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Using Patient Journey Modelling to Visualise the Impact of Policy Change on Patient Flow in Community Care

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Abstract

Health policy plays a crucial role in community care, particularly within care programs such as ComPacks. ComPacks is a short-term care program administered by New South Wales (NSW) department of health which runs for up to 6-weeks and its goal is to prevent or minimise hospital readmission. Compliance to the ComPacks health policies is required in order to gain financial support from overnment bodies, however when the Government makes changes to service policies, this may potentially cause ripple effects to the workflow of the service and increase pressures on care providers, which in turn may affect the patient. Utilising a multi-layer visualisation tool can help identify whether changes made to policy are impacting patient flow in a positive or negative way. This research study investigates the use of an emerging patient journey modelling technique to better understand service design in a community care setting, whilst also determining the impact of State-level policy interventions.

Keywords:

Patient Journey Modelling; Essomenic; Health Policy; Community Care; ComPacks.

Introduction

The increasing prevalence of hospital readmissions and the subsequent impact on acute care services cannot be easily ignored. Easing the burden on acute care services can be managed through efficient and effective service delivery of community care services [1, 2]. *C*ommunity care programs have been initiated by Local and State government as a means to addressing community health issues. Such examples can be exemplified through programs such as Home Aged Community Care (HACC), Hospital in the Home (HITH), and Community Packages (ComPacks) in which patient care is transitioned from hospital to home and assistive services are provided to patients, post-discharge [1, 3, 4]. These programs in particular are driven by a focus on reducing the probability of readmissions due to post-discharge complications, thus reducing the pressures on hospital services. In understanding that state and local governments administer most of these care programs and services, policies and guidelines are developed and implemented as a directive measure in achieving an effective service delivery for care. These documents dictate service delivery processes and also indicate performance areas that are to be measured [5]. When changes are made to policy, it is difficult to examine whether the impacts of these changes are affecting service workflow, patient flow and patient outcomes without understanding the concepts of policy analysis. The following study examines the use of a healthcare-oriented service redesign technique as a tool to visualise the impact of policy change on service workflow, patient flow, and outcomes within community care.

Health Policy Development

Health policy is an essential component of the delivery of care services. It establishes a plan describing the courses of action or intended actions to be taken by institutions or organisations that have an impact on health [6–8]. Health policy is developed based on informed values and reasoning [5]. It is formulated, proposed, and evaluated using evidence-based methods to ensure successful implementation. Therefore, policy changes must undergo comprehensive analysis and evaluation. Analysis and evaluation have the potential to (1) increase policy impact and (2) provide evidence for future policy amendments [9, 10]. Based on literature surrounding existing theoretical frameworks for policy analysis, it is generally agreed that the policy development environment comprises several interconnecting elements; policy-makers, processes and outputs. These elements interact through the 5 stage Health Policy Development Cycle (HPDC) (Figure 1).

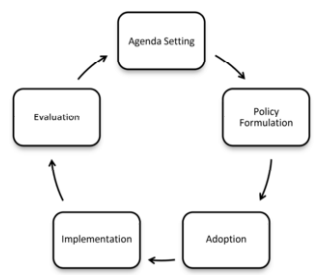

Figure 1 – Key Stages in the Health Policy Development Cycle [8]

Stage 1 – Agenda Setting: Identifies and defines the current policy issues and sets an agenda as to what problems need to be addressed [7, 8, 11].

Stage 2 – Policy Formulation: Sets policy boundaries between State and Federal health authorities and creates and/or changes actual policy content [8].

Stage 3 – Adoption: Sees the policy amendments brought to attention of policy approval bodies and put into force by State or Federal legislative measures [8, 12].

Stage 4 – Implementation: Action is taken to officially put approved policy changes into practice – more particularly formalising these actions by writing and documenting them into legislation.

Stage 5 – Evaluation: Involves the process of monitoring, analysing, critiquing and assessing existing or proposed policies. It is designed to help governments implement these policies in an effective and efficient manner through heavy examination of their policy content and their effects [11, 12].

Tools

Policy developers use a range of tools during the various stages of the HPDC. Stakeholder Analysis is used during Stages 1 and 2 to analyse the behaviour, responsibilities, interests, agendas, and common resources or interactions between different stakeholders and how these impact the policy process [11, 12].

Stage 3 may include the use of policy evaluation software, such as Policy Maker. These types of software focus on analysing the political dimensions of adopting public policy and decision making around such changes. They can also assist stakeholders in determining the feasibility of the policy to be implemented. Outputs are in the form of graphs, statistical charts and opportunity/obstacle narratives [11].

Tools used in Stage 5 (Evaluation) include document analysis and stakeholder mapping. Document analysis involves a systematic review of existing policy documentation and determining the clarity and comprehensiveness of the internal statements in alignment to the reflection of intended outcomes [9]. Stakeholder analysis has also been applied to the latter stages of the policy process. By deconstructing political dimensions, linkages can be made to stakeholders and objectives particularly between the distinct micro, meso and macro policy levels [14]. Further analysis on the level of control each stakeholder has in relation to proposing new agenda items can also trigger recommencement of the policy development cycle.

Issues

The current tools and approaches to policy analysis present several limitations. In document analysis, there a disregard to other contributing factors which are generally involved with the policy process such as stakeholders, resources and monitoring processes. Application of stakeholder analysis/mapping within a healthcare context has also proven difficult in drawing proper conclusions in relation to policy assessment. With the continuous changes occurring within health environments, it is difficult to easily gather information which is "cross-sectional" or "static" to a particular period of time [13, 14]. The timeframe for which health policy data is collected and analysed can also affect the relevance of analysis that informs decision-making. When using computer-aided policy tools, the quality of the assumptions and judgments made by the analyst can affect the validity of the results produced by the application [11, 15, 16].

This suggests there is a major deficit between the formulation stage and the implementation stage [9] as those that formulate the policy are usually not involved in the implementation of resulting policy changes at the operational level [9, 17]. In addition, current methods and tools used for evaluating and analysing policy within particular stages of the policy cycle are isolated to a singular perspective potentially resulting in an incomplete understanding of workflow, impact and outcomes. This deficit can be overcome by introducing visual patient journey modelling to the early stages of the HPDC to provide evidence to policy developers and help them to understand the potential impact of policy changes on patient flow and service delivery at an operational level.

Research Setting & Design

This research study utilises a multi-method approach for visualising the impact of policy changes particularly in a community care setting. Participatory Action Research is used to gather healthcare stakeholder input. The aim of the research is to better understand service design in a community care setting, whilst also determining the impact of State-level policy interventions through the application of an emerging patient journey modelling technique known as Essomenic. Document analysis and healthcare provider focus groups also contributed to the development of the resulting models.

Research Setting

The study examines the process flow and service design of a six-week short-term post-discharge care program known as ComPacks (Community Packages). ComPacks is a non-clinical care program initiated by NSW Department of Health that promotes a safe transition of patients from hospital to home. Services include: meals on wheels, mobility and transport, assistive care and home nursing. The main focus of ComPacks is to reduce the probability of hospital readmissions caused by post-hospital complications, as well as provide an interconnecting pathway for on-going services for longer-term care and management. There are currently several community care sites across New South Wales that deliver ComPacks Services to eligible patients in their local communities. One such site, Liverpool Catholic Care is part of a major non-profit organisation, which is responsible for the delivery of 120 programs in areas such as ageing, disability care, youth and family, education, training and support services.

Participatory Action Research

Participatory Action Research (PAR) involves all relevant parties actively examining together, current action (which they experience as problematic) in order to change and improve it. Research is designed to address specific issues identified by local stakeholders, and the results are directly applied to the problems at hand [25]. Staff from the local ComPacks office were included in a number of group workshop sessions. They described the flow according to the old policy (pre) and as per the latest policy changes (post).

Patient Journey Modelling

Patient journey modeling (PJM) visually describes the journey of patients as they transition through the system of care [18], [19]. It is an improvement tool used to represent the healthcare system as a whole and identify the areas in which service delivery can be improved [18–24]. This study focused on the application of an emerging healthcare redesign technique known as Essomenic. Essomenic is a patient journey modelling technique that has had successful applications within the healthcare domain, in areas such as oncology, ambulatory care, indigenous maternity care and mental health [18–24]. Essomenic patient journey modelling, uses the principles of patient centered care and drives the redesign activity from a patient viewpoint identifying items of value to the patient and placing them at the forefront of the modeling process [18]. It incorporates additional factors that contribute to the overall quality and delivery of care including patient needs, policies and guidelines, staff roles, information needs and provides considerable measurement capabilities [18]. Modelling syntax puts patients, shown in red, at the top of the model with each type of staff role involved in the patient flow allocated a unique colour.

Other key syntax includes:

- Blue oblongs = processes
- Green documents = paper-based information
- White system icons = electronic information supported by ICT
- Pink documents = clinical guidelines/policies
- White metrics boxes = measurement criteria

By including care providers in the model development process and producing visual outputs, stakeholders exhibit higher degrees of understanding and engagement [25]. The models also provide evidence on the impact of policy change pre- and post-implementation of the amendments.

Facilitated Patient Journey Modelling Sessions

Throughout the duration of the study, several facilitated PJM sessions or workshops were conducted with the purpose of gathering first-hand evidence of perceived impacts made to ComPacks workflow and service design. These modelling sessions/workshops serve as an informal collaborative environment aimed to educate participants of the methods used (PJM), whilst also encouraging and empowering them to be part of the problem solving process. As was previously addressed, the workshops emphasise visually representing the personal experiences of ComPacks staff members during the delivery of ComPacks. The ComPacks staff members are also included in the validation process of the models produced. This is to ensure that models produced accurately depict workflow and service design of ComPacks services.

ComPacks Patient Journey Models

As compliance to policy is an important part of the ComPacks funding model, document analysis and modelling were undertaken to examine the impact of policy changes implemented in 2012. The ComPacks policy was analysed to produce two viewpoints.

1. Patient flow prior to policy changes made in late 2011. This model visually represents the normal course of events as per the previous (2005-2006) ComPacks policy.
2. Patient flow post-policy changes.

   This model visually represents the current patient flow as per the latest policy implemented in 2012. See Figure 2.

Production of models pre- and post-policy changes provides evidence as to the impact of policy changes on patient flow into, through and out of the ComPacks program, and highlights if service delivery processes have been improved as a result of the decreed State-level policy changes. The scope of each model begins with an in-hospital eligibility assessment until their exit from the ComPacks program. Figure 2 shows the first page of the post-policy change Essomenic patient journey model.

Comparative Analysis Between Pre and Post Policy Change Models

Comparative analysis of both models was conducted to determine how ComPacks was impacted by the dictated policy changes. The Essomenic modelling technique allows for the easy identification of factors that may potentially affect the overall service design and workflow of ComPacks. These factors include:

- Change in total number of processes
- Repetition of tasks or duplicated processes
- Introduction of new staff roles

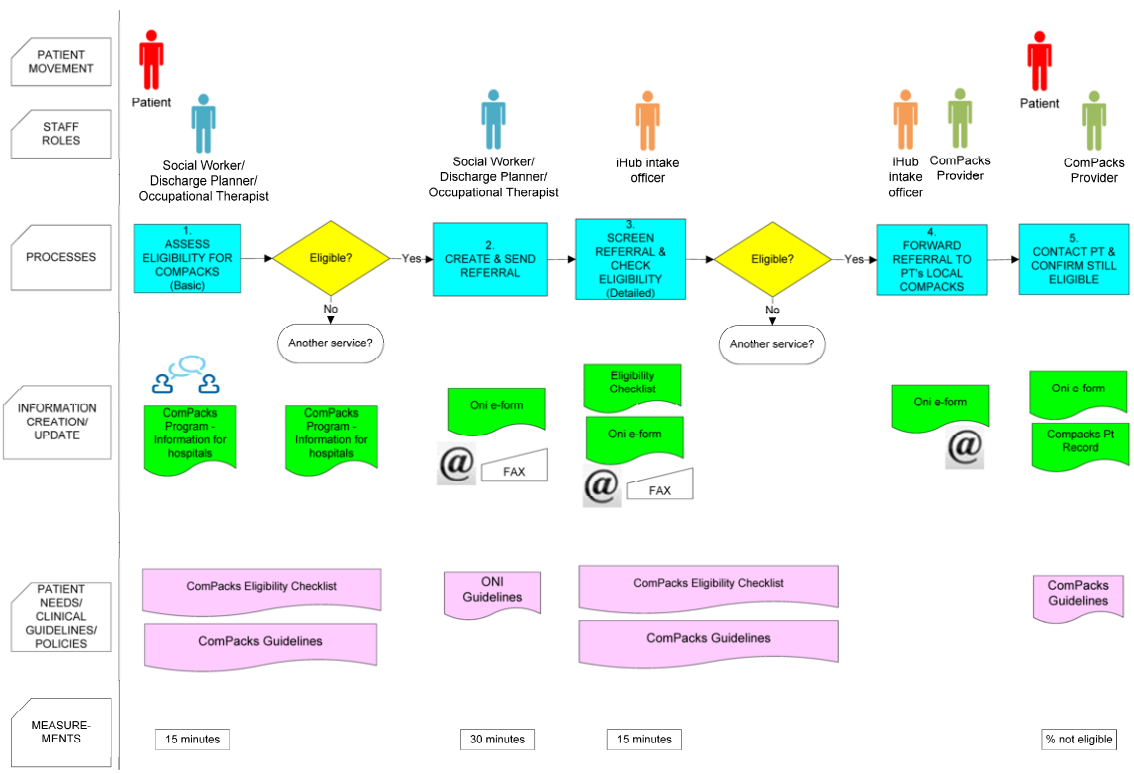

Figure 2 – Page 1 of post-policy change (Essomenic patient journey model)

Results and Discussion

Due to space restrictions the **pre-change policy model** has not been included in this paper however the description of an excerpt of the patient flow, **post-policy change** (see Figure 2) is as follows:

1. The in-hospital team discusses patient assistance requirements and performs a basic ComPacks eligibility check;
2. If eligible, the in-hospital team creates a referral and transmits this to Triple I Hub by email or fax (Triple I Hub is the centralised intake and intervention centre for the Local Health District);
3. The referral is screened for validity and a detailed eligibility assessment is performed by the Triple I Hub intake officer;
4. If eligible, the referral is forwarded to the patient's local ComPacks provider;
5. The ComPacks provider contacts the patient and confirms the patient is still eligible for an assistance package.

The journey continues on from this point and each individual service provider also checks the patients' eligibility for their particular service prior to commencing service delivery.

From the preliminary analysis conducted, two key policy impacts were identified between the pre and post change patient flow: the number of processing steps in the new policy has increased by over 44% and the number of service eligibility assessments have increased by 100% (see Table 1).

The increase in the number of processes is mainly due to the introduction of a centralised referral centre known as Triple I Hub. This centre receives all referrals from hospitals in the Local Health District, screens them for validity and performs a detailed eligibility check.

Table 1: Key preliminary findings of impact Pre- and Post-policy changes

Item	Pre-policy change	Post-policy change	% change
# of processes	18	26	44% increase
# of eligibility assessments	2	4	100% increase

The impact of the introduction of the Triple I Hub is a delay in the time taken to commence service delivery to the patient post-discharge and a number of processing duplications around eligibility assessment.

Eligibility is in fact checked four times in the new patient flow as shown in Figure 3.

Figure 3: Eligibility checkpoints as per latest policy changes

The visual representation of the patient flow readily identifies the increase in the number of processing steps, as each process is numbered.

The duplication in eligibility checking is also easily identifiable due to the decision points which are shown as yellow diamonds (See decisions between processes 1 and 2 and then processes 3 and 4 on Figure 2).

The Essomenic method of visual patient journey modelling provided ComPacks management with clear evidence on how they have been negatively impacted by State-level decreed policy changes at a operational patient flow level.

As a result of this study, it has been demonstrated that patient journey modelling can be used to visualise the impact of policy changes in community care services. There is high value in utilising Essomenic type models to illustrate suggested policy amendments prior to and after the implementation of policy changes.

Conclusion

Health policy plays an important role in the delivery of healthcare services. Policy guides providers during care processes whilst ensuring consistent service delivery and compliance to service criteria needed to secure government funding. Policies for care services are often amended by government bodies with the aim of enhancing and optimising services provided. However, it is perceived that changes made to policy can negatively impact workers, resources and workflow as well as the patient outcomes during service delivery. Therefore, it is imperative that all involved stakeholders understand and comprehend the impact of such changes and the ripple effects they may have on service delivery. This will not only allow for better decisions to be made on current and future policies but it will generate basic understanding for all those involved with the policy development process. In this study, focus was placed on utilising patient journey modelling, more specifically Essomenic, as a tool to visualise the impact of policy change on patient flow and service delivery in community care. There is value to be seen in using patient journey modelling as a tool to visualise impact of changes made to policy. It is a visual overview with representation of all elements that contribute to the policy process and provides solid evidence on the impact of changes on patient outcomes during service delivery.

Future work will investigate using Essomenic as a tool to evaluate and assess the impact of proposed policy changes to provide new value evidence to feed into the earlier stages of the health policy development cycle.

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