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Paper:

Condon , L., Burford , S., Ghosal , R., Denning , B. & Rees , G. (2018). Prudent healthcare in emergency departments: a case study in Wales. *Emergency Nurse*, 25(10), 20-23.

<http://dx.doi.org/10.7748/en.2018.e1762>

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Implementing prudent healthcare in the Emergency Department: a case study in Wales

Abstract

To deliver a patient-centred service Emergency Departments must be efficient, effective and meet the needs of the local population. Following the principles of prudent healthcare, a service redesign of unscheduled care was carried out at Prince Phillip Hospital, Llanelli to improve the patient experience. Extending the roles of specialist nurse practitioners was a major component of this redesign. Six working groups were established to guide the process, including one group with a responsibility for working cooperatively with the local community, who had concerns about perceived 'downgrading' of the Emergency Department. The service redesign was completed in 2016 and evaluation has shown that the target for patients being seen within four hours improved from 88% to 96%, significantly more acute medical admission patients were discharged in less than 24 hours and patient satisfaction increased overall.

Introduction

The Welsh government adheres to a policy of prudent healthcare which prioritises need, makes the most effective use of all skills and resources, and implements evidence-based practices consistently and transparently (Welsh Government 2016). In addition, a primary aim of prudent healthcare is to co-produce health and wellbeing with the public, patients and professionals as equal partners (Bevan Commission 2013). Wales is at the vanguard of a global movement to redesign health services according to prudent healthcare principles. In Italy, this work is known as slow medicine and in the United States and Canada there is a Choosing Wisely campaign (Welsh Health Circular 2015)- many other countries have similar initiatives as part of a global movement to avoid medical overuse (Morgan et al 2015). All these movements are concerned with providing health care which avoids unnecessary interventions and duplication of care, in order to provide the patient with a more efficient and safer service. These values are implicit in 'Leading Change, Adding Value (NHS England (2016) which emphasises better use of resources alongside better outcomes and better service users' experiences. The aim in Wales is to embed the principles of prudent healthcare in everything done in the Welsh NHS and to challenge every Health Board, clinician and patient to think daily about the things they can change and improve to secure better health and well-being (Welsh Government 2016).

Prudent health care is designed to improve the quality of care, while meeting the twin challenges of rising costs and increasing demand on health services (Aylward et al 2016). Prevention and early intervention are the most prudent of all healthcare activities and hence much emphasis is placed on this area, however unscheduled care is a primary target due to its use having increased exponentially throughout the UK in recent years (Hallaran and Robertson-Steel 2015). In Wales demographic and social changes have meant that the demand for health and social care services is increasing at a fast rate. By 2037 it is anticipated there will be a 3% decrease in the 16 to 24 age group, and a 50% increase in people aged 65 and over. Wales has a higher proportion of people aged 85-plus compared to the rest of the UK and higher deprivation rates (Nuffield Trust 2014). A changing demographic profile means an increase in age-related conditions, such as dementia and cancer, which place demands on health services. Griffiths and Middlemiss (2016) highlight that many cases of dementia are identified for the first time in the Emergency Department (ED). In addition,

the consequences of behavioural and lifestyle choices, including alcohol consumption, sedentary lifestyles, persistently high smoking rates in some parts of Wales and rising obesity rates across the country will result in an increased prevalence of a range of chronic and potentially life-limiting conditions (NHS England 2014).

Planning Emergency Department service redesign

In Prince Phillip's Hospital, Llanelli, a need for major service design was identified due to the challenges of a slow patient pathway through ED, difficulties in recruiting sufficient doctors and use of locum medical staff. Improving flow within the department was seen as a priority to prove the quality of service, as noted by fellow practitioners (Eitel et al 2010). Llanelli is a small post-industrial town in South West Wales, and is surrounded by a number of villages and communities in the Llanelli rural district. The majority of Llanelli town and district is more socio-economically deprived than the Wales average, with 12% in the lowest 10% of areas of multiple deprivation in the UK (National Assembly for Wales 2010). In the 2012 Hywel Dda University Health Board undertook a public consultation exercise on proposals to redesign ED service provision across the Hywel Dda University Health Board area. It was initially proposed that services in Prince Phillip hospital would consist solely of a nurse delivered minor injuries unit, which would have meant that significant numbers of patients presenting would have not be able to come into the unit and would have to be redirected to another hospital with consequent potential for delay in diagnosis and treatment. This was met by both public and clinical opposition and a Judicial Review was launched against the Health Board. Following the opposition to the original proposals the University Health Board established the redesign project.

As a first step in service redesign ED service were subjected to detailed analysis. A full year of anonymised patient attendance records were broken down by presentation pathways, demographics, and core stratifications, such as GP surgery and method of arrival. In addition year on year data was analysed to understand both in year and annual trends. Through the data it was found that patient numbers were increasing (a 5% increase year on year) and the majority of patients had minor injuries or illness (around two-thirds of attendances), which could be better treated by nurses and GPs, which accords with findings from other emergency departments (Atenstaedt et al 2015). Acutely ill medical patients entering the ED met with more delays than those directly admitted under medical teams, and there were high levels of duplication of assessment. Delays were in starting definitive treatment, and in review by senior physicians. Importantly the unit did not provide paediatric services or services for patients requiring emergency surgery, with these patients transferred elsewhere. In the case of paediatric services the receiving hospital was 24 miles away.

In order to develop optimal care pathways, the presenting complaints of total patient attendees were broken down into key conditions. Six core condition types were identified and a multidisciplinary work stream was established to consider each. The first task of each work stream was to map two potential pathways for that group, firstly assuming that the unit adopted a nurse delivery model and secondly that a combined GP and nurse delivery model was established. The consequences for patients under each option were assessed, as was the impact upon neighbouring hospitals. Following this process the nurse only model was discounted and a GP led model adopted. Analysis of patient data, in particular proximity to the hospital, age and prevalence of chronic conditions, led to the decision that **nurse only pathways would lead to increased patient journeys and more patients being diverted to alternative care facilities**. The process undertaken was endorsed by independent scrutiny review and subsequently the University Health Board was successful in defending the Judicial Review.

The new Acute Service Delivery model

The aim of the project was to design and implement a sustainable model to deliver safe care pathways for patients presenting at the hospital for unscheduled care. The project was clinically led by a spectrum of health care professionals including medical consultants and senior nurses. Taking a whole systems approach the redesign followed the principles of prudent health care, seeking to achieve best outcomes for patients without waste of time and resources (Bevan Commission 2013). Clinicians considered that there were gaps in the service offered to patients with problems relating to mental health issues, substance misuse and frailty. This information was used to ensure that staffing profiles in the new service model achieved the best match for performance and operational efficiency. In designing the service model the professional roles of staff working in ED took a secondary place to consideration of patients' health needs.

The following measures of success were agreed:

- To deliver a model which addressed the need for care of all patient groups who present to Hospital as an emergency, within an integrated framework
- To ensure that patients were streamed to the best care provider in as short a time as possible and that the need for transfer to other care sites was minimised
- To ensure that the model created was sustainable both in terms of staffing and cost
- To ensure that the model developed was clinically led and engaged with clinical and non-clinical staff and patient groups
- To ensure that the model was integrated into the Hywel Dda University Health Board Strategy for patient care

To deliver the project a programme board was established which included six multi-disciplinary working groups. The programme board provided strategic direction and scrutiny and consisted of representatives from medicine, nursing, pharmacy and the ambulance service, plus stakeholders such as the Community Health Council, the Rural Council and the chair of the local lobbying group. Involving the local community was a priority from the outset, as the proposed service redesign was seen as potentially 'downgrading' ED services in Llanelli; this aspect of service redesign therefore required sensitive strategic management. Keeping the focus on the patient at the centre was found to be the best way to engage the public and staff. The six multi-disciplinary working groups addressed minor injuries, minor illness, acute medical admissions, mental health, substance misuse and frailty, which were priority areas identified from the initial audit and staff/public consultation .

The key to redesign was separating walk-in patients from those who were more seriously ill. To this end an Acute Medical Assessment Unit (AMAU) was formed which took patients directly who arrived from a 999 call or through GP admissions. In this way it was intended that that seriously ill patients would spend less time waiting to be assessed and have earlier access to senior clinicians, resulting in a higher quality and more efficient service for the patients and their families. The AMAU has a resuscitation area and a stroke/FAST positive bed, step down unit and non-monitored beds along with a six chair ambulatory care area. Walk- in patients continued to arrive by the previous ED front door, which was reshaped into a purpose built Minor Injuries Unit (MIU), and were then triaged by an Emergency Nurse Practitioner (ENP) or GP. Patients with issues related to frailty, mental health services and substance misuse had access to acute assessment within the MIU. The redesign of the Acute Service Delivery unit (also termed Front of House) was supported by a £1.4 million award from Welsh Government which allowed for modification of the physical structure of the existing ED.

The new model of unscheduled care affected all staff groups from reception staff to consultants. Prudent health care necessitates the skills, competencies and experience of staff being used in the

most effective and efficient way. Imison (2009) identified the main skills and employment challenges facing the health sector, highlighting the issue that despite advances in medical science advances and the adoption of new technologies, traditional patterns of working and service provision have changed little since 1948 and the inception of the NHS. The Prince Phillip Hospital service redesign required staff from different disciplines and services to work in multi-disciplinary and multi-agency teams, agreeing who was best placed to provide care at a particular time in a patient's journey (Griffiths and Middlemiss 2016).

Implementation of the Acute Service Delivery model

The service design brought significant changes to the roles of those who worked in the department. All ED staff groups were involved in the planning and delivery of the project as those responsible for effective implementation and experts in patient care. Dr Sian Lewis, clinical programme lead, reflected that despite some initial resistance to change, a sense of common purpose developed within the hospital, which underpinned a strong sense of ownership of the new service model by ED staff. The new service model brought new challenges and opportunities for nurses. A training programme was provided for 12 registered nurses to work as Emergency Nurse Practitioners (ENPs) work with GPs in the Minor Injuries Unit. ENPs were senior A&E nurse with a number of years' experience and enhanced training, who were able to assess injuries and interpret x-rays. Eligible nurses who wished to train as ENPs were supported to do this. ENPs also undertook shifts within the existing Accident and Emergency Service to ensure they achieved the required competencies and confidence before the new service model was implemented. As a result a cadre of ENPs were established to run the nurse-led minor injuries service. A further 11 nurses recruited to support the Acute Medical Assessment unit (AMAU) and ambulatory care.

To support the priority area of substance misuse an alcohol liaison nurse service was introduced. The alcohol pathway required working closely with alcohol and substance misuse support groups, specialist substance misuse services, the police and the Welsh Ambulance Service. Where appropriate, patients who attended the MIU with problems relating to alcohol and both legal and illegal substance misuse were followed up as outpatients, in order to continue community work to alter behaviours. A preventive and harm minimisation approach was taken in the alcohol pathway. Dr David Samuels, who led this pathway, stated that, 'The aim in the service redesign was to reduce unnecessary admissions, whilst striving to ensure that these patients receive the support and treatment they required, most often provided in the community, reduce alcohol and substance misuse related harm and to prevent re-attendances to the hospital for identical problems'.

Evaluation

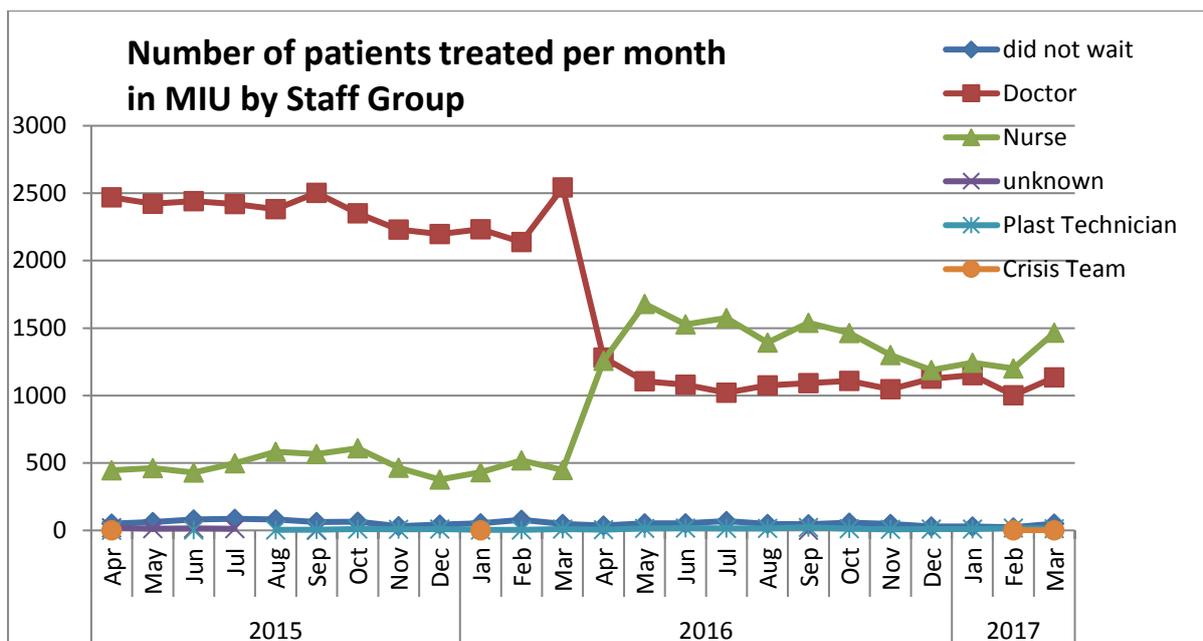
The new model was put in place in May 2016, having taken three years from the end of the health board consultation to the implementation of the new staffing model. By delivering improved patient pathways, measures such as patient experience, length of stay, and improvement in clinical outcomes could be demonstrated. Between July, 2015 and July, 2016 unscheduled care activity increased by 14% and the numbers of acute medical admissions increased by 50%. Despite this the staffing model proved resilient, with no ENP or GP vacancies in July 2016, and significant improvements in a number of objective performance measures. Patient comments were also collected in 2016 and showed satisfaction with both the patient pathway and the nurse-led service. When asked for comments patients in the newly opened AMAU said they were happy with their care and treatment, and In the minor injuries unit people reported good communication and trust and confidence in the nurses and doctors treating them. When interviewed in the department 6 months later patients described the environment as welcoming, comfortable and supportive (Hywel Dda Community Health Council Annual Report (2016-17)).

Table 1: Performance measures compared over one year (2015-2016)

ED Performance measure	2015	2016
Meeting 4 hour A&E target	88.4%	96.6%
Acute medical admission patients discharged in less than 24 hours	30%	47%
Acute medical admissions patients staying more than 48 hours in hospital	15%	9%

Figure 1 shows the change in numbers of patients seen per month in the MIU by doctors and nurses following Implementation of the Acute Service Delivery model. Up to April 2016 the majority of patients presenting at the Minor Injuries unit (MIU) were treated by doctors, but after this point more were treated by nurses. This illustrates a key tenet of prudent healthcare, which is to ensure that staff are consistently working to their highest competencies.

Figure 1: Number of patients treated per month in Minor Injuries Unit (MIU) by staff group



Conclusion

This case study has shown how prudent healthcare can bring positive outcomes for patients by means of a highly-trained workforce working to the best of its abilities. Changing the model of unscheduled care is challenging as it requires a multidisciplinary team to work together to assess the care they are providing and how best to meet the needs of the population they serve. There is considerable public interest in local provision of Emergency Services and it requires sensitive and well planned public engagement to gain acceptance of service change. Efficient and effective healthcare requires the skills of practitioners to be put to optimal use, and nurses have the potential to take enhanced roles in EDs or similar environments to improve patient care.

Acknowledgments are made to Mr Brett Denning and Ms Gail Rees of Prince Phillip’s Hospital who were both involved in this project from the outset. BD contributed statistical data and graphs, and GR assisted with further information in response to the reviewers helpful comments.

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