Initial uses of the PRISM risk stratification tool in CCM Demonstrator sites: a qualitative study
June 2010

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Acknowledgements

The author is indebted to the ready engagement of professionals working towards the improvement of chronic condition management in the preparation of this report. An enthusiasm for service improvement has been evident in the way that clinicians and non-clinicians alike have looked to PRISM as a potential resource in their day-to-day activities, been willing to explore its use in practice and crucially been willing to share their experience with others through this fact finding and evaluation endeavour.

Thanks to the Chronic Condition Management (CCM) demonstrator leads for their participation as both interviewees and gatekeepers, and to the other contributors across Wales who were equally receptive, frank and forthcoming in their participation. Particular thanks are extended to the following. From Cardiff - Ruth Jordan, Nicky Hughes, Neil Thomas, Alex Scott, Margaret Moss, Denise Browning, Kath Howells-Davies. From Carmarthenshire - Leo Lewis, Martin Holloway, Catherine Evans, Charlotte Walker. From North Wales – Janet Ellis, Christine Couchman, Karine Oldale, William Whitehead, Gwion Rhys.

Thanks also to Roger Richards (CCM Demonstrator Programme Manager), and to Cecilia Jones (IHC), Vic Heard (IHC), Helen Snooks (Swansea University) and Garry Smith (NLIAH) for their input.

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<tr>
<td>BSC</td>
<td>Business Services Centre</td>
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<tr>
<td>CCM</td>
<td>Chronic Conditions Management</td>
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<td>CCMD</td>
<td>Chronic Conditions Management Demonstrator/s</td>
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<tr>
<td>COPD</td>
<td>Chronic Obstructive Pulmonary Disorder</td>
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<tr>
<td>FAQs</td>
<td>Frequently Asked Question(s)</td>
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<td>HSW</td>
<td>Health Solutions Wales</td>
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<tr>
<td>IHC</td>
<td>Informing Healthcare</td>
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<td>IM&amp;T</td>
<td>Information Management and Technology</td>
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<tr>
<td>ISA</td>
<td>Information Sharing Agreement</td>
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<td>IT</td>
<td>Information Technology</td>
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<td>LES</td>
<td>Local Enhanced Service</td>
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<td>LHB</td>
<td>Local Health Board</td>
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<td>LMC</td>
<td>Local Medical Committee</td>
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<td>MDT</td>
<td>Multi-Disciplinary Team</td>
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<td>NHS</td>
<td>National Health Service</td>
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<td>NLIAH</td>
<td>National Leadership and Innovation Agency for Healthcare</td>
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<td>NRES</td>
<td>National Research Ethics Service</td>
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<td>OT</td>
<td>Occupational Therapist</td>
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<td>PARR</td>
<td>Patients At Risk of Readmission (tool)</td>
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<td>PRISM</td>
<td>Predictive Risk Stratification Model</td>
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<td>PTL</td>
<td>Protected Time to Learn</td>
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<td>WAG</td>
<td>Welsh Assembly Government</td>
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<td>WPRS</td>
<td>Wales Predictive Risk Service</td>
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Executive Summary

**Background and Purpose of Study**

This report identifies the users of the web based risk stratification tool PRISM within the three Chronic Conditions Management Demonstrator sites in Wales, and provides a descriptive account of how these users have interacted with the tool in their role as advance testers. Furthermore, these users contribute views on the future direction of PRISM and on further developmental priorities. This study aims to:

- Gather views on current and potential use of the tool at a practice and population level subject to information governance rules
- Describe the ways in which PRISM has been used at the CCM Demonstrator sites
- Identify the health care staff using or otherwise engaging with PRISM and its outputs
- Identify the potential use of PRISM in the broader multi-disciplinary team (MDT) setting in the demonstrator sites

This evaluation is primarily qualitative in focus, and is limited to the 13 CCM Demonstrator practices where there are particular opportunities to learn from the locality working approaches being tested. It complements work commissioned from Swansea University which involves additional pilot practices.

**Methodology**

The study used qualitative methods and a multiple case study approach to explore the use of PRISM within each of the three demonstrators. As the users of the tool at each site varied, different approaches were employed to suit. The main methods used were semi-structured questionnaire/interviews and discussion groups with users.

**Cardiff**

Five clinical case managers were the intended users in Cardiff. The case management service aims to assist individuals with complex chronic conditions to self manage their conditions and remain healthier for longer. Each case manager is based at one or more GP practices and is part of a wider MDT.

Due to sign up delays and difficulties only three of the case managers had used PRISM. Furthermore, use had been limited.

A group meeting was held with the case managers to discuss the early use and in, addition one case manager with the permission of their GP, undertook a review of the PRISM risk scores for their caseload. Preliminary findings from these exercises were that:

- The case managers were interested in applying PRISM as a case identification tool
- As they were at the early stages of knowledge, understanding and experience of PRISM they were non-committal on the degree to which it would provide a useful resource
- The case manager who had used the tool the most, noted that they felt the risk scores for many of the patients on their case load would be lower. However they
acknowledged that their service intervention, which would not be recorded on PRISM, would partly explain this. The same individual also noted that they had identified a number of queries around how the risk scores were calculated these had been fed back to IHC via the Cardiff Demonstrator lead.

- Overall, the case managers were keen to explore PRISM further, to build understanding. They looked forward to working closely with their GP and identifying their patient case loads on the PRISM system, and seeing which patients at Level 4 in particular were not on their radar (and why). The potential search tool (by NHS number), so that individual patients could be identified was felt to be an essential modification.

Carmarthenshire

The main focus of the PRISM engagement in Carmarthenshire has been on the work of the three recently appointed locality care services planning managers by the Health Board. Although NHS staff, these planning managers work across health and social care charged with identifying, planning and coordinating services to meet needs at each of the levels of the CCM model. Feedback was gathered by personal interview and through attendance at a multi disciplinary joint leadership group meeting in January 2010 which included other users of PRISM in the county (i.e. GPs who had taken part in the pilot).

Overall, the planning managers were keen to utilise PRISM in principle but were encountering numerous practical barriers. Each of them acknowledged the significant potential of PRISM to contribute to the identification of need, and the planning of services, yet there were challenges to the realisation of that potential:

- As they were not able to work remotely, it was time consuming for practice staff and the planning managers to consolidate data at the locality level, and searching (filtering) and then extracting any information from PRISM was difficult.
- The planning managers were resolute that in the future and once Information Governance rules were developed some social care data would be needed if the tool was to be integrated into the ways of working of both health and social care.
- One planning manager reported that some of the GP practices in their area were not currently engaging with PRISM as they awaited endorsement from the LMC.
- At the joint leadership group meeting, a discussion developed around what the purpose of PRISM was, and questions were raised around how success could be identified.
- The geography of different localities was acknowledged as an important factor in how PRISM might be used. Following a check of the permitted uses of PRISM with the national information governance team at Informing Healthcare, the Llanelli locality planning manager was given permission by GP Practices to extract anonymised data at an aggregate level to map PRISM risk scores (based on extracted postcodes), and then map a range of local services. However, they had subsequently recognised that the absolute risk scores would be more useful than relative risk levels in order to account for the differing practice population demographics.
- Overall, the planning managers were actively engaging with PRISM, with a particular interest in future working across GP clusters (at the locality level) to understand and map data. There was hope that as trust in PRISM developed (particularly from main users in primary care) then locality based approaches would be more easily applied, in line with where they saw PRISM as having the most potential.
**North Wales**

Gwynedd employs one locality care coordinator (akin to the aforementioned planning managers) who has been exploring PRISM in partnership with one of the demonstrator practice GPs. In addition two other GPs have been strongly involved in testing PRISM, and have provided feedback through face to face interview, email, and telephone interviews as part of the evaluation.

In each case the main approach of these users has been to identify and then explore further those patients at level 4 in the risk tool (level 4 was chosen consistently as it had a “manageable” number of patients to examine further).

For one GP, their experience with the tool had raised many questions (around how scores were calculated), and they were keen for these to be addressed before they fully committed to using it to identify patients to discuss within MDT sessions. In contrast, a GP at another practice felt that while there were many elements that people would not necessarily understand, the tool worked (in that it identified those most at risk) and that that was understanding enough. Feedback from the North Wales demonstrator sites included the following:

- Each of the GPs commented that they were reassured that the majority of patients within level 4 were known to them, although there were the odd exceptions which they had explored further.
- Looking at PRISM had reinforced the desire of one practice to have MDTs which in the future could include representatives from social care and pharmacy (along with district nursing and practice staff) in order to provide a holistic understanding and appropriate interventions.
- This fuller MDT representation was being achieved at the third practice and they were gaining a good understanding of individual patients across health and social care.
- In terms of patient improvement, the GPs largely felt that these would arise through future development of the case management potential of PRISM in tandem with MDT approaches which included a health and social care perspective.

**Conclusions**

The following comments address some of the main findings, themes, and observations following the evaluation work undertaken across Wales as part of this study and can be seen in greater detail in Chapter 5 (Conclusions).

For the majority of the users identified, using PRISM was their first venture into risk *stratification* tools but progress was made towards a better understanding of PRISM for future users. First impressions of PRISM were mixed, and often refined following further exposure to the tool. They broadly fall into two types of usage within the Demonstrator pilots, *case identification* and *service planning*.

Governance and practical arrangements are strongly geared to case identification whereas processes around multiple practice use and consolidating data are immature at present, precluding deployment until formal Information Governance processes are in place. As
such, remote access to anonymised or raw data is not possible for users, and they must be located on site.

The NHS locality care co-ordinators in particular would welcome, and depend upon, future improved practical access arrangements (subject to the caveats above) to support potential uses at locality level. This includes mapping work to consider risk scores and available services to meet need.

Service planners, being more detached from the data had less reason to question the accuracy/sensitivity of the data but also had no knowledge of individual patients, nor access to patient records. They were less inclined or able to interrogate the data than the case identifiers who were consistently comparing their understanding/expectation of patient’s risk scores with the PRISM score.

Although, as might be anticipated, most of the highest risk patients in a practice were known to practice staff, there were examples from all users of people whose risk score was much higher or lower than they expected. For those higher risk patients, the data provided impetus to further investigate these patients – in line with the case identification.

Undoubtedly, PRISM was becoming an important tool supporting GPs, MDTs and clinical case managers in their work – a tool that was complementing existing practice and judgement. For many of the users however, the processes they were putting in place will need longer to bed in and mature before benefits can be realised fully.

On a less positive note, the closer interrogation of data that case identifiers were inclined to undertake when identifying a patient of interest, had led to a number of anomalies whereby the user was unable to reconcile their understanding of a patient and their clinical notes with variables within PRISM.

Being able to delve deeper – to understand factors influencing particular scores was felt to be important for some users - as was a better understanding of how some scores were calculated. Further work may be helpful on making education resources available for the interested user to clearly understand how some scores are calculated.

During the time of the evaluation some improvements to PRISM functionality were made (e.g. searching) which provided added impetus to some users who were keen to explore new functions.

The most consistent area for “improvement requested” relates to social care involvement in PRISM work. Integration of social care data into the PRISM algorithm was seen as an important factor in developing integration between health and social care. Social care input into joint working arrangements (e.g. MDTs) was seen as a priority development to move forward the wider CCM agenda and to take PRISM forward.

Although they encountered different challenges en route, in their role of testing PRISM the users set out to interrogate, to find fault, to provide guidance to others and to feedback their findings and have been very successful in this regard.
Chapter 1: Introduction and Background

Introduction
This report identifies the users of the web based risk stratification tool PRISM within the three Chronic Conditions Management Demonstrator sites in Wales, and provides a descriptive account of how these users have interacted with the tool in their role as advance testers. Furthermore, these users contribute views on the future direction of PRISM and on further developmental priorities.

In addition, feedback is included from the demonstrator project leads and other relevant parties (e.g. chronic conditions leads and care coordinators) on their experience of engaging with primary and community care staff in relation to signing up practices to obtain (but not necessarily use) the tool as part of the PRISM roll-out. This information will help to provide an understanding of the issues and opportunities in advance of the planned future distribution of the tool across Wales.

This report represents a distillation of evidence built from engagement with users across the three Demonstrator sites. Much of the evidence provided has already been shared with the product’s development team based at Informing Healthcare. This has been largely through ad-hoc discussions via email, telephone and face to face, with a fuller picture provided here for the first time. As such this report is intended for health professionals with an interest in predictive risk tools in general, and for those with an interest in the Welsh PRISM tool in particular. This work complements a larger pilot study undertaken by Swansea University, and a training needs analysis undertaken by NLIAH.

Context
Interest in predictive risk has developed widely over recent years and the development of PRISM follows the introduction of similar tools in England (e.g. PARR) and in Scotland (SPARRA). It has long been recognised that there is an overreliance on secondary care services, and that many patients could be better cared for in primary care – and at a lower cost. There has been an increasing focus on targeting resources in order to provide more proactive patient management in primary and community settings and to reduce emergency medical admissions. Accurately identifying patients at the highest risk of unplanned hospital admissions is an important step in identifying appropriate and effective interventions for patients/communities.

Targeted work is ongoing in regard to chronic conditions as these patients often develop complex health and social care needs resulting in high usage of health and social care services. It is estimated that 78% of health care costs in the UK relate to people with chronic conditions such as diabetes, asthma, a lung condition or heart disease, and one in three people in Wales — an estimated 800,000 adults — suffer from at least one chronic condition (NPHS 2005). This figure rises as people get older, with two out of three over 65’s having at least one chronic condition, a third of whom will have multiple chronic conditions (NPHS op cit).

Evidence from the development and implementation of the Combined Predictive Model in England, upon which PRISM is based, has shown that it should facilitate early identification
of a patient’s health status irrespective of their stratified level and before their condition deteriorates. This in turn will allow differing levels of intervention intensity to be matched to the different levels of overall risk so that highly targeted interventions proportional to risk can be offered to patients.

At the request of the Welsh Assembly Government, Informing Healthcare procured Health Dialog (who had developed the PARR and Combined Predictive Models for the Department of Health) to develop a customised predictive risk model (algorithm) for Wales between 2006 and 2008. The development of PRISM is closely related to the key ministerial priority of service improvements in chronic conditions, as outlined in Improving Health and the Management of Chronic Conditions in Wales: An Integrated Model and Framework for Action (WAG 2007). The subsequent Designed to Improve Health and the Management of Chronic Conditions in Wales: Service Improvement Plan 2008-2011 (WAG 2008) includes the directive that “all LHBs will stratify the risks and individuals with chronic conditions in their population.”

**What is PRISM?**

PRISM is a tool that links inpatient, outpatient, GP and deprivation data to identify the likelihood of patients having an emergency admission to hospital over the next 12 months. The model divides the patient population into four distinct tiers; according to their increasing level of service need.

The tool uses the data from 37 separate variables in order to arrive at a predicted absolute risk (out of 100%) of emergency admission for each patient on a practice list (see Figure 1).

The tool also stratifies patients into four risk levels according to the relative risk within the practice as a whole. So for example, using the default stratification, the 0.5% of patients with the highest practice risk will appear at Level 4; those in the top 0.5 -5% in Level 3 (moderate risk); those between 5 and 20% in Level 2 (low risk) and the remainder in Level 1 (very low).

**Figure 1: Variables included in PRISM risk algorithm**

<table>
<thead>
<tr>
<th>PRISM Variables</th>
<th>Inpatient (8)</th>
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<tbody>
<tr>
<td><strong>GP Systems (22)</strong></td>
<td></td>
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<tr>
<td>Neurotic personality and other non-psychotic disorders</td>
<td>Inpatient admission (IA) with diagnosis of Cerebral Palsy and other paralytic syndromes</td>
</tr>
<tr>
<td>Poisoning</td>
<td>IA with diagnosis symptoms and signs involving the circulatory and respiratory systems</td>
</tr>
<tr>
<td>Sprains/strains of joints/muscles</td>
<td>IA with diagnosis symptoms and signs involving the digestive system and abdomen</td>
</tr>
<tr>
<td>Mental and behavioural disorders</td>
<td>IA with diagnosis abnormal findings on examination of urine, without diagnosis</td>
</tr>
<tr>
<td>GI disorders</td>
<td>IA with alcohol related diagnosis</td>
</tr>
<tr>
<td>Cephalosporins &amp; Cephamycins</td>
<td>Emergency admissions in last 12 months</td>
</tr>
<tr>
<td>Corticosteroid Clinical Use</td>
<td>Non-emergency admission</td>
</tr>
<tr>
<td>Loop Diuretics</td>
<td>Inpatient day &amp; night cases</td>
</tr>
<tr>
<td>Macrolides</td>
<td><strong>Demographics (3)</strong></td>
</tr>
<tr>
<td>Narcotic Analgesics</td>
<td>Age</td>
</tr>
<tr>
<td>Other Antidepressant Drugs</td>
<td>Age Squared</td>
</tr>
<tr>
<td>Penicillinase Res Penicillins</td>
<td>Gender</td>
</tr>
<tr>
<td>Sulphonamides &amp; Trimethoprim</td>
<td>OP visit following emergency admission</td>
</tr>
<tr>
<td>Ulcer-Healing Drugs</td>
<td>OP visit with referral from GP</td>
</tr>
<tr>
<td>Vitamin B Group</td>
<td>OP visit with outcome “Another appointment given”</td>
</tr>
<tr>
<td>Polypharmacy</td>
<td>Welsh Index of Multiple Deprivation (1)</td>
</tr>
<tr>
<td>Polypharmacy squared term</td>
<td>Deprivation score for super output area of residence</td>
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<tr>
<td>Smoking status</td>
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<tr>
<td>Total number of chronic conditions</td>
<td></td>
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<tr>
<td>CHF</td>
<td></td>
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<tr>
<td>COPD</td>
<td></td>
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<tr>
<td>Epilepsy</td>
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PRISM stratifies patients into four levels. This is based on relative risk of emergency hospital admission (very high, high, medium and low), it does not directly correlate with the Welsh CCM Model levels which are defined as follows:

- **Level 1**: Primary prevention and health promotion;
- **Level 2**: Population management: “Practice based” CCM programme;
- **Level 3**: High Risk Management: “Network based” CCM services; and
- **Level 4**: Case managed services.

In broad terms, the practical differences are as follows:

- **PRISM Level 4**: At this level there is a close correlation and probably all of the patients identified will be suitable for consideration of case management. However, not all will have a recognised chronic condition.
- **PRISM Level 3**: Some patients at this level will almost certainly warrant case management, although they have not been stratified at the higher Level 4. A manual search of the stratified list will have to be undertaken to identify those patients suitable.
- **PRISM Levels 2 & 1**: These patients are at medium and low risk of hospital admission, and many will not have a chronic condition. PRISM does not look at all risk factors which may lead to the development of chronic disease.

*Adapted from Smith, G (unpublished, 2009)*

Health Solutions Wales, part of the NHS Wales Informatics Service, are supporting PRISM with data consolidation perspective and have helped develop the web based tool (see screenshots in Figures 2-5). The secure process for data transfer is summarised as:

- Data extracted from GP system through Audit+ data management tool
- Data is split and uploaded over secure network to Health Solutions Wales (HSW)
- Encrypted GP data linked to encrypted secondary care data
- Algorithm produces stratified patient lists

The model will then interpret this data and predict each patient's relative risk of emergency admission within the next twelve months. Once the algorithm is run through the PRISM database each practice will be able to access their stratified practice population and view risk scores, via the web-tool. The PRISM module runs automatically on a monthly basis and it will allow populations to be re-stratified to reflect ongoing health status and health service usage (*IHC Website 2009*).
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Figure 2: PRISM screenshot - main data screen (dummy data)

Figure 3: PRISM screenshot - Threshold adjustment
Figure 47: PRISM screenshot - Patient scores (dummy data)

![PRISM screenshot - Patient scores](image)

- Risk group unchanged since last month
- Risk group increased since last month
- Risk group decreased since last month

Figure 5: PRISM screenshot - Variable summary (dummy data)

![PRISM screenshot - Variable summary](image)
How is PRISM intended to be used?

Risk stratification tools can be used to support care delivery, care service planning including cost calculations and population trend analysis: they can also be used to performance manage and to evaluate interventions (Nuffield Trust 2010, Carmarthenshire CCM Demonstrator 2009). In the first instance PRISM has been developed to work mainly at a practice level as governance arrangements for wider population level work are yet to be ironed out. However, the CCM Model and Framework outlines a potential role for PRISM in the work of CCM care coordinators, and this study does provide early feedback from such staff operating at the locality level. Perhaps the key message on usage however, is to stress that PRISM users, reported herein, were exploring the tool with open minds, unconstrained by firm directions of how to react to the data emanating from it. The intention of their exploration was to see how PRISM could potentially add value to their practice at present and in the future.

Who are the Demonstrators?

The CCM strategy set out in Improving Health and the Management of Chronic Conditions in Wales: An Integrated Model and Framework for Action (WAG 2007) recognises that services are currently unsustainable with an over reliance on traditional, and often inappropriate, models of care. Advance learning and evidence gathering to inform implementation and mainstreaming of the strategy is carried out in three CCM Demonstrator Projects in Carmarthenshire, North Wales (Gwynedd) and Cardiff operating from 2008 to March 2011.

The demonstrator sites were chosen as test beds for PRISM ahead of the rest of Wales as much of the work testing the CCM Model and Framework is at the new locality level and predicated on risk stratification. This involves co-ordination of services, ‘locality planning’ and is linked with the locality care co-ordinators forging new grounds across health and social care. A second key use of PRISM is at the individual patient level for both prevention and treatment. Both underpin the business change or ‘transition’ envisaged in the CCM strategy. In order to progress testing, the three CCM Demonstrators were invited by Informing Healthcare in February 2009 to make plans to test PRISM from spring 2009 and to feedback information to IHC on their experiences and through published reports such as this document.

While the Demonstrators gained sign up from practices to take part in the evaluation study they were subsequently requested by WAG to support the sign up (or registration) of all practices in their areas (total 102 GP Practices, as north Wales Demonstrator is Gwynedd only) and completion of a formal Information Sharing Agreement (ISA). This request was made in October 2009 with sign up required by December 2009 though due to practical time and resources this was not achieved until March 2010. The learning from this process is also shared in this report – providing lessons for the planned future roll out of PRISM across all GP practices in Wales.

Related Studies

As noted earlier, these findings are intended to present learning from the CCM demonstrator sites, and to complement the evaluation that Informing Healthcare commissioned from Swansea University on behalf of the PRISM Project Board. The academic study focussed on 25 pilot site practices (differing from the Demonstrator practices reported here) and sought GP feedback on through online questioning to address the following key objectives:
1. To ascertain whether PRISM is a sensitive tool for stratifying patients according to risk (i.e. does it work?)
2. To evaluate the usability and usefulness of PRISM tool (i.e. how is it used?)
3. To inform the broad benefit of the development of the PRISM tool (i.e. is it worth it?)

The Demonstrator work touches upon each of these areas but draws on a wider range of potential users (not just GPs) and uses primarily qualitative interviewing.

A further study of note is the Training Needs Analysis which was also commissioned by the Informing Healthcare PRISM Project. This study (August 2009-February 2010) looked at early views on the training and development resources that could improve the management of patients stratified by PRISM with particular emphasis on those at high risk of emergency admission.

All three studies have contributed to a “Way Forward report” prepared by IHC in March 2010 that looks at the future direction for PRISM, and for the Welsh Predictive Risk Service (WPRS). This report is available on the IHC website.

**Report Scope**

The following chapter outlines the approaches used to gather feedback from the demonstrator sites, and summarises the aims and objectives of the work. The results chapters provide an overview of the experiences of demonstrator staff in signing up practices to obtain the PRISM tool, and how the tool has been used. The final chapter provides a brief summary of the key learning points from the work.

A summary of this report, along with other related documents and links will be available on the CCM Demonstrator website – [www.ccmdemonstrators.com](http://www.ccmdemonstrators.com).
Chapter 2: Methodology

Introduction
This chapter summarises the anticipated aims from the Demonstrator PRISM evaluation; provides clarification of who was involved across the three sites, and summarises the areas explored with these participants.

This study aims to:
- Identify the health and social care staff using or otherwise engaging with PRISM and its outputs in the demonstrator sites
- Describe the ways in which PRISM has been used at these sites
- Gather views on current and potential use of the tool at practice and population levels to support the ongoing development of the tool
- Provide learning from the experience of CCM Demonstrator sites in rolling out PRISM across all practices

Methods
Primarily qualitative approaches were used to explore the use of PRISM, with depth interviewing (individual and group) the main data source in all three sites. Where applicable, document analysis has also been used to provide further evidence of points raised in interviews (where for example an interviewee refers to a document/email/presentation etc that they have previously prepared). Qualitative approaches were employed in order to provide a depth of understanding of the emergent issues and illumination of the subjective experiences of users. This study was intended as a complementary activity to the quantitative approaches of the Swansea University study, with different emphases, and a higher level of detail albeit from fewer practices/users. In each of the case study areas, semi-structured interview/discussion scripts were used, ensuring a clear reconciliation with the aims of the study, and allowing comparability between the different sites and users. The semi-structured approach allowed for interviewer flexibility in exploring themes that emerge and to probe, clarify and ask follow-up questions. Furthermore respondents were encouraged to expand on responses, digress or introduce their own concerns. Most importantly, their responses were open-ended, in their own words and not restricted to the preconceived notions of the interviewer (Davies 1999:95).

The following key areas were explored with PRISM users at each demonstrator site.

- Prior knowledge and awareness of risk stratification tools
- First impressions of PRISM
- Which health professionals have been using the tool?
- How they are using PRISM?
  - What have they focussed on and why?
  - How have they identified patients of interest (if applicable)?
  - How they link with other practice staff and other HSC providers using PRISM data (if at all)?
- Is PRISM identifying patients needing intervention?
- In what ways has PRISM been useful?
Is the tool straightforward to use?
Are there any concerns with the data PRISM has identified?
How would they like to see PRISM developed, if need be?
Future opportunities that PRISM presents at practice and population levels
Do they anticipate continuing to use PRISM (post testing)?
Ethical/governance issues

Note that the evaluation plan for this study does not reference any formal aims and objectives of the tool's use in the demonstrator sites, as the users were given license to explore its potential use based on local interest, priorities and structures, rather than having an imposed framework. With this license however came the understanding that learning would be shared with IHC and other interested parties along the way. This learning, often communicated by demonstrator users in real time (through email and telephone contacts with IHC and the CCM Demonstrator team), has already contributed to the ongoing development of PRISM, and indeed a revised version (1.1) of the tool was launched in March 2010 addressing a number of the issues raised herein. As such the evaluation work within the demonstrators is formative in nature, and supports other activities such as the PRISM user group (2nd December 2009) and learning (24th February 2010) events.

To address the final aim around learning from the registration process, interviews were conducted with those staff responsible for gaining sign up in each area, to provide an understanding of the processes they had followed, the challenges they had encountered and how they had overcome them. The key elements considered by these staff were:

- What approaches to encourage registration were used in your area?
- What factors influenced your approach?
- What challenges were faced?
- What was the reaction of the different staff groups to PRISM?
- How would you recommend other areas approach sign-up and why?

For accuracy, interviews were recorded where practical, and comments with quotation marks represent direct quotes from interviewees – either from written correspondence or interviews.

Participants/Sample

A total of 13 GP practices were taking part in the demonstrator testing of PRISM, made up of:

- 3 in North Wales (Gwynedd) – Minfor (Barmouth), Glanfa (Bangor) and Nefyn
- 5 in Cardiff – Clifton, Llandaff North, Canna, Bishops Road, Whitchurch Village
- 5 in Carmarthenshire – Fairfield, Adfer, Tywyn Bach, Tymbl, Brynteg

The CCM Demonstrator Project Leads had negotiated the involvement of these practices at the local level and subsequently identified the respective contacts associated with each.

In Carmarthenshire the main participants for the study were the three locality planning coordinators who worked with practices in the “three T’s” (Towy, Taf, Teifi), Llanelli, and Amman Gwendraeth localities. The coordinators work across health and social care charged with identifying, planning and coordinating services to meet needs at each of the levels of the CCM model. Feedback from two of the three coordinators was obtained in a discussion held as part of a locality group meeting (which included various community health and social care staff). Further comments and clarifications were subsequently obtained in email correspondence. The third planning coordinator was interviewed by telephone.
The clinical case manager service had volunteered to look at PRISM in Cardiff. The five team members – each connected to one or two individual practices – aim to help individuals with complex chronic conditions to self manage their conditions and remain healthier for longer.

The Gwynedd Demonstrator programme helped fund three GP leads to support CCM service improvements. These GPs (based at separate practices) were the primary PRISM users in north Wales, with one lead working closely with a care coordinator.

With regard to PRISM sign up, interviews were conducted with two of the three CCM Demonstrator project leads with the north Wales care coordinator and with the CCM lead in Cardiff. A written response was received from the demonstrator lead in Carmarthenshire.

One element for acknowledgement is that the users of PRISM represented in this report have had encouragement to use PRISM within their roles as part of their CCM Demonstrator links.

**Ethical Approval**

The project protocol was reviewed by the Research Ethics Service Manager for Wales and it was agreed that this service evaluation would not require formal NHS review.

**Timetable**

Across the 13 practices an implementation plan was followed to install PRISM and implement appropriate governance arrangements in line with existing protocols developed by Informing Healthcare. The national CCM Demonstrator team also arranged with Informing Healthcare’s Information Governance Team for a named contact to handle any queries from within the Demonstrator sites should they arise. As this process was undertaken by area, the practices had access to the working version of PRISM (complete with a month of GP data) at differing times. The Gwynedd practices received their first data in July/August 2009, the Carmarthenshire practices in September 2009, and the first of the Cardiff practices in November/December 2009.

In Carmarthenshire, feedback was gathered by telephone interviews and email correspondence (January-February 2010) and attendance at a multi disciplinary joint leadership group meeting in January, which included other users of PRISM in the county (i.e. GPs who had taken part in the PRISM pilot).

Two group interviews with the Cardiff case managers were held in September 2009 and January 2010 - each involving four case managers.

In relation to the PRISM registration process, interviews with project leads and care coordinators were held in December 2009 and January 2010.

**Presenting Results**

As there are clear distinctions between the core users across the three sites, the findings from each site are reported separately. These results, presented in Chapter 3, include detailed descriptions of the activities undertaken as well as user views. The second results chapter (4) collates the feedback relating to practice signup/registration to access PRISM.
Chapter 3: PRISM Uses and Usability

This chapter provides detailed descriptions of PRISM usage in the CCM Demonstrator sites, confirming who the users are, how they have used it and what they found as a result. It should be noted that there are differences inter- and intra- sites (i.e. between north Wales and Carmarthenshire, but also between different users in North Wales in particular). Reflective of this perspective, the findings are presented by area, with further disaggregation by different users in north Wales and Carmarthenshire.

North Wales

**Overview**

Gwynedd employs one locality care coordinator (akin to the aforementioned planning managers) who has been exploring PRISM in partnership with one of the demonstrator practice GPs. In addition two other GPs have been strongly involved in testing PRISM, and have provided feedback through face to face interview, email, and telephone interviews as part of the evaluation.

In each case the main approach of these users has been to identify and then explore further those patients at level 4 in the risk tool (level 4 was chosen consistently as it had a “manageable” number of patients to examine further).

For one GP, their experience with the tool had raised many questions (around how scores were calculated), and they were keen for these to be addressed before they fully committed to using it to identify patients to discuss within MDT sessions. In contrast, a GP at another practice felt that while there were many elements that people would not necessarily understand, the tool worked (in that it identified those most at risk) and that was sufficient. Feedback from the North Wales demonstrator sites included the following:

- Each of the GPs commented that they were reassured that the majority of patients within level 4 were known to them, although there were exceptions which they had explored further.
- Looking at PRISM had reinforced the desire of one practice to have MDTs which in the future could include representatives from social care and pharmacy (along with district nursing and practice staff) in order to provide a holistic understanding and appropriate interventions.
- This fuller MDT representation was being achieved at the third practice and they were gaining a good understanding of individual patients across health and social care.
- In terms of patient improvement, the GPs largely felt that these would arise through future development of the case management potential of PRISM in tandem with MDT approaches which included a health and social care perspective.
Dwyfor Locality

The role of GP leads, as helpfully outlined by the Nefyn GP was to “… improve cooperation between practices and others and between clinical teams that already exist, in order to improve patient services”. Supported by the demonstrator work, they were encouraged as part of this role (one/two sessions per week) to investigate new ways of working - such as PRISM. Their testing of the PRISM tool coincided with the Gwynedd demonstrator piloting an approach around Unique Care (which looks at improving multi disciplinary working) and had agreed to test the potential role of PRISM within this new arena. The MDT had met on three occasions over three months up to January 2009, bringing together a GP and practice nurse, district nurse, a community nursing team leader, a palliative care nurse, a social worker and a community pharmacist. Previous MDTs had been running in the area, but without the social work and pharmacy input. The GP did note that there had been difficulties in gaining full commitment from the local authority to provide social worker input – and that this was a challenge for integrated working right across Gwynedd. Overall however, they felt that the MDT could provide a joined up, holistic approach to dealing with individuals from a health and social care perspective.

“Who can reduce that risk can vary massively. Just getting one GP to look at the list won’t be enough assuming you can do something to reduce their risk. I think it very much does need a structure”.

Describing traditional MDTs as “.. problem based..” the GP felt that a different cohort was likely to be identified through PRISM – and that these may not have previously been “.. flagged as problematic per se”– despite a high risk of emergency admission.

The MDT approach was to use PRISM to support the identification of priority patients with the highest risk scores (levels 3 and 4 in the PRISM pyramid) and to jointly understand their circumstances and their needs. In terms of physically accessing the PRISM website, it was the practice manager who logged in and collated an (unedited) list of patients for discussion in the MDT, from where patients were identified for discussion through an intentionally “fluid…in part random” process that did not constrain deliberations - “as it is a relatively new thing”

“…In the first MDT meeting we look at the stratified list level 4 down to 3 – but mainly level 4. There are probably around 49 patients at level 4. On identifying patients of interest (that usually takes a few minutes) we then use a pro-forma which everyone populates in advance of the next meeting. The approach is important. It is not so helpful to talk about the patients on the day - it needs to be informed and prepared. This form has sections for all disciplines, including ourselves, and pharmacy, district nurses etc. Basically we populate it with collaborative information. After putting together the pro-forma, we identify who knows the patient best and they take an informal lead on the patient – i.e. a named individual –sometimes the GP, sometimes the district nurse, sometimes the social worker. We hope to develop the plan (pro-forma), so that it can be integrated into district nursing and social work etc. and to get it to a point where it is sharable with the patient”.

The pro-forma (see Figure 6), part filled in with data extracted from the GP clinical systems, is then manually updated by the other MDT members. Because they need to share one document however, there have been difficulties – and people do have to visit the practice to
update it (as to ensure compliance with security and information governance rules it is stored on the secure practice server). While recognising this as a pragmatic solution at present, the GP proposed that in the longer term, “…such a document may sit better outside of the NHS accessible to health and social care” but recognised that there was considerable planning (technical and governance) needed to achieve this vision.

Figure 6: Multi-disciplinary team pro-forma - example

Further details of the purpose and direction of the pro-forma and how it is supporting the work of the MDT will be published as a CCM Demonstrator learning paper on multidisciplinary documentation. This will be made available on the Demonstrator website in late 2010.

Having held three MDT sessions, the GP was encouraged by the progress of the MDTs, although the ‘early days’ status of the work meant that patient benefits had yet to be realised. Nonetheless, from the clinical perspective they saw great value in developing “coherent” plans informed by a mixed group of professionals bringing a range of knowledge and skills together. The GP also proposed that the approach provided a “fuller clinical picture” by encouraging a “full medical review across diseases” – rather than the condition specific approaches that are often employed.

“You know in terms of QoF what needs doing, and the practice generally do well, but QoF only looks at one illness at a time”.

In terms of the tool’s ability to identify at risk patients (i.e. does it work) the GP reported that while they had had doubts initially - “from the technical perspective”, in general it seemed to be “about right” – and they confirmed they were “happy that it does tend to work”. The GP confirmed that PRISM was gaining further impetus from other members of the MDT who were keen to progress the work further.

Although the GP was largely satisfied that PRISM worked, they saw opportunities for improvement and refinement, based on their experiences.
Export limitations
The GP noted there was no export facility and that a lot of cut and paste work would be needed to extract any more than one page worth of details.

Limited filter and analysis opportunities
Recognising the “...wealth of information” underlying the PRISM risk scores, the GP was keen to have enhanced access to some of the raw data -

“If I highlight six patients, and want to find out why they have high scores it would take a long time to put into another document. We need to give some thought as to how we get data off it, and put that in a useful way. What I would want would be a csv file of all the patients and risk, score etc”.

The GP was also interested in being able to isolate conditions/variables of interest, noting for example the likely future interest of pharmacists in stratifying the pharmacy variables as a future development opportunity. This thought had prompted them to question of “who are we stratifying for?”.

“If we think of PRISM as a tool, then as it is, it will not be of use to a pharmacist and a dietician – the pharmacist will want to know who is on a lot of drugs, who has had a lot of changes recently, who is not picking up the drugs that were prescribed, or not responding to treatment. The dietician will want to know that all new diabetics will have been referred to her, and that those with high Hba1c’s and BMI’s are on her radar.” [Comments supplied by email]

While keen to proceed with PRISM related activities, the GP lead recognised that the work did require resources within their practice, and as well as their time in the MDTs there was also an administrative impact on the practice in "coordinating, minuting, agendas, folders et al. Basically there is a resource implication. If you try to roll out the model without a resource it might not work.”

Summary view
From a practice perspective, the GP considered PRISM to be reliant on the MDT process, suggesting that in its current format it would be interesting but perhaps have limited use outside of such a structure. Furthermore they stressed that the tool should not be used on its own, but as part of a clinician’s wider toolkit. Their vision of a future PRISM tool however was far more dynamic:

“..As ever I’m a pragmatist...as long as you appreciate what it is trying to do (predict risk) – it does that. It doesn’t really tell you much about what you need to do. No guidance on what the problems are and what needs addressing. What I’d be looking to develop is that point of view and closing the loop and PRISM giving a report to the patient. It’s some way off but all the elements are there – and we are trying to do that here. It is a crude tool at the moment, and the more it gets refined the better."
Arfon Locality

In Arfon, the GP CCM lead was implementing work around PRISM, supported by the locality care coordinator. In gathering feedback from both, a joint discussion was undertaken onsite at the respective practice in January 2010.

On discussing their involvement with PRISM, the GP recognised they were undertaking an advance testing role, and had united with the care coordinator to take this role forward, jointly identifying a number of issues to be fed back to IHC.

The GP and care coordinator did have a clear vision for how they saw PRISM being used, with discussions very much focused on the tool’s role as a case finding tool to support inter-agency identification of patients for proactive management:

“...the point of it as far as the practice is concerned is to identify the people who are at risk whom we can then flag up in multidisciplinary team meetings in order to prioritise resources to them in such a way that we’re being proactive and not just crisis responding to their needs. At the moment it has not been running long enough for us to do that properly”.

The practice approach they had piloted was based around monthly MDT meetings in which at risk patients identified by PRISM could be jointly discussed and followed up for assessment if appropriate. Two MDT meetings had already been held, albeit without full membership as social care representatives were unable to attend due to capacity issues. These meetings initially focused on the highest risk score patients (levels 3 and 4), with collective discussion resulting in the identification of patients for assessment (by district nurses in the first instance).

“...the district nurse, instead of going out and doing the usual district nurse visit, which will be changing dressings or whatever will be about sitting down, talking to them, understanding the support structures and all the rest of it and from that making a determination of whether a social services referral assessment might be helpful”.

These initial meetings had revealed that most of the patients at level 4 (17 in the first meeting list) were known to MDT members – and the GP in particular. However, there were some that were unfamiliar, raising curiosity...

“...well why is that person there? You know, and that’s where then you look at them and you drill down and you say, okay, why is PRISM telling me that this person needs some additional input? So what we’ll usually do then is have a look at the indicators beneath that – it takes a little while to load up – and also have a look, now that we’ve got 3 months’ worth of information there... you can actually start to see a trend”.

Overall, although committed to this approach, there were vulnerabilities if not all disciplines were represented in the MDT meetings. Social care representatives were unable to attend either of the two meetings, and district nurses were absent from the second – leaving just a GP, pharmacist and care coordinator. The absence of social care representation was particularly felt with their involvement – and the inclusion of their data – considered important markers of the commitment to integrated services, and to the consolidation of knowledge between health and social care.

The care coordinator expressed an expectation that a high level of support would already be in place for those at level 4, but noted that until social services were able to join in with the
MDT meetings it would be difficult to know the extent of social care support in place. And this point was explored further by the GP also…

“At the moment, social services are completely independent from the rest of us (in primary care). So we have no idea who they go in and see, who they’re delivering care packages to…unless they have some kind of medical crisis, we don’t get involved…A lot of that can be preventable and the converse of that is if we know people have got visible problems; if they are likely to need social intervention soon or they might need some temporary assistance, (for example, if you’ve got a patient caring for her husband, she knows she’s got to have an operation, what happens to the husband when she goes in? Do we have to find an emergency placement for him?) We can sort out contingency planning.

What we want to do is have a system whereby we don’t have to have everything going through the GP either, so that district nursing or social services can refer patients to each other; they can do joint assessments. Because at the moment, for example, people have to come to me and say, “My father can’t get up the stairs; he needs to move downstairs or a chairlift or a walk-in chair or whatever.” I’ve got to contact social services. They have to go out and assess. They’ll go out and assess and make a decision. I don’t get told what that decision is. 6 weeks later, the patient will come back to me and say nothing’s happened. So I’ve got to phone social services again to see what’s happening and we get no feedback at all, we don’t know what the plans are. And what we want is a service that joins up between social care and healthcare which steps up and steps down according to patients’ needs.

But if we all sit down in the same room together and discuss the same people, then we have a much better idea of what’s happening. I sit here in my little room and people say to me, “I have problems getting up and down the stairs”. It’s not the same as if you go to the patient’s house and see them and see how their stairs are, if their house is filthy or not. If people come here, they’re perfectly presentable; you go to their houses and they’re living in, you know, they’ve got no electricity, they’ve got no heating, you don’t know what’s going on. Social services might know about it but I don’t.

As far as PRISM is concerned and looking just from the risk of an emergency admission, if you have two people with the same medical condition, the person that has social support is less likely to need the admission, right? Because if you’ve got your mum looking after you at home…She can look after you at home; you’re not going to hit the panic button because you know that someone will be there if there’s a problem. If you’re on your own and you’re isolated and if there’s a problem you’ve only got two options: one is doing nothing about it and the other is hitting the panic button and going into hospital. We say, well, you could stay at home if there was someone to make sure that this happens and that happens and the other happens but as there isn’t anybody there, we have to send you into hospital. From that point of view, if we don’t know who’s got a social input or not, it will make a big difference to looking at the risk but this PRISM risk score doesn’t take that into account.

But it’s something that we can modify when we’re discussing people providing we’re getting the whole MDT together…

And it would prevent duplication as well because if you’ve got a district nurse going out and doing something then social services are going out and doing it independently; they both do it for their own data and their own records. If one person did it and their data was shared, it would be so much simpler.
Primary care, secondary care, it doesn’t tell you anything about the social side. It doesn’t tell you anything about what district nurses’ input is, it doesn’t tell you what voluntary sector support or anything they might have in place …Or what support they’ve got at home…”

The MDT did report surprise that some other chronic conditions were not included in variables:

“…What it’s not picking up is things like musculoskeletal conditions, if someone has severe arthritis or something like that which would affect things, it’s not picking that up as a chronic condition. If someone has Multiple Sclerosis it won’t be flagged, and that’s kind of fairly high risk, certainly for some people more than others. Again there are people on dialysis. They don’t get flagged up as having a chronic condition…..”

Outside of the key messages around the importance of multi-disciplinary engagement with the tool, the GP and care coordinator’s testing of PRISM had also led them to a number of queries and issues, which are briefly summarised below – with supporting quotations where appropriate:

**Mortality screening**

“Everyone that we’ve had die since the very first data extract, they’re still on the list. I mean they get closed. They transfer out. So they’re no longer active patients. So PRISM should only be, presumably, screening the patients that are active; not the patients that are no longer here. If the records get closed, it shouldn’t be looking at records at all, should it? Or am I being stupid? Because I don’t understand it. Mrs X died when the first list came out and she’s still on it on this list 3 months later…if you’re trying to promote this to other GP practices, if all the dead patients come up they’re going to just laugh in your face”.

**Filtering**

“You can do 0 to 44, 45 to 64, 65 to 84 and 85-plus. I think what the teams have been saying is that filtering out all under-18s would probably be something they would want to do and they would probably want to look at all over-65s. But breaking it down into those particular groups doesn’t particularly tie in with anything that we're trying to do.”

The GP provided further exposition on the desire to filter out the younger age group:

“Because the kids have all got lots of special services already involved. There isn't anything additional we can do in order to reduce their risk of readmission, and also there are these people that are coming up quite high on the pyramid are kids that have had their first asthma attack or they’ve had an appendix or a chest infection or something like that. They’ve not tended to be people that are at a particularly high risk of admission. It’s just that they have an acute illness and they went in. And if they are complicated people (we do have one or two complicated kids) they have got full paediatric support, paediatric nurses, community nurses, social workers, everybody is there all the time supporting them and there is nothing additional that we can do; it just means that the whole system is getting clogged up with other names that we’re thinking, what they there for? And we’re not too sure what’s happening. Chronic conditions, as far as the Demonstrator is concerned, is primarily
focussed on over 65s, we’ll work our way down to the 18s-and-overs and the adults only. So if we knew about people when they were, say, 17, if they were flagging up then as being high risk, that’s got to alert us to the fact that when they hit 18, their children’s services stop, something else needs to be in place to take over, but all the younger ones than that, there’s nothing additional that we can usually offer them”

Note that following this feedback (and similar points raised elsewhere) additional filtering was provided in PRISM version 1.1.

Tracking Data (reconciliation with notes)

The GP confirmed that there had been a few surprises in terms of people lower down the PRISM who they would have expected to have been higher. One patient in particular who had been regularly hospitalised in England with seven emergency admissions (because of her condition) scored significantly lower than anticipated. Their theory was that some or all of these admissions were not being counted, but if that was the case they were unsure as to why. They also reported similar difficulties reconciling the PRISM data with their own patient notes – with other patients appearing with higher risk scores than they would expect:

“We have been struggling with the results relating to “neurotic personality” and other “non-psychotic” and the mental and behavioural disorders in as much as many patients who are flagged as one or the other don’t appear to have those conditions...Even looking back in time, we can’t find what would trigger someone to be labelled as neurotic”

Being unable to find the supporting evidence within the patient notes, the GP and CC were concerned that coding errors may be having a pronounced impact on scores:

“...Yes. I think the problem is, you know, you can look at this list and you can say, yes, that’s quite logical, there are one or two in there that I might have put elsewhere and there might have been a good reason for that but once you start drilling down, trying to understand it, and you see, well that’s not right, well that doesn’t make sense, well, I can’t see where it’s getting that from. Then you start to mistrust the data and therefore the list.

Some of them have been higher than we might have expected and when we’ve looked through, some of the risk factors didn’t make sense. So it’s going back to one of the issues that we’ve noted before: they might have been noted as neurotic or with a non-psychotic disorders and there is no indication in their records of anything like that. So there are bits and pieces that we look at and we just say, hmm”

Other queries with the PRISM data were mentioned around co-codamol, narcotic analgesics, alcohol and most notably polypharmacy. Indeed the discussion of polypharmacy scores in PRISM as reprised here reveals much about the interest of these users in gaining an enhanced understanding of the PRISM calculations:

“...The other one is the polypharmacy numbers, which we just couldn’t relate to. You know, we tried various ways of counting, whether it’s repeat scripts...

Looking at people saying how is it calculating the polypharmacy? No idea. You know, some people have got 25 active repeats on their journal and you see a polypharmacy of three and, you know, they’ve had it for months and months and months. So we thought, maybe it’s excluding things like the pill, but it wasn’t. Maybe it’s excluding creams. Maybe it’s adding this, that and the other. Maybe it’s counting all repeats ever. Maybe it’s counting acute prescriptions. We could not find anything that would match what was happening to the patients. You know, the
consistency isn’t there. We don’t know whether it’s the number of scripts, we don’t know whether it’s current scripts, we don’t know whether it’s repeat scripts. There is no indication that we’re aware of. You could take all of this at face value but … actually what you want to know is why this patient is being flagged as such a high risk. (GP)

So there is a discrepancy there. I don’t understand why I cannot work it out. If I’m looking at polypharmacy and I have a number from PRISM polypharmacy and I’ve got the practice computer records of the patient in front of me, why I can’t make those two things match up”.

**Sensitivity of change in scores/graphs**

Referring to the graph for patients the pair recalled that even the smallest of changes in PRISM risk score were marked as an increase or decrease, rather than no change. Their slight concern was that this could be misleading without closer inspection. Further examination of individual patient graphs also led them to question the scale of the representation of these small changes – which appeared exaggerated in some cases where only a narrow range of scores was presented. Additionally, the labelling of the date axis on the individual patient score graphs was also queried – in respect of there being multiple points for the same months – some with different risk scores. That is not to say that they thought there was an error per se, but certainly confirmed some confusion over its presentation. (See Figure 7)

“..Did they do two data downloads in November? I don’t think they did. I don’t quite understand why that would be. But if this is a timeline then it should be equal. And it’s another of those little things that makes you say, hmm, why?”

![Figure 7: Example risk score tracking graph (note multiple monthly scores – queried by GP)](image)

**Data updates (timelag)**

“…There’s the time it takes for secondary care admissions to be coded on the system and the time taken then for obviously the PRISM algorithm to be run on the data that’s received. So while the GP data is relatively up-to-date, admissions data won’t be updated as quickly as we might like and I think that when you’re trying to deal with things on a month-to-month basis, that’s a bit of an issue”

**Lack of a search by patient option**

“One of the difficulties with this is that at the moment it doesn’t allow you to search for a patient so, you can’t say where’s this person? “
Overview

In summing up their experiences with PRISM, the GP and locality care co-ordinator shared the opinion that despite some of their difficulties the tool had significant potential to make a positive impact in its role as supporting multidisciplinary working across health and social care. The GP commented that while PRISM was something to work with it would be equally important to ensure the involvement of organizations and individuals – and their commitment to integrated working. In gaining further commitment to PRISM however, the GP and CC did feel that the tool needed revisiting, to better support their work and to reassure them (and their peers) that it was accurately predicting risk:

“..I think having calmed down about (PRISM) after my initial concerns. It has potential. It’s just not there yet. Once it’s tweaked, I think it will be great but unless it can be reliable and consistent, it’s going to be difficult to get it accepted.

Whether it’s just the way that we’re using it, whether there are issues with the algorithm, whether there are issues in the way that it’s picking up or coding information. I don’t know. Certainly at the moment it’s raising questions about the validity of the list. That’s not to say it’s not useful. I think it’s very useful. I think it’s being used. I think it’s allowing the MDT to identify those patients that they might need to look a little bit closer at (unclear) put some additional work into. I think the concern is that for GPs to put this into place, they need to... they need to see it as being a benefit and at the moment, a lot of them will see it as being additional work.

GPs who are very cynical about what it throws up and whether or not it’s valid. And so those are the things that will probably need to be addressed if it’s going to be widely used. I think as a concept it’s great; I think it’s probably kind of halfway there. And I think we have to accept that. It’s designed to predict emergency admissions. What I need it to do is to tell me who is at high risk generally, not just emergency admissions. Who needs the most care? Because I need to be trying to give them the better care regardless of whether or not they need to be in hospital or not. It’s not just about keeping them out of hospital; it’s also about improving their quality of life and improving their care at home generally.”

Meirionnydd Locality

The third Demonstrator practice was based in Meirionnydd, with one GP leading the PRISM testing as part of their role as GP lead for chronic conditions (which included some sessional time funded by the north Wales Demonstrator). Their experience with the tool was based on receipt of PRISM three months prior to the discussion (December 2009).

The GP confirmed that their practice had been happy to look at PRISM, as a “go-ahead” practice, especially in light of their participation in the Unique Care multi-disciplinary team development process – which they were also trialling as part of their Demonstrator work. As such the testing of PRISM in the practice had been based around case discussion in MDT meetings. The practice had not initiated a new meeting but had “piggy backed” on to existing palliative care meetings – which another practice partner had instigated. The GP explained how they had helped to integrate a chronic conditions perspective to these meetings of practice staff and district nurses:

“...One of my partners has a diploma in palliative medicine, so she is very interested in palliative medicine and has run monthly palliative care reviews. My argument was
that if you are dying of cancer you have nurses all around you - palliative care nurses, home nurses, district nurses, McMillan nurses, specialist nurses. If you are dying at home of COPD you don’t see anyone. Clearly there is inequity and yet the suffering of COPD is probably as bad if not worse than someone dying of cancer. So that is the argument I have used with district nurses to get them to take on board the chronic disease agenda and we slotted this process in to the palliative care meetings, so as well as discussing those patients with actual palliative care we then discuss the patients with high PRISM scores.”

The GP confirmed that initially they had brought a list of patients at level 4 (circa 25) to the two meetings held thus far, and envisaged looking at patients at the top end of level 3 in future. However, they did express doubts over the practicality of looking beyond the top level:

“…To have 24 patients of whom 4 are already known, one is dead and, you know, is not that arduous but if we are going to start looking at 50 or 60 it becomes a different kettle of fish.”

Making up the MDT sessions were district nurses, practice nurses and the GPs. Social Services had been invited and were expected to attend future meetings (with workload/capacity issues to be resolved), and pharmacist representation was also being sought:

“..The person we don’t have, and I would like to see them there, is the local pharmacist and again that is to do with workload and the regulations have been changed haven’t they, to allow pharmacists to leave the premises but those regulations are still not that clear, and because he works for a large company who have a vested interest in beefing up the commercial side, so we don’t have the local pharmacist.”

The GP reported that the patients in level 4 were known to them and that none had been a surprise to them. However, this did not necessarily mean that they were receiving optimum care, and the exercise had helped promote debate around individual needs and circumstances, as with the following case:

“..This person (on print out of level 4 patients) is very interesting and I think justifies the (PRISM) model. It is a chap called Mr. X, who is around 70. His nature makes it very difficult to engage with him, but he does have awful COPD and heart failure. Because he is so unpleasant, he is crisis managed and nobody has really taken him on board… I was chatting to (a fellow GP) about him and we said ‘Yes, that’s why he is there’ and it is a message telling us that we need to engage and we need to bite the bullet really.”

A second example of a case discussed in the MDT was also provided, with further support having been provided as a result of discussions:

“..The first meeting that we had we identified a lady who is currently number four on the list who has got COPD and lives in a little house with no heating, only an open coal fire. She is only partially sighted. Really quite difficult circumstances. She refuses any input from social services and has bounced in and out (of hospital) with multiple exacerbations of COPD. We asked the district nurses to be involved and the respiratory nurse and have put in shed loads of input and she has had just as many admissions as she ever had. We also got her central heating put in as well and that
doesn’t seem to have changed it, but it doesn’t mean anything, you can’t base policy on a single example, but it is a bit disappointing because we worked quite hard…”

Although in this example, there had not necessarily been a clear impact on the number of admissions, the GP felt that in this case the length of admissions had already been shortened as there was increased confidence in the availability of support on discharge.

Prompted by the interviewer, the GP reflected on the tool’s use of emergency admissions data as a proxy to identify those requiring better management – rather than a tool to support reducing emergency admissions per se.

“..I think it is really important that message, because there is phenomenal cynicism from GPs as you know, that the man management and all of this is just about reducing work for secondary care and making it harder for your primary care, and that as far as I am concerned is not the message; the message is to improve care generally”.

**Initial impressions**

The GP attested that their practice were “excited” to see who their high risk patients were, and had been reassured that “…we knew the patients identified”, and these matched their expectations.

“It puts down on paper what you feel in your gut and it is face validity isn’t it? It is, I think it is right. When I first saw the list of patients my reaction was ‘Yes, yes, that’s fair enough’ and that’s really important for selling it.”

In relation to the algorithm, they acknowledged that they were less interested than other users in the detail, and happy to take the outputs at face value.

“..I know if you look at the algorithm it looks bizarre but who cares? If the algorithm works it doesn’t matter what is on the algorithm and that’s fine. 
I take a very pragmatic view. You have your algorithm, it doesn’t matter if they paint their hair pink, if it works and is reliable and valid and repeatable it doesn’t matter.”

However, differences within scores were picked up and the following comments illustrate how further investigation of two patient’s scores had provided valuable contextual information to understand the differences in predicted risk that were presented.

“What struck me last time about the model was two patients, both of whom had severe COPD but with other significant co-morbidities, and I would have said medically they were six of one and half a dozen of the other. Yet one was about number four and the other was about number 96, and I thought ‘that’s interesting, why is that?’… the patient who was at number 96, his wife had a background in healthcare, so she was very skilled at looking after him, she knew her way around the system and was relatively confident, and a lot of admissions are around confidence…”

In recognising the key role of social support, the GP confirmed that this was an area that they were keen to focus on, and indeed they had identified five patients from the latest PRISM list for whom they were particularly keen to see increased social care involvement. Scanning the latest high risk list however, the GP felt that other needs were often being met, and that they may not be able to add value to many of the patients with highest risk scores – for instance those with high level psychological, alcohol or personality disorders - and already under the community mental health team.
Referring to the Unique Care project, the GP supported a comparison of patients’ identified by the EARLI questionnaire (a seven question risk identification tool – which includes social care aspects) with PRISM risk scores, hoping that such an exercise might help to stratify patients at level 3 in PRISM – and thereby “…identify those patients…that we should focus on”.

A further development that the GP proposed as a possible model was the coming together of secondary and primary care staff in a virtual clinic model such as that being tested in relation to diabetes care (also as part of the north Wales demonstrator work).

“…to have a PRISM meeting where you look at levels say four and top end of three with a COPD chest Consultant and actually say ‘Okay, let’s have a look at those patients with COPD who are pitching up here and have some expert input’ would probably be of more benefit. Because you would get ‘Well I think you ought to do this, you ought to do this, you ought to do that, maybe I should see him and organise x, y, z’ but they would also see the psychological and social components, and it would be educational for all sides.”

The interviewer noted the tool provided a risk score for every patient, and that risk scores could be ascertained for any individual. Although this was not an existing area of work the GP was attracted to the use of PRISM to support case identification within the practice.

“..That makes perfect sense…because if you are seeking a patient and trying to assess what their risk is then that would be helpful. We could build that into the protocol for the chronic disease clinics (which the practice already operates). The Nurses work out their risk score and any risk score above say 20% that has not been identified as having x, y, z are all then having to be referred to the Doctor, so you could build into your system that, you know, if the PRISM score is over let’s say 40% and it has not been identified, refer to the Doctor.”

The GP was not initially keen to focus on particular age groups:

“..maybe I am missing the point, but if someone is at significant risk it doesn’t matter how old they are, you want to try.”

...and also recognised that the information would not be up-to-date:

“…there is an issue around the arrows indicating changing risk score, and there is clearly a significant lag because very often it is counter to what we would expect. … in terms of selling this to a sceptical audience, if it is not helpful don’t include it.”
Overview
Five clinical case managers were the intended users in Cardiff. The case management service aims to help individuals with complex chronic conditions to self manage their conditions and remain healthier for longer. Each case manager is based at a named GP practice and is part of the multi-disciplinary team.

Due to sign up delays and difficulties only three of the case managers had used PRISM at the time of writing. Furthermore, use had been limited.

A group meeting was held with the case managers to discuss the early use and in addition one case manager with the permission of their GP undertook a review of the PRISM risk scores for their caseload. Preliminary findings from these exercises were that:

- The case managers were interested in applying PRISM as a case identification tool
- As they were at the early stages of knowledge, understanding and experience of PRISM they were non-committal on the degree to which it would provide a useful resource
- The case manager who had used the tool the most, noted that they felt the risk scores for many of the patients on their case load would be lower. However they acknowledged that their service intervention, which would not be recorded on PRISM, would partly explain this. The same individual also noted that they had identified a number of queries around how the risk scores were calculated these had been fed back to IHC via the Cardiff Demonstrator lead.
- Overall, the case managers were keen to explore PRISM further, to build understanding. They looked forward to working closely with their GP and identifying their patient case loads on the PRISM system, and seeing which patients at Level 4 in particular were not on their radar (and why). The potential search tool (by NHS number), so that individual patients could be identified was felt to be an essential modification.

Introduction
Cardiff LHB implemented a clinical case manager service in April 2008, employing five case managers each attached to individual GP practices. The service aims to:

- Help individuals with complex chronic conditions to self manage their conditions and remain healthier for longer
- To avoid admission or reduce length of stay should admission be unavoidable
- To provide support for individuals in their own homes
- To optimise independence for individuals and their carers and enhance their quality of life
- To proactively manage patient problems and engage with other professionals and statutory or voluntary organisations to resolve them.

[Source: Cardiff LHB Presentation 12th June 2009]

The CCM Demonstrator lead and CCM lead for Cardiff agreed to involve the case management service in the PRISM testing, building on relationships with these staff and their associated practices and a recognition that the practices had already shown a willingness to engage in new ways of working (such as case management). As one case manager subsequently reflected – “we are in proactive practices, open to new approaches”. 
Group discussions were held with the case managers and CCM lead on October 12th 2009, prior to receipt of PRISM and then again on 25th January 2010 – both within regular meetings of the team. Four of the case managers were in attendance at each group with the CCM lead also present for the first discussion.

Findings
The first discussion confirmed a limited understanding of PRISM, but a distinct interest in the forthcoming exploration of the tool. In particular, the group were interested in seeing where their clients appear in PRISM – i.e. at which level of the pyramid, and in identifying potential new clients particularly amongst the high risk patients.

In relation to the first point there was speculation over how the case management service might impact upon scores – with the CCM lead querying “if these patients are lower down the risk levels than might at first be expected then that might be due to case manager intervention”.

Further debate however proposed that “the number of drugs patients are on may rise following referral to their service, as might the number of (appropriate) secondary care admissions” – and consequently a patient’s PRISM risk score may in fact rise due to the recalculation of the polypharmacy and outpatient visit variables.

In terms of previous awareness, the case managers had some experience of cardiovascular risk tools, but risk stratification was cited as a new (and welcome) enterprise in their work, noted for being far removed from the “traditional model of reactive nursing”.

By the time of the second group meeting, three of the case managers had been given permission to access to PRISM by the GP Practice and had begun to explore its use, albeit over only a few sessions. One further case manager planned to look over the tool the next day. There had however been delays in the registration and access process, partly because of delays across the several steps required to sign up to PRISM, including the Information Sharing Agreement, and verification from the Caldicott Guardian.

Once agreement and information governance compliance to view the data had been achieved, the case managers who had looked at live data had initially examined the list of patients at level 4 in the PRISM pyramid, with a view to identifying patients unknown to them or otherwise worthy of further investigation (i.e. potential cases). This level was considered the default point in including the highest risk patients – and those in principle most likely to be provided with case management services (as per level 4 of the Welsh CCM model). While one of the non-users suggested they would be “scared” if there were names at level 4 that they did not recognise the users had largely been reassured prompting an assertion from one that “it had not brought up any surprises”.

Another group participant had identified patients of interest and went on to discuss them with their GP – to gain a second opinion:

“Individually I pulled some of the patients and sat down with the GP to discuss them. How come you haven’t referred this patient to me I asked? For example there was one patient in level 4, an elderly lady with heart failure. The GP said ‘I didn’t think there was any need to refer her to me as she is already on the right medication and she doesn’t bother us very much, so we assume everything is fine.’”

This feedback prompted a discussion of referrals, on which PRISM was seen as having the potential for a significant impact in terms of enhanced case identification. The existing
approaches to case identification/referrals revealed an organic, informal system that had developed over the eighteen months of the service, typically with “word of mouth” referrals from a range of practice staff – GPs, nurses and even receptionists, and some community staff such as social workers. Although originally planned as a case finding service this aspect was limited, although some clients had been identified through GP system searches.

Figure 8 summarises the referral sources and reasons for the case manager caseload of one branch practice – emphasising a range of referral sources but most notably GPs (9 of 17 referrals).

Figure 8: Sample of case manager referral source/reason

<table>
<thead>
<tr>
<th>#</th>
<th>Referral source</th>
<th>Reason for referral</th>
<th>PRISM level</th>
<th>Risk Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>GP</td>
<td>Immobility - no coping</td>
<td>L3</td>
<td>25%</td>
</tr>
<tr>
<td>2</td>
<td>Social Worker - Llandough</td>
<td>Falls - hospital admissions</td>
<td>L4</td>
<td>56%</td>
</tr>
<tr>
<td>3</td>
<td>GP</td>
<td>Living alone, not coping</td>
<td>L3</td>
<td>15%</td>
</tr>
<tr>
<td>4</td>
<td>Social Worker - Highfields</td>
<td>Not coping - dementia/falls</td>
<td>L3</td>
<td>22%</td>
</tr>
<tr>
<td>5</td>
<td>Community OT</td>
<td>Fall/hip operation - multiple medical problems</td>
<td>L3</td>
<td>36%</td>
</tr>
<tr>
<td>6</td>
<td>GP</td>
<td>Falls</td>
<td>L4</td>
<td>63%</td>
</tr>
<tr>
<td>7</td>
<td>GP</td>
<td>CCM review</td>
<td>L3</td>
<td>34%</td>
</tr>
<tr>
<td>8</td>
<td>GP</td>
<td>Complex medical problems</td>
<td>L4</td>
<td>39%</td>
</tr>
<tr>
<td>9</td>
<td>Practice Nurse</td>
<td>Repeat visits to surgery</td>
<td>L4</td>
<td>50%</td>
</tr>
<tr>
<td>10</td>
<td>GP</td>
<td>Uncontrolled diabetic</td>
<td>L4</td>
<td>43%</td>
</tr>
<tr>
<td>11</td>
<td>GP search - CCM</td>
<td>CCM Assessment</td>
<td>L3</td>
<td>38%</td>
</tr>
<tr>
<td>12</td>
<td>Reception staff</td>
<td>Increasing calls - mental health</td>
<td>L4</td>
<td>46%</td>
</tr>
<tr>
<td>13</td>
<td>GP</td>
<td>COPD - failing</td>
<td>L4</td>
<td>78%</td>
</tr>
<tr>
<td>14</td>
<td>GP search - CCM</td>
<td>Poor mobility</td>
<td>L3</td>
<td>21%</td>
</tr>
<tr>
<td>15</td>
<td>GP</td>
<td>Complex Chronic Conditions</td>
<td>L4</td>
<td>43%</td>
</tr>
<tr>
<td>16</td>
<td>GP</td>
<td>Medication review</td>
<td>L3</td>
<td>35%</td>
</tr>
<tr>
<td>17</td>
<td>Social Worker UHW</td>
<td>Post knee replacement</td>
<td>L3</td>
<td>16%</td>
</tr>
</tbody>
</table>

A challenge acknowledged by the case managers was their capacity to accept new patients into their service, with each confirming that they were already oversubscribed (at up to 65 patients each), and that it was in practice difficult to discharge patients from their caseload. As such, there was an apprehension that if they identified patients through PRISM they may not be able to manage them,

“I think PRISM is a great idea but my fear is that I won’t have the time to stand back and look at PRISM as I am so busy already.”

However, another case manager confirmed an intention to release some capacity in order to use PRISM for case finding:

“What I plan to do is discharge some patients and then go on to PRISM and start pulling patients from off there and start reviewing them, rather than getting new referrals from elsewhere.”

Within the group the early impressions of PRISM were characterised by a strong belief that the tool could be a valuable resource in case finding:

“When PRISM first came out, we as case managers were quite excited, because at the moment we have a non scientific way of identifying patients; it’s just plucking them out of thin air – and more often than not when we go out to see patients they are one off visits, which to me is a waste of resource. For me it is a case of how best
can we identify patients – that’s what we thought PRISM would be all about. Clearly there is a lot of work still to be done with PRISM.”

The latter qualification was very much driven by this case manager’s exploration of the tool over the previous weeks, and by some of the frustrations they had encountered along the way. Box 1 - an excerpt from an email sent to IHC from the case manager and demonstrator lead, identifies some of these issues, highlighting a particular desire to better understand how scores are calculated, and thereby to reconcile risk scores with primary and secondary care patient notes.

Extract from email to IHC from case manager/demonstrator lead

| 1) | Are the variables weighted differently? For example we had someone stratified at 37.77% and another stratified at 78.28% but the differences reported in the variables were negligible and we couldn’t work out why this might be the case. |
| 2) | Does PRISM overwrite last month’s data when it extracts and presents more data? |
| 3) | How long do things like admissions etc. appear on the system as a variable? |
| 4) | Could you tell us a bit more about the deprivation score? |
| 5) | Are different chronic conditions weighted differently? |
| 6) | How will the people using PRISM know when a new risk score is available? Do they get an email to let them know? |

The points raised in the extract reflect a lack of detailed understanding over the tool - reasonable in the context of their piloting its use - but also an enthusiasm for gaining such understanding which was felt would be helpful in facilitating further engagement.

“A better understanding of PRISM would help us to sell it within our practices. Not that there is resistance particularly, but if we understood it better we would talk about it more readily”…

“Yes we probably shy away from talking about it at present, knowing that we might not be able to answer questions raised”.

For example, the “limited” filtering options were noted (age band, gender, number of chronic conditions), with requests for increased flexibility and customisation – so as to easily filter out cohorts that they may not routinely support, e.g. children, those with mental health issues. Filtering was seen as a potentially powerful function in the enhanced targeting of particular patient groups. The group noted that it was possible to manually search through patients in level 4, which represented only 0.5% - i.e. 50 patients in a 10,000 patient practice and at level 3 (4.5%) but inspection of patients at level 2 was impractical without filtered targeting – “ideally using any of the variables”. There was acknowledgement within the group that patients in lower levels would be likely to be less well supported, and that there may be service gaps. Agreeing with this sentiment, one case manager reported how they had investigated further down the list and selected patients to examine in more detail:

“The demonstrator project lead and I looked at Level 2 patients, filtered for the over 85’s and found a patient in her 90s and drilled down and found that they hadn’t been taking their medication for two years. Nobody had even reported in the patient records if she was being followed up, being seen by anyone, so I followed her up - went to review her. She was very hypertensive, and had had numerous falls at home. She has now been referred to social services for a care package. That was one we would have missed if we had just been targeting level 3’s and 4’s.”

Note that all of the patients in the sample caseload listed in Figure 2 were in levels 3 or 4, suggesting that the case managers were dealing with high risk patients. Further work is planned to work closely with GPs and collect all of the risk scores for patients within the
Cardiff case management service; and to monitor these scores over the next six months. In addition the referral sources for each case manager will be collated as a baseline to quantify current referral patterns, with future comparisons able to identify the impact of PRISM on case identification and referrals.

Searching for a patient on their case load was at the time of interview an entirely manual process. However the case managers welcomed the proposed search by NHS number additional functionality – as featured in version 1.1.

Although the case management service was set up primarily to deal with chronic conditions, in practice their scope was wider, most clearly in regard to social care support, which was estimated to account for up to 50% of their work. Recognition of this variation prompted the assertion (agreed by all) that “accuracy would be so much better if social care data was included” (in the PRISM algorithm). A further request was made for falls data to be included.

A brief discussion of whether PRISM scores might be included in referral information, provided no firm conclusions although one case manager suggested that PRISM scores may be helpfully employed in liaison with social services, in providing an “objectively quantified” indicator.

An ethical concern over the identification of high risk patients without this necessarily resulting in further assessments/care – with a tentative conclusion that “…I suppose in a way, it’s about clinical judgement – all the tools are there to help us, but it’s a clinical judgement at the end of the day.”

Other users
The group briefly debated the likely users of PRISM, agreeing that practices with attached case manage would be most likely to benefit, especially if staff were intellectually curious:

“I happen to have a very good practice manager who is interested and computer literate, but there will be many that won’t have that.

“They [practices] haven’t all got case managers to go through it for them. “

There was a consensus view that most GPs would be unlikely to use the tool (at present) due to workload fears and some concern that the benefits of the tool had yet to be identified.
Carmarthenshire

Findings currently being revised
Chapter 4: Practice Registration

Introduction
As the main proprietors of data contributing to the PRISM algorithm, GP practice consent for PRISM is critical to its use within individual practices but also at the wider service planning level (e.g. locality). Part of the CCM Demonstrator programme of work has been to roll out PRISM across all practices in the respective areas (i.e. Gwynedd, Cardiff and Carmarthenshire), as required by the National CCM Demonstrator and PRISM project board in October 2009. The demonstrators were asked by the emerging Wales Predictive Risk Service (WPRS) Service Management Board to feedback on practical lessons learnt during this exercise. The CCM Demonstrator leads were charged with engaging practices and gathering their registrations supported by other staff where appropriate – e.g. care coordinators played a significant role in Gwynedd and Cardiff, as did the CCM lead in Cardiff.

This section provides a summary of the experiences from the three sites of signing up practices to the use of PRISM, to assist in understanding:

- The different approaches used across the three
- The reactions of different staff groups to the tool
- The challenges along the way
- The factors influencing successful sign-up

North Wales
In north Wales the Arfon locality care coordinator was the primary demonstrator staff member working on PRISM registration, supported by the demonstrator lead and GP leads. Interviewed near the end of January 2010, they had at that stage had ten signed ISAs from a possible 27 practices. By the beginning of March this had risen to 17 practices, with 7 to be confirmed, 2 not interested and 1 unable to access the tool.

Approach
The initial contact approach had been emails from the GP Lead. The care coordinator then made contact in a number of ways including via local meetings and telephone calls, and sometimes followed up by practice visits.

“Some practices have been keen to sign up immediately whilst others have requested a visit to talk through the tool in more detail. A few practices have so far been reluctant to engage, either due to concerns about the tool or other work pressures.”

When visiting practices the care coordinator ensured they provided slides showing the PRISM tool and verbally or visually summarised “…its key elements such as the encryption, what the tool looks like and a little about how the tool has been used”. These materials had been based on the principle of what would I want to know if I was them.

“I wanted to show them how simple the tool was to use. I prepared for visits by ensuring that I had a good understanding of the concerns already expressed about the tool but also of the positive feedback. The main drivers for GPs appeared to be around targeting resources and improving patient care.”

Visits had been largely successful, although the care coordinator suggested that those who had engaged were perhaps already receptive to PRISM or early adopters by nature.
Few technical issues had arisen during the care coordinators discussions. Some practices were concerned about whether PRISM would slow down their systems, but since data transfers are timed to run overnight, as with other Audit+ extracts, this is highly unlikely. The PRISM tool itself is accessed over a secure web connection, so again would not impact on the practice system. One compatibility problem was identified, requiring a system upgrade to resolve. This has been raised for feasibility with BSC.

One practice had declined to get involved, expressing a desire to see evaluation results before reconsidering. Other queries were reported around the process of registering, over expectations of use and other data quality and patient consent:

“There have been some concerns over data validity. Of course the stratification will be dependent on how well information is read-coded initially. One practice was aware of some coding issues and I explained that this may cause anomalies in the results received. Other questions have been raised around data issues, such as whether patients can opt out of the stratification process. I explain that although all of the practice records are processed, the data is pseudonymised at HSW so that patient-identifiable information can only be accessed by the practice. This information will be subject to the same principals of data governance as the existing patient records”.

The care coordinator acknowledged that successful sign up to PRISM was based on “getting out there”, and on seeing the right person (i.e. with authority within a practice). In the absence of a LES they had also found it helpful to encourage practices to benefit from early access to PRISM – ahead of the availability on an all Wales basis, whereby they have the “space and time to look at the data, to see what they have time to do, how it feels and (ultimately) how it is useful”.

It was recognised further that practice sign up would not necessarily equate to practice usage but the care coordinator did see the sign up as one barrier to overcome, with a LES based incentive for use one area for future consideration.

**Cardiff**

At the time of interview (the beginning of February 2010) Cardiff had seven practices signed up – six of whom were practices with case managers attached. However, a month later 31 of 53 practices had signed Information Sharing Agreements (ISAs), following the introduction of a Local Enhanced Service (LES) around implementing PRISM. By April 2010 this number had reached 46 (87%).

The comments below were provided by the Cardiff Demonstrator lead in personal interview. Qualifications and additions were subsequently provided by the CCM lead (by email), and thus the comments should be seen as a joint response (from ‘the leads’).

**Approach**

The initial registration approaches employed in Cardiff had been in-field activities, based on attendance at GP learning events and additional contacts with individual practices. During presentations, the CCM lead and Demonstrator Project lead provided an overview of the tool, instructions on how to activate it and took questions. These approaches were not overly successful in the first instance. The first month or so of liaison with practices had yielded limited registrations, with a typically lukewarm response from those they had
contacted – even (as noted above) from CCM clinical leads. A decision was subsequently made to introduce a LES funded through transitional funds.

“We have developed a one off LES to assist practices to sign up and activate the tool. They are then asked to consider the information provided in a team meeting and attend a neighbourhood meeting to compare with other practices in terms of citizen needs and service planning”.

The introduction of the LES and its financial incentive led to a widespread registration with PRISM – with 44 of 53 practices signing up by March 2010. - see the LES on the demonstrator website at www.ccmdemonstrators.com.

Challenges Faced
One of the main learning points for the leads was that practices were required to undertake a number of different registration steps – over and above the signing of an Information Sharing Agreement. Certainly, this process (summarised below in Figure 9) was more involved than the leads had initially expected:

Figure 9: Account Control 3 User Guide ver 1.1. June 2009 p2. Accessed from PRISM website

Coincidentally, as the discussion with the demonstrator lead took place, we were informed that one of the Cardiff case managers who had intended to use PRISM for the first time, had been unable to access the tool, as they had unknowingly missed a five day deadline to confirm their Caldicott Guardian. Prior to the introduction of the LES, the main challenges that the leads identified related to their own (lack of) knowledge of PRISM with limited formal guidance on how to use the tool that they or indeed practices could refer to, with the website FAQs noted as needing further development. In recognising this knowledge gap the demonstrator lead had spent a few hours with one of the case managers examining PRISM, which had proved helpful but raised questions about the functionality of PRISM (see previous chapter). The leads were however confident that PRISM would be useful, especially from the neighbourhood planning perspective, drawing on the example of the mapping work undertaken in the Carmarthenshire demonstrator.

“The mapping enables people to sit down and provide a focus on their neighbourhoods; they can see where there are services, and where there are gaps. It needs social care data for that to really work however and to facilitate health and social care neighbourhood working. As a neighbourhood it might be useful – as a planning tool – you’d need less understanding of individual elements/limitations. To use it at the individual level you really do need to understand it properly”
At practice level the leads were awaiting to see if GPs, case managers or others would regularly use PRISM but were keen however to see evaluation results (e.g. from the Swansea University study) as a potential positive influence or hook.

_Carmarthenshire_

Summary to follow
Chapter 5: Conclusions

The following comments address some of the main findings, themes, and observations following the evaluation work undertaken across Wales.

For the majority of the users identified, using PRISM was their first venture into risk stratification tools – although many will have been familiar with risk identification tools. As such the exploration that each had been asked to do (directly or indirectly) by the CCM Demonstrator leads was into unknown territory. It should be recalled that their usage of PRISM was not directed by a manual or a guidebook, but through an iterative process where their learning would support future documentation and development of the tool. Being at the project vanguard was not always an easy place to be, and it was clear that there were frustrations along the way, as answers to queries they may have had were not always easy to obtain. However, it is fair to say that each of the users has made progress towards a better understanding of PRISM for future users, despite the variation in approaches that they adopted and that largely reflect their job roles.

First impressions of PRISM were mixed, and often refined somewhat following further exposure to the tool. Certainly this was the case for two of the north Wales clinical lead GPs – the main users of the tool in that area. These two GPs had tested PRISM in a collegiate environment - sharing knowledge with other clinicians and health professionals in order to gain a fuller understanding of a patient’s needs and circumstances upon which to make subsequent judgements, overcoming some reticence along the way as they became more familiar with the tool, its possibilities and its limitations. For the GPs, and indeed for the clinical case managers in Cardiff, the main focus of their engagement was in testing the potential for PRISM to contribute to improved practice in pro-active case identification. Meanwhile in Carmarthenshire the three care coordinators were each exploring PRISM from a service mapping/planning perspective – in line with the expectations of their roles – as anticipated in the vision of the Welsh CCM Model and Framework literature.

Some observations on the experiences of these two types of usage above, would include an appreciation that the governance and indeed practical arrangements are strongly geared to internal practice use of PRISM only. Further the processes around multiple practice use and consolidating data are immature at present and will not be deployed by PRISM now that this it is part of a national service with formal processes to ensure management control of data uses and access. As such, remote access to anonymised or indeed raw data is not possible for users, and they must be located on site.

While there was recognition that data security was and will remain a ‘must do’, the NHS locality care co-ordinators in particular would welcome, and realistically depend upon, future improved practical access arrangements. Importantly there was a strong will amongst them that arrangements be improved, in order to take their work forward and they volunteered a number of suggestions and observations in that regard.

Whereas the service planning users were primarily interested in the headline figures, such as PRISM risk level and score, the case identifying users paid closer attention to the individual level data. The service planners, being more detached from the data had less reason to question it but also had no knowledge of individual patients, nor access to patient records. As such they were less inclined or able to interrogate the data than the case identifiers who were consistently comparing their understanding/expectation of patient’s risk
scores with the PRISM score. Although, as might be anticipated, most of the highest risk patients in a practice were known to practice staff, there were examples from all users of people whose risk score was much higher or lower than they expected. For those higher risk patients, the data provided impetus to further investigate these patients – in line with a case identification model of use, and to develop processes to examine the needs of these patients with a view to improving their care. For example, in Cardiff case managers were following up patients with their respective GPs, and in north Wales GPs were identifying patients for discussion at MDTs. Undoubtedly, then PRISM was becoming an important tool supporting GPs, MDTs and clinical case managers in their work – a tool that was complementing existing practice and judgement. For many of the users however, the processes they were putting in place will need longer to bed in and mature before benefits can be realised fully.

On a less positive note, the closer interrogation of data that case identifiers were inclined to undertake when identifying a patient of interest, had led to a number of anomalies whereby the user was unable to reconcile their understanding of a patient and their clinical notes with variables within PRISM. Examples were provided such as neurosis, polypharmacy amongst others, whereby closer inspection of PRISM variables (which of course account for their risk score) had revealed details that the patient notes etc. did not verify, or that were otherwise difficult to understand. Being able to delve deeper – to understand factors influencing particular scores was felt to be important for some users, as was a better understanding of how some scores were calculated – e.g. polypharmacy. Clearly, even armed with improved knowledge – or access to improved knowledge in such areas, there will remain errors in coding, as in any similar system. However, further work may be helpful on making education resources available for the interested user to clearly understand how some scores are calculated.

Other key areas for improvement that emerged in the study included:

- Availability of an export option to support merged data sets and further interrogation
- Improved filters and search options (e.g. by patient) to better target populations of interest especially within the wider MDT
- Enhanced user guidance, FAQs and support arrangements

During the time of the evaluation some improvements were made (e.g. the release of version 1.1) and it was clear that the ongoing development of PRISM was welcomed. That suggestions users were making about PRISM were being considered and acted upon was seen as a real positive out in the field – and provided added impetus to some users, keen to explore the new functions (especially the patient search and filter tools).

The most consistent area for improvement wanted, that has not as yet been addressed, relates to social care involvement in PRISM work. Users were keen to see the inclusion of social care data in the PRISM algorithm - seen as an important contribution to developing integration between health and social care. Even without factors such as household support arrangements being available as data, social care input into joint working arrangements (e.g. MDTs) was seen as a priority development to move forward the wider CCM agenda and to take PRISM forward.

As some of the processes, and structures implemented by the Demonstrator users continue to bed in, there is a need for further learning to be shared on an ongoing basis. For example, what impact will PRISM have on the caseloads of case managers going forward? – will it be a tool that helps them re-prioritise, and what challenges does this present when
already at capacity. Similarly what will the ongoing role be of the different disciplinary groups involved in some of the joint working that PRISM has helped instigate and rejuvenate? Much of the emphasis from the users has been around the importance of GPs, care coordinators and social care joint working, but the role of pharmacists, district nurses and where applicable generic workers will need to be reviewed in due course also. Further work proposed by Swansea University, and from within the CCM Demonstrator sites will help ensure that learning is ongoing as PRISM continues to be rolled out, and risk stratification becomes an additional tool at the disposal of healthcare professionals.

Final thought
Although, they encountered different challenges en route, in their role of testing PRISM – the users set out to interrogate, to find fault, to provide guidance to others and to feedback their findings – in this regard they have been very successful.
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