at the time the DHS seemed to believe that the discharge planning lacked specific qualities and needed further improvement, particularly in preventing “bed blockage”, i.e. a failure to discharge a patient for reasons other than medical. The essence of the EDS related to:

- identifying the patients who presented a “discharge risk” early;
- accounting for these risks in discharge planning and implementation; and
- advising external providers about the forthcoming discharge.

Hospital management had prior experience in adjusting the organizational structure and operations to satisfy conventional PIs; however, responding to the process PIs was a new experience. With respect to the conventional PIs the assumptions of a rational agent theory still held: management could evaluate and choose the option that best accommodated various interests of professional groups and make the best use of available resources to satisfy the performance measurement requirements. Introduction of process PIs was not accompanied by any additional resources; the efficiency gain was supposed to come from mobilization of a hospital’s own resources and establishing a disciplined communication with care providers in the community (Acute Health Division, State of Victoria DHS, 2000). The fact that there is an additional cost evolving from additional responsibilities placed on clinical staff was not acknowledged.

The hospital formed an effective discharge working group to develop and implement the changes to the PCP that would satisfy the EDS requirements. The Group designed a universal risk-screening form (RSF) that mirrored the EDS phases and the corresponding process PIs. The RSF was made a part of the medical record. The Appendix compares the EDS process PIs with items from the RSF and the discharge summary.

The working group operationalized the EDS in a single document. Keeping the RSF updated during an admission episode within the time frame as indicated in the corresponding process PIs would guarantee compliance with the EDS. Guidelines to the RSF provided definitions of the terms used in the EDS, outlined the activities (what needs to be done and when), but were somewhat ambiguous in assigning role responsibilities. The universal format of the RSF did not differentiate between
clinical specialties within the hospital but recognized the differences in organizational structure (e.g. risk assessment could be performed by a doctor either at the pre-admission clinic or at the emergency department). Uncertainties of clinical process were accounted for by allowing up to four changes in the expected discharge date.

The success of the EDS implementation varied across the different phases of the EDS. The results are therefore presented separately for each of these phases, concentrating on the comparison of the corresponding “as is” and “to be” states.

6.2 Risk assessment phase

The “to be” assessment phase and the corresponding process PI require that a discharge risk screening is done within 24 hours of admission. The following risk predictors were identified: living alone, having responsibilities of caring for others, pre-existing reliance on community services, likelihood of subsequent problems with self-care arising from the present clinical condition. The RSF guidelines stated that any member of a multidisciplinary team may complete the risk screen assessment; however, it was apparent that the primary responsibility for screening and filling the form rested with duty nurses who were supposed to sign the RSF upon its completion.

In the “as is” assessment phase discharge risk screening takes place either at the pre-admission clinic where doctors complete a comprehensive pre-admission questionnaire, which duplicates the most of the questions in RSF; or at the emergency department. Admitting registrars at an emergency department routinely ask questions that approximate the risk screening protocol. Results are recorded in the medical record in a free format. In addition, the hospital emergency department employs an occupational therapist (OT) who selectively conducts an independent discharge risk assessment of elderly patients and uses the standard OT questionnaire, which then becomes a part of the medical record and is updated daily by the ward OT.

Nevertheless, the EDS required that, within the first 24 hours of admission of a patient to the ward, a duty nurse completes a discharge risk screen questionnaire in the RSF and identifies all the pre-defined “risk predictors”. For all, but a very limited number of patients admitted directly to the ward, this was proven to be a duplicating task.

According to the outcome of a risk screening, patients are categorized into high and low risk discharge groups. The patients identified as a high risk are supposed to be referred for specialist assessment. However, in the neurosciences ward, regardless of the outcome of the risk screening, nurses play no part in making referrals. Doctors refer patients to dieticians, speech therapists and rehabilitation and aged care assessment teams according to their clinical condition. Every patient on the ward is assessed by occupational and physiotherapists (the so-called “blanket” referral) as soon as they are fit to undergo such an assessment. This practice made the requirement for categorizing the patients into a high or low risk discharge risk group redundant.

Opportunistic interviews with therapists and social workers revealed that they never use the RSF and always look for the relevant information in doctors’ entries to medical records and then complement it with information obtained directly from the patients/family during their own routine assessments. Therefore, in the study setting the implementation of the EDS has resulted in unnecessary duplication in patient data collection.

6.3 The planning for discharge phase

The “to be” planning phase and the corresponding process PI require that a discharge plan should be completed within 48-72 hours of admission and, at minimum, identify the prospective date of
discharge, the discharge destination, and actions addressing the issues emerging from the discharge risk screening. The expected date of discharge is to be put in the first of five boxes allocated in the RSF for the estimated and, if necessary, reviewed dates of discharge. A discharge plan, including a discharge destination, is to be written in a free format on the reverse side of the RSF. The form also includes a list of services (e.g. aged care assessment team, allied health, palliative care, etc.) with space allocated for referral dates assigned to the patients identified as a high discharge risk.

Neither the EDS nor the hospital’s guidelines are specific about who is responsible for creating a discharge plan in the first instance. Lack of specificity in this respect is likely to be a reflection of the complexity of the PCP, which involves contribution from a multi-professional team to assess a patient’s discharge prospects and destination. The guidelines nevertheless require that registrars review and revise the discharge plan and, more specifically, the date of discharge on a daily basis. This means that in reality only the doctors at the level of seniority of no less than a registrar are in the position to produce an educated guess about the expected duration of hospital stay for all but routine elective admissions.

The “as is” planning phase. A review of 120 medical records failed to discover an RSF that contained a discharge plan which meets EDS criteria, or any discharge plan for that matter. The requirements for registrars to review and revise discharge plans and, more specifically, the dates of discharge on a daily basis, was not carried out. The corresponding part of the RSF was left blank. However, non-compliance with the EDS and failure to fill the RSF do not mean that discharge planning was not performed. In fact, the complexity of the PCP, combined with unavoidable clinical uncertainty, requires that members of the multidisciplinary team work in cooperation to ensure an effective (i.e. timely and safe) discharge. The strength of the teams is in their ability to assemble the right combination of skills to address various clinical and situational problems that frequently require flexibility in the use of resources, both inside and outside the ward. On the relative advantages of the different models of discharge planning and implementation (Anderson and Helms, 1993).

6.4 The implementation of discharge phase

The “to be” implementation phase and the corresponding process PI requires that timely notification of community health care providers needs to be done at least 48 hours prior to a patient leaving a hospital. The notification should contain patient demographic information, the predicted discharge date and the name of a contact person within the hospital.

This phase is the very essence of the EDS, as early identification and evaluation of patients’ needs for post-admission services and, most importantly, timely notification of external providers would presumably reduce “bed blockage”. If the first and the second process PIs are met (i.e. both the discharge date and destination are already identified), the date for notification of community providers is derived by a simple arithmetic operation. If the assumption that the lack of effective communication between hospitals and external providers causes “bed blockage” is correct, the strategy of “thinking and planning ahead” would realize its potential during the implementation phase and unnecessary delays in transferring patients to a post-acute health care facility would not occur (Acute Health Division, State of Victoria DHS, 2001).

The “as is” implementation phase. Resident doctors write clinical progress updates in medical records on a daily basis and these entries are used by therapists, aged care and rehabilitation team assessors as a guide for understanding a patient’s discharge prospect. The ward therapists, who regularly review the patients’ progress, frequently translate doctors’ clinical notes into discharge updates at the end of their own entries into the medical record. This practice creates multiple
duplications of discharge updates that are scattered all over a medical record, yet none of them is specific about the “predicted” date of discharge, even if a patient is put on the waiting list of an external care provider. In this case, the corresponding entry would simply read – “discharge when bed is available”.

It is a common practice on the ward to make all the necessary arrangements well in advance of the actual discharge. By the time doctors signify that a patient is “medically stable” from the neurosciences perspective, allied health professionals, in consultation with a nurse unit manager who in turn liaises with doctors, have already assessed all the discharge options. The discharge destination is identified in a medical record only after the team reaches a consensus, which automatically triggers the necessary activities, rendering the 48 hour deadline superfluous. If external providers need to conduct their own assessment of patients before accepting them, these arrangements are made at the earliest opportunity. Therapists and nurse managers arrange fitting and testing of aids and supplies and contact post-acute and community service providers to arrange outpatient rehabilitation services. At this stage of the PCP a nurse unit manager coordinates the team’s activities and may even exercise her own informal connections to speed up the process.

In spite of these coordinated efforts towards discharge planning, “bed blockage” still routinely occurs. This is because of the natural fluctuations in availability of places in post-acute care facilities. Even those patients who are put on the waiting list of a rehabilitation facility a few days before they are finally cleared for discharge by all clinicians involved in the case, do not necessarily leave the ward on that day as a vacant bed may not be available for a few days or even weeks. The perceived bottleneck may not be caused so much by the ineffective discharge planning as by inadequate supply of post-acute and long-term care options (Dwyer and Jackson, 2001).

6.5 The discharge summary phase

The “to be” discharge summary phase and the corresponding process PI require that doctors compile comprehensive discharge summaries, along with medical certificates and medication prescriptions. A discharge summary should contain basic demographic data, relevant clinical information, a medication list and information regarding follow-up appointments and should be dispatched to the patient’s nominated general practitioner (GP) within 24 hours of discharge. The corresponding part of the RSF includes a discharge checklist which ensures that other documents, apart from the discharge summary, are also written (e.g. a nursing “transfer” letter, which accompanies patients admitted to a rehabilitation facility), and typical discharge-related activities are performed (e.g. aids supplied, follow-up appointments booked, transport arranged). A duty nurse is supposed to complete a checklist.

The “as is” discharge summary phase was the only phase which approximated the “to be” process because writing discharge summaries became a standard practice at the ward even before implementation of the EDS. This was due to the introduction of the minimum dataset requirements developed by the General Practice Division of Victoria in 1999. However, the EDS had introduced time limits that might not have been strictly observed previously, especially on the occasion of the short hospital stays or week-end discharges, but during the observation period only insignificant and unintentional violations of the deadline were identified. Junior doctors were responsible for discharge summaries, medical certificates and medications prescriptions. A hospital pharmacist used to attend the ward every morning and collected copies of discharge medication scripts to assemble “medication packages” to be picked up by patients discharged to the community (patients transferred to rehabilitation facilities were not provided with discharge medications, instead medical records with current drug charts follow them). A ward clerk is responsible for booking follow-up
appointments, organizing patients' transport, overseeing transfers to a transit lounge and handling three copies of discharge summaries, including patients' own copies. The whole process is coordinated by a nurse in charge and typically progresses smoothly as the role-related activities are well rehearsed. However, the review of the medical records failed to discover a single RSF with the checklist of typical discharge activities completed by a duty nurse. This is because the duty nurses are not usually involved in the above activities.

To summarize, the review of 120 medical records together with direct observations showed that the only part of the RSF that was fairly consistently completed by duty nurses was the risk screening questionnaire but this activity merely produced a duplication of previously collected information and, apart from ensuring that the first process PI is met, did not add any value to the PCP. Doctors and allied health professionals on the ward followed a routine that was different from the one envisaged in the EDS. Members of a multi-professional team conducted their own assessments at their own time with the purpose of identifying the specific needs of every patient, rather than only patients categorized as a high-risk discharge. The EDS criteria for the second and the third PIs were not met, but the ward staff complied with the fourth PI by writing and posting a comprehensive discharge summary within 24 hours upon discharge. However, this practice was established prior to the EDS.

Despite the low compliance with the newly introduced process PIs discharge planning on the ward is an ongoing process. However, the complexity of the real PCP is such that, apart from routine elective admissions, decisions relating to discharge planning do not fit any particular time frame. Discharge options are evaluated in the context of patients' clinical progress and personal circumstances, as they evolve. Formal assessment procedures and family meetings are conducted as deemed appropriate. On the basis of these assessments and consultations, the multidisciplinary team eventually reaches a consensus about the most appropriate discharge destinations.

7 External validity of the study

So far it has been established that although hospital management reduced a complex intervention into the PCP down to a mere request to complete a single RSF (thus ensuring that all the process PIs could be met), the ward staff did not oblige. In order to establish the validity and reliability of the results of a single case study, the observed outcomes of only a marginally successful implementation of the process PIs were compared to the outcomes of an external evaluation of the EDS, commissioned by the DHS. As mentioned previously, an audit was the only way of establishing the level of compliance to the dichotomous process PIs that aimed to regulate the conclusion of specific tasks within the pre-determined time frame.

The audit showed that prior to the EDS, 94 percent of the total number of 139 hospitals had some form of discharge policy, and 82 percent of these had formal discharge protocols as well. Of the total number, 75 percent of the protocols were tailored to clinical specialties (Acute Health Division, State of Victoria DHS, 2001).

A total of 9,887 patient records were assessed in relation to discharge practices in 139 hospitals. Only 23 percent of hospitals demonstrated a high compliance with the EDS requirements. A further 32 percent were assessed as achieving medium compliance and the remaining 45 percent were assessed as low compliance. Of particular interest is an inferior compliance rate observed in large acute care hospitals, with most of them being in the low compliance group. The results of the external audit established some support to the external validity of the findings of the case study conducted in the neurosciences ward of a large metropolitan hospital.
8 Analytical exploration of the study results and theoretical generalization

The assumptions behind the use of exogenously determined performance measures, such as those used in the demand management strategy (Figure 1), are consistent with the value-maximizing theory of a rational choice, namely that:

• decisions are made ex ante and involve evaluation of available alternatives; and

• decisions are made according to a consistent across the health care system set of preferences.

These assumptions seem to be valid at the macro level of health system governing with hospitals responding as expected to the set of conventional outcome PIs. However, with the introduction of the process PIs the assumptions of determined rationality were extrapolated at the micro-level of day-to-day operations. The success of the EDS implementation would have suggested that such extrapolation may be valid. Alternatively, since the empirical data indicated poor compliance with the process PIs, a competing theoretical framework, namely the emergent theory, may offer a better explanation to the study findings.

According to this theory, the behavior of organizational actors emerges from a dynamic interaction of external circumstances and internal motives or interests. The emergent theory stresses the sequential, unfolding nature of activity in the organizations:

Because participation in organizational decisions is both segmented and discontinuous, because the interpretation of the results of actions – the meaning of history – is often problematic, behavior cannot be predicted a priori either by the intention of individual actors or by the conditions of the environment.

Moreover, “rationality cannot guide action [...] because rationality, goals, and preferences are viewed as emerging from action rather than guiding action” (Pfeffer, 1982, p. 9).

From this theoretical perspective the success of the EDS as a process redesign project would depend, first of all, on how well the everyday rationalities of the “as is” PCP are understood and, second, on how accurately the actual problems with the PCP are identified and addressed in the “to be” version of the PCP. Third, since the PCP is both a technological and a social process, the organizational realities exist within a system of shared or, possibly, conflicting interests and interpretations of the meaning of the process PIs, therefore reflecting on staff’s attitudes toward the existing and the proposed version of the PCP is likely to enhance the project success. In the following section we elaborate on these propositions.

8.1 Understanding the “as is” process

As the BPR movement reached the stage of maturity, the declared earlier ambition of starting a process redesign from a “clean slate” has given way, at least in health care, to recommendations for reengineering projects to be bottom-up, gradual and beginning with assessment of the “as is” process in an organizational context (McNulty, 2003; Packwood et al., 1998). Contrary to this trend redesigning the PCP according to EDS was a “top-down” initiative that did not reflect on the strengths and weaknesses of the existing PCP and introduced a universal set of process PIs to regulate the discharge stage of the PCP in every hospital, large or small, rural or metropolitan, and across all clinical specialties as well.

The study of the PCP in a neurosciences ward revealed that participation in decisions making is segmented and discontinuous. This is because of the temporal discontinuity of the workflow, as the
clinical work is organized in three shifts, which is typical for any acute care facility, and also because of the specific division of labor that was observed in the study ward.

In the neurosciences ward the division of labor resulted in clinicians' function-determined role being separated from their process-oriented role. The former refers to expert clinical knowledge that guides the decisions relating to admission, diagnosis and clinical interventions. The latter refers to the detailed process knowledge, which includes understanding of patients' individual circumstances, their clinical progress and the up-to-date information about vacancies with external providers of post-acute care. In the study ward all essential clinical decisions are made by neurologists and neurosurgeons (consultants and registrars), however, the discharge destination may be determined through consultations with other specialists, allied health professionals, internal and external aged and specialized care assessors, patients themselves and/or their family members.

Separation of clinical functions from process-oriented tasks seems to be the reason why the RSF guidelines are ambiguous in assigning the ultimate responsibility for identifying the discharge date and destination to any particular member of the team. As the discharge day approaches, senior doctors, who, according to the EDS protocol, are supposed to review the date and destination daily may not be in the best position to do so as the process-related knowledge resides elsewhere.

For example, patients' personal problems are attended by social workers while therapists organize post-admission physiotherapy and/or occupational therapy. All discharge-related activities are coordinated by nurse managers, whose duties are predominately process oriented. These arrangements fit the definition of a multi-professional collaboration model of discharge management (Zarle, 1998). The role of nurse managers includes coordination of the discharge process, but not necessarily entire control over it as patients cannot be discharged without doctors' approval; the final “cleared for discharge” decision resides solely with senior doctors. This incomplete separation of clinical functions from process-oriented tasks presents a challenge in establishing control over the entire PCP and, in the absence of a single “process owner”, calls for a disciplined communication between doctors and the rest of a multidisciplinary team.

In the study ward temporal discontinuities in the PCP and functional subdivision of professional roles are compensated by complex working arrangements that allow for an overlap in responsibilities and rely on informal, as well as formal channels for both intra- and inter-organizational communications. This practice is effective because of the culture of collaboration and mutual trust. Effectiveness in communication with external providers, which is the primary concern of the EDS, seems to be an extension of effective communication within a multidisciplinary team, and does not appear to be a stand-alone problem that can be addressed by the introduction of new type of process PIs. It appears that the effective communication and coordination of activities between the members of a multi-professional team is more important for achieving a timely and safe discharge than advising the post-acute care providers about the forthcoming discharge 48 hours in advance.

8.2 Identifying the real problems with the PCP

The study results suggest that the following set of problems associated with the real PCP, as opposed to the PCP as envisaged by the DHS: the actual reason for bed blockage, the inherent uncertainty of the clinical process and its holistic and context-specific nature.

1. Misattribution of the discharge problem

In the study ward the practice of early assessment of patients' discharge needs and working in cooperation with external providers of health care has been established independently of the EDS.
Nevertheless, beds are routinely blocked by patients who have been on waiting lists with post-acute care facilities well in advance of the day they could have been safely discharged. This may indicate that the real reason for bed blockage does not relate to the hospital staff’s inability to “think ahead” and record the prospective discharge date, but relates to an inadequate provision of post-acute care places. This problem could not be addressed at the level of an individual ward.

2. Insufficient appreciation of inherent clinical uncertainty

Does not recognize the fact that many acute presentations are puzzling even for senior specialist doctors. It may take days and multiple investigations to establish a diagnosis with some level of confidence, let alone the prognosis for discharge. In some cases the diagnosis is derived from a series of trials and errors, where preferences with respect to the next investigative procedure or treatment emerge from the previous actions. Adding to the complexity, interpretation of results of previous actions may differ among clinicians. This continuous cycle of establishing and refining the preferences is more consistent with the emergent theory than with the assumptions of the theory of rational choice. Understandably, doctors dealing with complex clinical cases are not committed to setting up a discharge date and destination within 72 hours on admission.

3. Inadequate recognition of the sequential nature of the PCP

Doctors’ non-compliance effectively obliterates the essence of the EDS since the success in preventing bed blockage is vested in its implementation phase, where external providers receive a notification at least 48 hours before the actual discharge, which is impossible unless a prospective discharge date and destination had been identified.

Figure 2 shows a critical link between the first two phases of the EDS, the assessment and the planning phase, and the implementation phase, which ends when the patient leaves a hospital.

With respect to the deadlines of the process PIs, the count of hours during the first two phases of the EDS follows the natural flow of time, but during the third phase – the implementation phase, the number of hours left before the deadline for notifying the community provider are counted backwards, as if reversing the flow of time. The DHS concern seems to be that, unless there is a pre-set patient-specific discharge date with respect to which the 48 hour deadline for notification of external providers can be determined, there would be an irreparable discontinuation of the discharge process. In other words, there would be no “alarm clock” that would clearly point to the 48 hour deadline resulting in a failure to give advanced notification to external providers of post-acute care.

From Figure 2 it is apparent that the simple arithmetical calculations that form the essential part of the newly introduced process PIs ignore not just the inherent uncertainty associated with the stages of the PCP, but also the sequential nature of the clinical process (i.e. diagnosis preceding treatment, followed by recovery). It has been observed in the literature (van der Geer et al., 2009) that compliance to the process PIs depends on whether the employee perceives the direct relation between actions and consequences. This was evident in the degree of compliance with the first PI (the assessment phase, identifying the discharge risk, that directly follows patients’ admission and serves the purpose of duty nurses becoming familiar with the particular circumstances of the newly admitted patients) and the fourth PI (the discharge phase, where writing the discharge summary happens after patients are discharged and serves the purpose of informing community health care providers about the patients’ care during the hospital admission). The process PIs corresponding to the planning phase and to the implementation phase violate this condition by incorrectly implying the assumptions of determined rationality to the phases of PCP better described by assumptions of
the emergent theory. The staff of the neurosciences ward were well aware that a successful discharge, when it occurs, is unrelated to either the multiple attempts to identify the exact discharge date or whether “the alarm clock” was set up 48 hours prior to actual discharge, but is a result of the coordinated efforts of the members of multi-professional team that responded to the clinical challenges and the patient’s personal circumstances as they evolved.

8.3 Reflecting on the staff’s motives and attitudes

Unlike emergency admissions, elective admissions are associated with lesser clinical uncertainty. It appears that at least for this category of patients it is possible to predict the discharge date with some confidence. In the words of a nurse unit manager:

[…] we know the average time for a standard elective procedure and if there are co-morbidities, we detect them at a pre-admission assessment and usually can tell whether there will be a longer period of a hospital stay.

Nevertheless, the RSFs for this category of patients were no different from the rest of RSFs. During one of the opportunistic interviews a hospital administrator stated that doctors have been reluctant to specify the exact date of discharge. It seems that, apart from the problem of dealing with clinical uncertainty, there is another reason for non-compliance with the process PIs, a reason that reflects the social nature of the PCP and subjective attitudes of the organizational actors.

People are aware that there are always motives for displaying interest in someone else’s routines. The EDS was administered in a top-down manner and was not promoted to clinical staff. In line with tradition established for the conventional outcome-based PIs, preliminary consultations were conducted predominately with hospital administrators. This created grounds for the differences in interpretation of the meaning of the EDS between the DHS officials and clinicians at public hospitals. Recent publications suggest that any bureaucratic attempts to standardize the PCP are interpreted by clinical staff as a demonstration of a low level of tolerance towards an inherent uncertainty within the clinical process (Batterham, 1995) and lack of appreciation of the differences between clinical specialties (McNulty, 2002). Doctors are notoriously protective of their professional autonomy and naturally reluctant to endorse a strategy that, from their perspective, so blatantly attempts to establish bureaucratic control at the level of clinical decision making (Harrison et al., 1992).

9 Summary of the results

Table III compares the stages of the PCP and the corresponding process PIs as outlined in the EDS (the “to be” PCP) with the observed “as is” PCP.

In relation to understanding of the “as is” process, this study found that a distribution of discharge-related roles between the members of a multidisciplinary team in the study ward created a structure that supported the early discharge planning and implementation, although the realities of the day-to-day activities were incongruous to the process PIs. In relation to identifying the actual problems with the PCP, it does not appear that the EDS ideology of “one size fits all” would suit the variety of functional divisions of labor across different settings, unequal power balance between members from different clinical specialties, and other contextual factors that may influence the success of the PCP redesign project. For example, resources available to the study ward allowed a more comprehensive and clinically specific assessment of patient discharge needs than was presumed by the EDS. Contrary to the primary concerns of the officials at the DHS, external providers were contacted as soon as each patients’ clinical and social circumstances were clarified and regardless of the 48-hour deadline. Thus, the study established non-compliance with the process PIs in a ward
with well established and effective discharge planning practices. The study identified a rather curious case of an effective process being subjected to an external process redesign initiative that did not result in any additional value to the PCP.

On a theoretical level, the value of this study is in applying competing theoretical propositions to describe a specific situation of introducing process PIs as a means for BPR. Myers and Yong (1997) linked the scientific value of critical ethnographic research to whether any of the pre-existing theoretical misconceptions were dispelled. The results of the study suggest that the theoretical propositions of the emergent theory are consistent with the empirical data rather than the rational agent theory, which seems to be an implicit assumption of the EDS. Policy decision makers at the organizational or state levels may need to consider the outcomes of the study to achieve a higher rate of success of interventions at a business process level. The results described in our paper essentially confirm the conclusion that the success of a business process change project depends on the degree of acknowledgement and acceptance of the emergent rationality of organizational actors involved in the PCP. The introduction of PIs as a method for process redesign triggers complex social interactions with outcomes that cannot be predicted with certainty. As is the situation with any process change project, the process PIs became a social object whose meanings are defined by the context of their use. Therefore, the EDS presented the opportunity for change but did not determine which of the large variety of alternatives would actually emerge from the process redesign (De Cock and Hipkin, 1997).

10 Discussion and recommendations for practice

It was argued in Section 3 that normative applications and recommendations for practice ought to be consistent with theoretical generalizations supported by an ethnographic case study. The emergent theory represents the subjective, empirical side of the ontological and epistemological divide. Some researchers take a strong anti‐positivist stance, arguing that the prediction of human actions, such a purposeful redesign of the PCP or an information system, is not a legitimate pursuit. Therefore, the very possibility for deriving practical recommendations from the outcome of phenomenological research is non‐existent (Hirschheim, 1985; Klein and Hirschheim, 1983). Other researchers argue that it is possible to derive recommendations from the results of a study of a technological and social phenomenon, such as the PCP, that turned out to be consistent with assumptions of the emergent theory. However, according to the emergent theory it is not possible to identify both the necessary and sufficient conditions that predict the outcome with statistical certainty (Markus and Robey, 1988). Instead, an understanding of the necessary conditions may assist in successfully redesigning the PCP. This may occur when necessary conditions are identified and combined to tell the story of how the outcome occurs whenever it does occur (Mohr, 1982). However, the ultimate success of a BPR project would depend on the outcomes of the complex interactions of the external circumstances and internal motives and interests of organizational agents whose interpretation of the meaning and the purpose of the project would invariably differ. It follows that any practical recommendations derived from the study outcomes consistent with the emergent theory may appear “weak” and even frustrating for researchers with an allegiance to theories from the opposite side of the ontological and epistemological divide. Trying to identify the necessary conditions from the case study of the essentially unsuccessful implementation of the dichotomous PIs as a mean of redesigning the PCP may appear to be an even less rewarding exercise.

Nevertheless, results of an ethnographic case study with a negative outcome may assist in formulating hypotheses about necessary conditions that would then be subjected to empirical testing. Section 8 outlined a number of conditions that appear to be necessary for successful
redesign of the PCP. These are summarized in Table IV and can be cautiously interpreted as recommendations for practice.

The introduction of the universal dichotomous process PIs is inconsistent with the very nature of the process PIs that hospitals employ for quality improvement purposes. The conventional process PIs are always context-specific while success of their implementation frequently depends on such intangible factors as a culture supportive of cooperation and mutual trust. There is unlikely to be a universal set of process PIs that would suit every particular PCP, and hospitals may need to be encouraged to develop their own process PIs within the specific context of a clinical specialty and according to locally shared meanings. Hospitals and other health care organizations need to retain relative independence from external interventions in order to exercise flexibility in redesigning the PCP according to their own specific combination of strengths and weaknesses (van Raak et al., 1999). Managers need to decide what should be strictly regulated and what should be left to empowered individuals and groups; what should be made explicit at any effort and what could and should be left at the discretion of the clinicians; when to manage inputs and processes and when to look only at the final outcomes (Lillrank and Luikko, 2004).

Figure 1 Application of conventional PIs in demand management strategy and process PIs in EDS

Figure 2 Illustration of the critical link in the EDS (early identification of the discharge date and destination) designed to ensure a continuity in the PCP

Table I Objectives and methods of assessment of different type of PIs

Table II Stages of the PCP and the corresponding stages of the EDS

Table III Summary of results
Table IV Suggested necessary conditions/recommendations for practice

Table AI Comparison of the EDS process PIs with the items from the RSF

References


Further Reading


Appendix

Table AI

<table>
<thead>
<tr>
<th>Phases of the EDS and the corresponding PIs</th>
<th>Items from a risk screening form and a discharge summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Assessment phase</td>
<td>1. Discharge risk screen questions (yes/no)</td>
</tr>
<tr>
<td>Provision of timely and informative risk screening within 24 hours of admission. The following “risk predictors” should be reflected in a discharge risk screening tool: living alone, having responsibilities of a caregiver for others, pre-existing reliance on community services, likelihood of subsequent problems with self-care arising from the clinical condition resulting in an admission</td>
<td>a. Did the patient use community services prior to admission? (e.g. home help, personal and respite care, RHNH, community aged care package)</td>
</tr>
<tr>
<td></td>
<td>b. Did the patient/caregiver have problems managing at home prior to admission?</td>
</tr>
<tr>
<td></td>
<td>c. Is the patient a recipient of care? Does the patient have caring responsibilities for others?</td>
</tr>
<tr>
<td></td>
<td>d. Does the patient live alone and is &gt;70 years of age?</td>
</tr>
<tr>
<td></td>
<td>e. Is the patient likely to have problems in managing self-discharge (e.g. medications, washing, shopping, etc.)?</td>
</tr>
<tr>
<td></td>
<td>f. Are there any other factors that may impede the safe and timely discharge?</td>
</tr>
<tr>
<td>2. Planning phase</td>
<td>The estimated date of discharge is to be put in the first of the five boxes allocated for estimated and reviewed dates of discharge</td>
</tr>
<tr>
<td>Commencement of the preparation of the discharge plan to be completed within 48-72 hours of admission and to identify the prospective date of discharge, the discharge destination, and actions to address the issues identified with a discharge risk screening tool</td>
<td>a. The estimated discharge date is to be clearly identified</td>
</tr>
<tr>
<td></td>
<td>b. A discharge plan, including a discharge destination, should be written in a free format. The corresponding guidelines provided a few examples of acceptable discharge plan entries</td>
</tr>
<tr>
<td></td>
<td>c. Since a positive risk screen result required a referral(s) for additional assessment, a list of services with the date of referral was included on the form (e.g. aged assessment team, allied health, social work, palliative care, etc.)</td>
</tr>
<tr>
<td></td>
<td>d. The Form required that the patient/caregiver signed the form as evidence of their participation in the discharge planning</td>
</tr>
<tr>
<td>3. Implementation phase</td>
<td>The community provider who is expected to meet the post-discharge needs is identified in the free format discharge plan along with the method of notification</td>
</tr>
<tr>
<td>Tertiary notification of community health care providers to be done at least 48 hours prior to patient leaving the hospital. The notification should contain patient demographic information, the predicted discharge date and the name of a contact person within the hospital</td>
<td>4. A discharge checklist, indicates</td>
</tr>
<tr>
<td></td>
<td>a. whether and when a discharge summary for GP has been completed and sent</td>
</tr>
<tr>
<td></td>
<td>b. whether the post-acute care provider was notified/activated</td>
</tr>
<tr>
<td></td>
<td>c. whether other documents (medications) aside/spare were prepared, if Comparison of the EDS process PIs with the Items from the RSP</td>
</tr>
</tbody>
</table>

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