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Evidence to inform the primary and community care project team, North Wales

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Rapid review of primary and community care services provided in North Wales: current services profile

Rapid review of primary and community care services provided in North Wales: population profile of North Wales

Purpose and Summary of Document: This report is a technical document to inform North Wales Community and Primary Care project. The content reports on a rapid review of the scientific literature examining primary and community care interventions that move care closer to patients.

Publication/Distribution:

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Key Messages

- Healthcare systems need to change in response to demographic shifts and changes in disease patterns
- Good evidence for disease specific self-management programmes, mixed evidence for generic programmes
- Mixed evidence for risk stratification tools, and specificity suffers with increased sensitivity so if you seek to capture more at-risk cases you will add increasing numbers of not-at-risk cases too
- Good evidence for enhanced discharge planning, evidence that outreach services or consultant liaison models do not improve outcomes other than prescribing
- Limited evidence that broad chronic care programmes have positive effects, although patient satisfaction tends to be high.
- Good evidence that hospital at home services and specialist nurse led services can provide equivalent care to in-patient services
- There is evidence that rehabilitation in community settings is equivalent to hospital care
- There is no high level evidence in relation to function of community hospitals
- Lack of research evidence of benefit is not the same as evidence of no benefit

1 The rationale for moving care closer to patients

The World Health Organisation describes the issues faced by healthcare systems:

“Healthcare systems have evolved around the concept of infectious disease and they perform best when addressing patients’ episodic and urgent concerns. However; the acute care paradigm is no longer adequate for the changing health problems in today’s world. Both high and low-income countries spend billions of dollars on unnecessary hospital admissions, expensive technologies and the collection of useless clinical information. As long as the acute care model dominates health care systems, health care expenditure will continue to escalate, but improvements in populations’ health status will not.”¹

As part of their response to this challenge the North Wales community and primary care project group requested the National Public Health Service (NPHS) to undertake a rapid review of the scientific literature related to moving care closer to patients.

2 Findings from the scientific literature

The literature review strategy is given in Appendix A. It should be noted that due to time constraints a pragmatic literature review was carried out. The North Wales project group commissioned a comprehensive review of the literature in 2008 from York University which looked at shifting care towards community settings². This report seeks to update that review in order to ensure that evidence made available after York’s review was completed is critically appraised and included where appropriate.

The evidence base for what works in terms of shifting services to community settings, where appropriate, is mixed, interventions are often poorly described, lack a control group or of necessity, adopt a pragmatic design. Many studies are collections of small scale evaluations with few subjects. Some studies compare the intervention to usual care and this will vary dependent on location of the study. The York review states that some interventions are so firmly entrenched and accepted as common practice that it can be difficult to discover the original evidence base. It should be noted that lack of research evidence of efficacy is not the same as evidence of no efficacy.

For this report the evidence has been reported on using the following categories:

- Supporting self-management
- Risk stratification of populations
- Interventions involving secondary care providers
- Community-based care
- Interventions targeting the location of services

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2.1 Supporting self management

There is high quality evidence that self management programmes can improve how people feel about their condition and their coping ability³. The most convincing evidence tends to be for disease specific programmes, for example respiratory education programmes which have reduced acute exacerbations and concomitant hospital admissions. More traditional cardiac rehabilitation programmes for patients who have suffered a cardiac event have shown reductions in mortality and readmission rates². In addition Singh sites evidence for arthritis, diabetes, hypertension, asthma and stroke⁴. There is evidence from several systematic reviews of the literature that self management programmes can positively affect quality of care, clinical outcomes and resource use. However the reviews incorporate small scale randomised controlled trials and no attempt to combine them has been attempted³.

The Expert Patient Programme (EPP) involves a self management course facilitated by lay people with chronic conditions. The programme is supported by a not-for-profit social enterprise and was established as a Community Interest Company in 2007⁵. The ethos of the programme is that patients with chronic conditions may understand their conditions better than health professionals. Research evidence has been mixed. Recent randomised controlled trials have shown improved self-efficacy, mixed effects in relation to psychological health and quality of life and no change in respect to use of healthcare⁶. It has been argued that there are some misconceptions about the original Stanford model that gave rise to EPP, namely that self management training leads to significantly improved disease outcomes; that lay trainers have a greater effect than professionals; that the programmes lead to a reduction in health care usage and saves money. None of these outcomes are supported by research. Greenhalgh states that 'the evidence base for their efficacy is weak'⁷. There is evidence of improved psychological outcomes, notably self-efficacy and modest improvements for some clinical outcomes but no evidence for reduced costs, indeed more engaged patients may utilise health services mores⁷. Other interventions, with little evidence of benefit, that have been tried in order to support patients to self-manage include:

- Written information for patients
- Patient-held records
- Written care plans
- Self-monitoring.

Written information alone has not been shown to be helpful, however given as part of a comprehensive education programme it may be helpful⁴. A Cochrane review found no evidence that patient-held records improved outcomes⁸. Written care plans or action plans, held by the patient have not been shown to be effective, there is some evidence of effectiveness when used as part of a comprehensive education programme, in that they may help patients to adhere to treatment regimes or alter their management appropriately and be more knowledgeable about their condition⁹. There is some evidence that self-monitoring can help improve clinical outcomes such as blood pressure or blood sugar however this is not linked to more care being provided outside hospital^{10,11}.

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In addition Singh⁴ has identified new technologies as a potential beneficial medium for providing patients with information. This includes internet, video, mass media interventions; however the evidence so far is inconclusive.

2.2 Risk stratification of populations

The simplest form of stratification, practiced by the majority of GP practices across the UK is the compilation of disease registers. This relies on the practice coding patients, using READ codes, in a GP database system. Thus it is only accurate when the GP system for coding and entering data, is robust. Practices became computerised over a long time period thus those practices who have been computerised for a many years are likely to have more accurate databases. The position has improved with the introduction of the new GP contract in 2004 where GPs are incentivised to produce accurate disease registers.

There is some evidence that disease registers can improve clinical outcomes for patients, but not that it promotes a shift of care out of hospital.^{4, 12}. There are several risk stratification tools available, including those from the National Primary Care and Trust Development Programme (NatPaCT) and the King's Fund. Tools usually use an algorithm including patient information such as; age, sex, number of chronic conditions, number of medications, previous unplanned admissions.

The latest version of the Kings' Fund, patients at risk of re-hospitalisation (PARR)¹³ tool uses a very large number of parameters. Patients with a score greater than a threshold limit are designated as being at risk of admission in the next year. Sensitivity analyses indicate that higher scores are associated with greater specificity but low pick up rates whilst lower scores have greater sensitivity but low specificity. At a risk score of 50, 54.3% of patients who were admitted were identified; however 34.7% of patients were flagged incorrectly¹⁴. Incorrectly identified patients would have received a time consuming comprehensive assessment. Attempts have been made to model costs associated with the implementation of PARR. Expected cost-savings are predicated on the cost of the intervention, the number of admissions prevented and the specificity of the risk score threshold chosen. Using higher scores will miss some patients who will go on to be admitted. Using lower scores will pick up more patients who would have gone on to be admitted and more patients who would not have needed admitting. This results in a higher intervention cost.

Wales are currently developing the predictive risk stratification model (PRISM), a tool to help implement the Welsh Assembly's chronic conditions strategy, by risk stratifying practice populations into the tiers of risk identified by the strategy.

One criticism these type of tools is that a high reliance on previous high admission rates does not necessarily mean those patients will go on to be readmitted in the future, it may just be an indicator of exceptional circumstances at that time e.g. carer illness. This means any decrease in admissions based upon simple observational studies of groups rather than the whole population may be attributed to the statistical phenomenon 'regression to the mean'.

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2.3 Interventions involving secondary care providers

2.3.1 Integrated or shared care

Integrated or shared care describes collaborative working between primary and secondary care. There are several models for this. One model is where referrals to specialist services only happen after consultation between the primary and secondary care services, the consultation liaison model. A Cochrane review found little evidence of reduced referrals but that if used as part of a more comprehensive intervention it may affect GP prescribing positively in terms of quality. There was no evidence it impacted on clinical outcomes¹⁵. However outcome from this review, where many studies were based on mental health interventions, may not be transferable to other chronic conditions.

Another model of integrated or shared care is alternating appointments between primary and secondary care. This model has been used for managing some chronic conditions. While there is some evidence that improved communication between care providers results in reduced admissions the research evidence is mixed⁴.

Provision of a joint management plan or care where care providers each have a specific role is another model. This has been the subject of a Cochrane review¹⁶ which indicated that there were no improvements in physical health outcomes, number of hospital admissions or satisfaction with treatments. Again prescribing in primary care appeared to improve in quality. It should be noted there were methodological issues with the studies, mainly length of follow-up or short duration of intervention.

2.3.2 Integrated hospital teams

There is some evidence that altering the skill mix of hospital teams, with a movement to more multidisciplinary teams may have benefits in terms of reduced lengths of stay and hospital readmissions. The evidence is not consistent across all disciplines. A Cochrane review found beneficial outcomes in terms of reduced costs and lengths of stay¹⁷.

2.3.3 Discharge planning

Discharge planning involves a comprehensive assessment of the patient to ensure their needs following discharge will be met. There is some good quality evidence that this can reduce readmissions and length of stay and is beneficial in the transfer of patients from hospital to the community^{18, 19, 20}. Patients who received discharge planning were more satisfied than those who received usual care²¹. A New Zealand study identified little difference in outcomes whether the intervention was delivered by an individual or a team but found interventions occurring across the hospital/community care interface were most effective²².

2.3.4 Telemedicine consultations and telecare

Telemedicine consultations may be provided either by video or telephone link and are usually between a patient and specialist but in more remote areas may be used to provide

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access to healthcare for more routine care. There is evidence that telecare is acceptable to patients and healthcare staff and provides good levels of diagnostic accuracy and the technology itself is reliable²³. The evidence on cost effectiveness is unclear^{4, 24, 25}.

A related concept is telecare, using technology to monitor people in their own homes or as previously discussed allowing patient to participate in managing their own care. A Cochrane review on the use of smart home technologies, for example social alarms, electronic assistive devices, telecare social alert platforms, environmental control systems, automated home environments; indicated a lack of empirical evidence with which to judge them, no studies met the inclusion criteria²⁶.

2.4 Community-based care

2.4.1 Broad chronic care programmes / case management

The Department of Health's strategy for managing people with long term conditions utilises a model based on the chronic care model from the US²⁷. The most commonly cited frameworks in the UK are the Kaiser Permanente, Evercare, Unique Care and Pfizer approaches. Initial positive evaluations of the Kaiser approach were later criticised as flawed. Analyses showed that the populations cared for by the NHS and Kaiser in the US were different, that NHS costs used were incorrect and non-standardised data was used for NHS bed days²⁸.

The Pfizer telemedicine approach is based on targeting high risk individuals and uses nurse-led telephone support. No empirical evidence of efficacy was available for this programme other than in terms of patient satisfaction²⁹.

A recent before and after study of the Evercare programme on 62 GP practices between 2003 and 2005, demonstrated that the intervention had no effect on emergency admission rates, emergency bed days or mortality. Confidence intervals were wide, thus the study may have been underpowered to detect an effect. However the direction of effect within the confidence intervals seems to indicate a tendency towards an increase in admissions, emergency bed day usage and mortality, thus a negative effect of the intervention. The Evercare programme utilises community matrons, nurses who have undergone additional training in physical assessment and prescribing, to case manage vulnerable high risk patients. The authors conclude that 'employment of community matrons is now a key feature of case management policy in the NHS in England. Without more radical system redesign this policy is unlikely to reduce hospital admissions.'³⁰ It should be noted that this study was carried out prior to the wide scale introduction of community matrons in England and the additional investment in their education, training and supportive technologies.

Unique Care or the Castlefields' model is a hybrid managed care/integrated care programme. High risk patients with complex needs are identified using the simple EARLI tool, a set of trigger questions. Much of the evidence of benefit is made up of small scale evaluations which claim impressive reductions in unplanned hospital admissions^{4, 31, 32, 33}. This model is being promoted in England.

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Singh states that much research about the effects of multi-component managed care programmes is not high quality evidence. There are trials of some of the components of the programmes but few studies assessing best practice within broad managed care programmes themselves. In the main studies tend to be sponsored by industry or small samples. Many studies are based in the US and therefore are unlikely to be generalisable to the UK, where healthcare is funded and configured in different ways⁴.

2.4.2 Specialist nurses

Evidence is inconsistent for nurse-led interventions for chronic conditions³⁴. For diabetes a Cochrane review showed no difference between hospital care and specialist nurse care in terms of clinical outcomes. Costs were not considered³⁵. A study looking at the care of patients with rheumatoid arthritis by specialist nurses showed equivalent clinical outcomes at reduced cost³⁶. There is also good evidence that nurse led clinics, specifically for chronic obstructive pulmonary disease, asthma, heart failure, diabetes and people receiving anti-coagulant therapy are as effective as doctor led services³⁴.

A further Cochrane review assessed the evidence for substituting doctors with nurses in primary care settings. The review retrieved a mix of studies looking at care of patients with chronic diseases and first contact care for patients. Whilst the study suggests that appropriately trained nurses can provide as high quality care as primary care doctors, they suggest caution when interpreting the studies as substitution will only reduce doctor workloads where nurses are not employed in meeting unmet need or generate demand for care where previously there was none. Savings would be dependent on the balance of the differential between doctor and nurse salaries and the relative productivity of nurses and doctors³⁷.

2.4.3 Home visiting

The evidence for benefit is mixed for home visiting. The studies looked at home visiting interventions that contained a health promotion element and preventative care; all studies were in elderly populations. Several systematic reviews have been carried out with meta-analysis where possible of studies. There is some evidence of a reduction in mortality, compared to controls and a reduction in admission to residential nursing homes. No reduction in hospital admissions was seen, however patient satisfaction was high^{4, 38, 39}.

2.4.4 Rapid response for admission avoidance

This includes services for patients with sub-acute illnesses that avoid the need for a hospital admission. To a certain extent this area overlaps with the broad managed care programme, in that many of the admissions avoided will be due to prompt treatment of illnesses that if left may have required hospital admission. Attempts to evaluate the number of admissions averted are problematic, in that the judgement that an admission was likely is subjective. The evidence in relation to service based in emergency departments shows that whilst admissions are averted, savings are incurred by patients and carers rather than hospitals⁴.

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2.4.5 Re-ablement

There is some confusion as to the meaning of re-ablement. The Care Services Improvement Partnership (CSIP)⁴⁰ states:

“Within the social care and health arena there is much use of the words prevention, rehabilitation, intermediate care, re-ablement and enablement, and in many cases the services they refer to merge and blur.”

CSIP describes re-ablement as ‘services for people with poor physical or mental health to help them accommodate their illness by learning or re-learning the skills necessary for daily living’⁴⁰. As most schemes are in the early stages, long term evidence of benefit is not available. However pilot schemes have shown a reduced need for homecare. Services are usually provided by local authorities and focus on helping people to do things for themselves rather than having them done for them. A pilot in Leicestershire showed significant reduction in care hours required as compared to matched controls⁴⁰.

2.5 Interventions targeting the location of services

2.5.1 Hospital at home

Hospital at home describes services which require health professionals to deliver them but are amenable to being delivered in the patient’s home. If they were not provided at home then the patient would have to be admitted for care. Again the evidence is mixed in terms of benefits. There is some evidence of a reduced length of episode of care, higher patient satisfaction and a lower incidence of complications such as confusion^{4, 41}. Another Cochrane review implies that hospital at home used to avoid hospital admissions did not differ in outcomes compared to inpatient hospital care and economic analysis indicated that the intervention was less expensive than acute admission to hospital⁴². Hospital at home aimed at early discharge studies indicated that evidence on cost savings was mixed⁴³.

2.5.2 Community outreach programmes

Services can be delivered closer to patients by using existing buildings such as community centres. A Welsh Assembly report found no conclusive evidence of benefit for community outreach or collaboration with the voluntary sector³.

2.5.3 Intermediate care

Intermediate care describes services which are delivered on the interface of primary and secondary care. The term covers a broad range of interventions from more aggressive follow-up to admission prevention. An English national evaluation of intermediate care found little evidence that it reduced hospital usage; however where there was evidence of benefit the shared characteristic was effective partnership working between health and social care organisations and barriers were poor joint working and short term funding⁴⁴.

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2.5.4 Rehabilitation

A number of studies indicate that rehabilitation provided in community settings for a variety of conditions provide outcomes comparable to hospital settings. A Cochrane review showed that supported discharge with rehabilitation at home resulted in a reduction in long term dependency and hospital stay and a reduction in admission to institutional care¹⁹. However another Cochrane review on venue of rehabilitation demonstrated insufficient evidence to differentiate between care provided in care home environments, hospital environments and own home on outcomes in older people⁴⁵. A review looking at multiple sclerosis rehabilitation⁴⁶ showed it improved outcomes in terms of activity and participation, and a review of pulmonary rehabilitation⁴⁷ showed it improved health related quality of life. Most studies looked at rehabilitation for specific conditions and in some cases the benefits are condition specific e.g. pulmonary rehabilitation results in a reduction in acute exacerbations. However some benefits are more generic and with multi-component programmes, it may be difficult to assess which part of the programme has given rise to benefit.

2.5.5 Community Hospitals

A review of the literature by Glasgow University⁴⁸ found there was a lack of robust evidence in relation to the role of community hospitals, mainly as they had developed in an ad hoc way but also due to a lack of strategic vision. Evidence indicated that patients admitted to community hospitals tended to be older, indicating that admission was age related rather than related to condition.

The evidence in relation to the impact of community beds on acute hospital beds is mixed. Older studies tend to show a reduction of acute bed usage whilst newer studies don't show such a clear effect, this is likely to be due to changes in care delivered in hospital since the initial studies were completed¹. The same report suggests the following options for use of community hospitals; primary care centre, post-acute care management and intensive rehabilitation. While the report states that these roles are supported by the literature it does not cite any scientific references. Also there are some suggestions in the York paper which recent experience in Wales suggest are unwise for example.

3 Factors that affect implementation

Two large projects examined factors that affected implementation of new projects. The NHS Institute's Care Closer to Home programme⁴⁹ evaluated a range of field tests sites involving initiatives to shift services closer to patients. In their final report they identify a range of factors which affected the ability to shift care:

- Receptive organisational and policy contexts in which shifts are attempted
- A clearly defined focus for projects with specified outcomes and success criteria
- Organisational leadership and sponsorship of service improvement
- Dedicated and competent project management capacity as part of a team with relevant skills

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- Analysis of appropriate stakeholders to involve in change initiatives
- Engagement of and where appropriate leadership by clinicians
- Action to overcome cultural barriers to change and improvement
- Aligned incentives that demonstrate to clinicians and other stakeholders the benefits of participation
- Training and support to develop skills and competencies among project staff and clinicians
- Expertise in developing measures of progress towards objectives and analysing data
- Sufficient time to make shifts, particularly during a period of organisational change
- Arrangements for sustaining shifts and scaling them up, including developing business cases

Themes from stakeholder interviews cited by York University² in relation to the implementation of new schemes are:

“New initiatives are always slow to implement: they rely on enthusiasts and when these enthusiasts move on, innovative initiatives may flounder unless mainstreamed and adopted by a wider group. Initiatives are slow to implement across agencies, due to their complexity, unless there is strong buy-in. The models of care must be implemented across agencies/whole systems to achieve maximum benefits”

Tightly worded acceptance criteria, which may arise from risk averse approaches or those interested in maintaining the status quo, can limit the development of services.

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Appendix A

Literature Review - Search strategies

Scope

A pragmatic literature search was carried out to identify evidence of best practice in the delivery community based services and shifting services from secondary to primary and community care

Search methodology

Several well conducted systematic reviews of the literature were identified. The pragmatic approach of searching for literature available after these reviews were conducted was adopted. As the systematic reviews covered up to the start of 2008, the following electronic databases and websites were searched from Jan 2008 – March 2009.

Electronic databases

Medline, Cochrane library, HMIC, CINAHL, Embase

Websites

NICE <http://www.nice.org.uk/>

Department of Health <http://www.dh.gov.uk/en/index.htm>

Welsh Assembly Government <http://wales.gov.uk/?lang=en>

Royal College of Nursing <http://www.rcn.org.uk/>

Birmingham University – Health Services Management Centre National
<http://www.hsmc.bham.ac.uk/>

Primary Care Development Team (now the Improvement Foundation)
<http://www.improvementfoundation.org/>

The references of identified articles were searched for other relevant research. Websites of health organisations in Wales were also searched.

Questions looked at in the literature review included:

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- Comparative quality of services traditionally provided in hospital but being provided in the community
- Services and technologies that can be used to promote care in the community
- Evaluations of (above) identified services and technologies
- Any systematic or large scale well conducted literature reviews that looked at services transferred from hospital to community
- Is there evidence on the best way community services should be configured

Inclusion criteria

- Studies carried out in primary or community care
- Studies related to care of older people (excluding dementia only)
- Studies related to chronic disease management
- Any study design
- English language

Exclusion criteria

- Studies and papers relating to services which have limited generalisability to a North Wales setting.
- Studies looking at social care only
- Studies looking at children's services
- Studies looking at mental health services only
- Studies looking at out-of-hours services only

Selection of studies

The titles and abstracts of search results were screened for relevance by the author. Where studies were judged to be relevant a full article was obtained where necessary. Other papers were found by the author from the gray literature.

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