

SCIMP Response to “eHealth priorities for primary care”

July 2014

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Document control

Version history

Version	Date	Comments
0.1	06-Jul-2104	Rough draft for comment
0.2	13-Jul-2014	Substantial edits, still draft
1.0	30-Jul-2014	Further editing and refining inc. single medication section

Reviewed by

Initials	Date	Comments
IT	9 July 2014	Reviewed original
AF	9 July 2014	
CB	10 July 2014	
LM	10 July 2014	
IM	11 July 2014	
IT	30 July 2014	
LM	30 July 2014	Refined single medication section in line with SCIMP e-mail discussions

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File reference(s)

PCCPMG - 140501 - Priorities for eHealth development in Primary Care 2014.docx

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1 e--Health Developments

1.1 Are these the right priorities?

We agree with these priorities, with the addition of a focus on utilising e-Health to improve the business of primary health care delivery. It is important to ensure that the utility of GP systems, in terms of both people and technology, are functional and that they can support the other priorities listed and facilitate new ways of providing health care.

Requirements of the service providers are a priority, as their support and engagement is essential for delivery of the strategy. Helping practices to improve their data quality will help the other users of their data in other services. It is essential that changes from the patient centred 2020 Vision do not adversely affect the routine business of delivering health care, either by reducing efficiency, increasing workloads, threatening quality of care or impacting safety.

The emphasis on telehealth and telecare is understandable, but there are some basic requirements for better electronic communications between and across health care networks and which take priority. Currently, there is no method of reliably communicating electronically with our patients, nor with many of the agencies and individuals who may be involved in the patient's care in the community. There is an urgent requirement for reliable sharing of information across providers of health and social care.

We would therefore suggest adding to 'Short Term':

- A programme for examining and improving data quality in GP systems to address the new purposes of this data.
- A programme to establish metrics for ensuring the impact of other priorities is to improve outcomes in general practice.
- Policy and procedures to ensure data in e-Health systems in NHS Scotland can be safely exchanged and shared between all systems, including its safe transfer with GP2GP.

Medium Term:

- Establish secure, safe and reliable electronic communications between health and social care providers and also with their patients or clients.
- Provide access to patient data for individual patients to use directly in software applications to support their own health care. This will require third party companies, small and medium sized enterprises, to be able to access health care data currently held in proprietary structures.

1.2 How to increase the pace of online services rollout?

Early anecdotal reports suggest there are a number of barriers:

- Practices may not perceive any clear early benefit.
- There is a lack of evidence to support later benefit.
- Implementing business change is time consuming and requires technical and managerial expertise.
- The digital divide may have an impact, as people with chronic diseases on multiple medications who have most contact with practices will tend to have fewer economic (and often educational) resources to support access to online services, and may not have the technological skills required.
- The implementations of online services by providers differs in both functionality and user interfaces. This may prove challenging for patients moving between practices, with further impact on practice workload.
- The functionality provided by suppliers does not yet meet all the requirements of practices, in particular for appointment systems that are often fine-tuned to the practice's particular characteristics – this is complicated for suppliers to understand and implement.
- Local IT in Health Boards may require assurances about security and the impact of these new services on their infrastructure. It may be difficult for Health Boards to gather these assurances in a format that meets their needs.
- Suppliers need to manage multiple and conflicting demands from too many different health care organisations in Scotland.

From this we can suggest:

- Find and support practices already using online services successfully, to provide documentation or other educational resources for others based on their experience.
- Gather qualitative data on the benefits (or otherwise) of using on line services from a practice and patient perspective.
- Resource training and implementation of these services for practices.
- Define NHS Scotland-wide baseline requirements for such services and provide a national minimum specification for suppliers to benchmark against.

- Ensure GP system suppliers understand the business requirements of practices, in particular with some unique NHS Scotland characteristics of smaller practices, remote and rural care and different e-Pharmacy implementations.
- Provide technical support for patients using these services with help desk functions.
- ID verification services should be moved out of practices to other agencies, for example Government agencies or their sub-contractors such as Post Offices.
- Systems to support credential 'passthrough', so that the authenticated user can be linked to other systems such as hospitals or other Secondary care services e.g. Renal Patient View, My Diabetes.
- Move towards a common User Interface regardless of underlying clinical system by providing the data to Patient Portals.
- Understand the business requirements of Health Boards to allow them to support and implement these services in their practices.
- Find 'champions' of using such services from practices and help them to share their positive experiences, and explain how they implemented the changes required.
- Provide a website for patients to check which practices provide such services.
- Publish a regular newsletter updating practices on progress.
- Involve patient representative groups in the programmes.
- Measure and evaluate impact to provide evidence of benefit.

1.3 How will GP online services for repeat prescriptions interact with pharmacist's role for serial prescribing?

These two separate programmes have been developed independently and currently do not interact. Practices may find it more convenient to allow the patient or their representative to order repeat medication via online services than to delegate this task to pharmacies via eCMS, with all its constraints and additional management. It is perceived as pharmacy focussed and does not necessarily improve the efficiency and workflow in practices. We would suggest identifying practices providing both services and gathering their opinions and experiences in order to plan efficient use of both and improve repeat prescribing services.

1.4 What are the information priorities for patient access to records?

The initial approach of Appointments and Medication is sensible and should be a benefit to practices and patients alike. The next step could be the provision of electronic access to test results for patients with regular monitoring. Provision of electronic test results more generally is more challenging to the culture and current workflows in practice. For example, not all results marked as 'abnormal' by lab systems are clinically significant, and some "normal" results are highly clinically significant: the interpretation of and actions from a result in context by a clinician is *mandatory*. There are particular concerns about:

- Increased inappropriate workload generated by incorrect patient interpretation of a result.
- The risk of a significant test result being received by a patient out of hours.
- The risks of direct access before the clinician has viewed it.

These risks can be managed and mitigated, but it does require a systematic and careful approach to reassure both practices and patients.

The delivery of condition-specific information may be a reasonable next priority. For example, summary management data for diabetes or asthma may be usefully presented to patients and contextualised, helping them to manage their condition. The data quality used to support contractually-monitored conditions is known to be good, so this is a route to establishing the principles of online record access, achieving acceptance from practices and patients and potentially improving self-care and reducing demand. The outcomes should be carefully measured, however, as the impact of online access services on quality of care are unpredictable.

Access to a 'general summary' of the GP record could reasonably follow, but this will expose raw clinical data direct to patients. The risks of this are well understood, and as much cultural as technological. A measured approach with support for managing data quality and the inevitable errors, real or perceived, will help to increase confidence in this type of records sharing.

Access to the full GP record, including all structured and narrative notes, should be approached using the lessons of incremental implementations described above. The business case for this type of access has yet to be made, and we think that record sets with associated functionality to support specific conditions will have a greater impact on health care.

1.5 What is the primary care vision for Telehealth/Telecare?

From our perspective telehealth / telecare is about providing methods for doing healthcare services remotely using telecommunications, primarily about infrastructure support of health services rather than being transformative. It is an enabler

of changes to business process, but not in itself the change. We would like to see telecare services that support practices to work differently, which accommodate the needs of different roles and working hours of staff members, and enable them to manage patient interactions from different locations. The use of remote desktop facilities in some locations has already changed the way practices manage their work, but the provision and integration of telecommunications tools with clinical information systems will also assist with this. We would recommend that provision of remote access by practices to their clinical systems (generally by remote desktops) be adopted as NHS policy and offered in all Health Boards – this will be an enabler of business change.

The provision of and support for a secure NHS Scotland Voice and Video over IP (VOIP) application such as Cisco Jabber or Skype has the potential to transform communications between health and social care providers and should be made an objective.

Where data is received from remote monitoring and measuring systems this has to be done as part of a well specified clinical process, and where that process is to be substantively different from the existing one this must be treated as a business change project, with all the inherent analysis and risk management this requires. Safe interoperability of data must be confirmed by clinical testing where appropriate. We should ensure that transforming services using telecare delivers at least as good outcomes as traditionally delivered services, and that they do so at equivalent or less cost.

We see telecare services as essential in responding to patient demand for different methods of care delivery, and would expect provision of service and self-care information via telecare delivered services to support 2020 vision of longer independent lives.

2 New Contract & Place Based Care

2.1 What are likely to be the new models of place based care? & How does this change role of GP, pharmacist, community nursing etc.? Who will lead on case management?

From an e-Health perspective the requirements to support this type of working are:

- Interoperable records
- Multiple platform delivery of records data and information
- Electronic team management support – mostly this is about knowing who is involved in a patient's care, what they do and how to contact them. NHS Tayside is adopting this approach in its Portal.
- Patient or carer user tools and information integrated with team record systems
- Electronic decision support systems such as decision or referral pathways
- Wireless communication infrastructure

Future ways of working will be driven by SG Primary Care and Primary Care Leads, but e-health needs to stay closely involved to avoid taking a reactive role. Currently the general practitioner is considered the person with ultimate responsibility for the patient's care, due to their responsibility for diagnosing, referring and prescribing. Future care- teams may involve pharmacists more directly in organisation of repeat prescribing, medicines reconciliation following hospital admission and in chronic disease management; and community nursing teams in developing care plans and leading on palliative care. All of these team members require seamless integrated records with a single accessible prescribing record before this can develop. A national strategy needs to include concrete plans to develop the communication tools for all members of the team to work effectively together with appropriate information, governance and responsibilities. As long as GP practices have sophisticated electronic prescribing systems with decision support, but no link to community systems and no plans to join them up we are a long way from enabling coordinated place based care.

2.2 What changes are likely to the GP contract & could any e-health priorities be included to accelerate progress?

For the past 12 years, the GP Contract has been used as a tool to improve safety and quality, and to implement government policy such as vaccination and screening programs. In addition, Health Boards have also used the contract to drive their own priorities of reducing pharmacy bills, making savings, or implementing their own service requirements such as warfarin monitoring. More recently, the contract has been used directly to attempt to reduce demand on acute services through anticipatory care planning and better information provision for unscheduled care services.

In the last year the contract in NHS England has diverged from those in the devolved nations and England has made a priority of rolling out Patient on line Access via the contract. In addition, an IM&T DES was used in NHS England, to improve data quality, confidentiality, resilience and training prior to the implementation of GP2GP and electronic prescribing. Their experience would be important to use to inform Scotland's GP2GP implementation.

It will be vital to improve data quality recording in Scottish practice before implementation of GP2GP and SPIRE and a contractual tool could be a method of doing this. This would require educational support for all members of the practice team and protected time for clinicians. Any discussion on data quality needs to recognise that any assessment of data quality is dependent on the uses of that data and feedback to users.

The GP Contract currently includes requirements for the provision of a practice leaflet, but this has not evolved to take account of digital media. The GP Contract could be used to resource practices to provide a website with specific information on their service, including information about provision of online access to booking of appointments and repeat prescriptions. As independent contractors, many GP practices have already published web sites for their own reasons and various third party additions have evolved to assist with the cost and effort. It would be helpful to set minimum functional, content, and information governance requirements without imposing standardisation.

Practices could similarly, as in NHS England, be resourced and motivated through contract to provide online access to services and records. As outlined in our discussion of this above, we must first be sure that the implementations provided actually improve the business of practice, as well as the service to patients. Otherwise, we risk lack of engagement, building resentment, stifling innovation and perhaps complaints that the contract requirement is not achievable with the technologies provided.

The use of the GP Contract to have practices complete KIS forms for an identified at risk group of their practice population has been innovative and encouraged the refinement and provision of better information to other services.

Going forward, we should try and automate the mechanics of creating summaries and the consenting and 'switching on':

- Greater automation of summary data should be possible using existing data structures: clinical data, if of adequate quality, can be contextualised as information to the recipient based on their requirements. This reduces the need for doctors to create summary documents for others and concentrate on managing the clinical record for the patient's care.
- Consent to data sharing may need a new model that can be shared across the NHS. This could reasonably be delegated to the patient or carer themselves via patient portals.

Contract indicators must be realistically achievable using e-Health tools. It is *essential* for the general practice community to have confidence that the systems they use can support the work they are contracted to do. This needs to be managed, and SCIMP is working with NSS Contract Strategy group to assist PSD in putting proposals forward as to how this can be achieved.

2.3 What role will SAS have in place based primary care?

From a GP perspective this is about ensuring good and timeous communications with the ambulance service as they see and manage the practice's registered patients. SAS should have access to shared GP data, and have a greater requirement than most to ensure this data is structured and computable – allowing them to view summary views of data in an acute situation and perhaps provide additional decision support. The design of "in-cab" IT to do this is challenging, but SCIMP will be pleased to advise on the use of GP data for this purpose. Data returned to the practice about SAS events is now presented at the document level and we have proposed changes to our Docman systems to support this. New standards for ambulance documentation has been agreed at UK level and these should be adopted in Scotland

2.4 What are the opportunities for future e-triage models, which use locality teams or community nursing teams as the entry point to other services including GPs?

It is not clear that there is a business case for using this type of model to triage access to GP services. Many practices use formal triaging of contacts in order to direct care to the appropriate team member in an appropriate time period. Generally these are operated in-house and supported using the clinical information system and the standard telecommunications tools already in the practice. It is unusual to find a practice that does not operate some level of triage, even if it is simply the receptionist directing a patient to the practice nurse rather than the GP for an immunisation. Some change management companies promote the first point of contact for all patients with a practice being with a GP. This is based on the doctor being best positioned to risk assess, take responsibility and make decisions - some of which are only available to them such as prescribing or referring for admission.

To support e-Triage of patients by teams external to the practice would require electronic systems that can access and use the GP record to support assessment of the patient, and access to scheduling and resource management data from the practice team including the ability to allocate resources. This is challenging given the variety of working practices and the local knowledge that practices use to manage their demand. Again, robust and usable communication tools would need to be provided to allow triage staff to communicate as needed with other people and teams caring for the patient. Who is responsible

will need to be reflected in software implementations, and some type of records access control will also be required to give public and professionals trust in the sharing and use of data.

Some experience of external triage already exists from in-hours contacts to NHS24. It may be worthwhile auditing the experiences of this for all stakeholders to establish some lessons for future projects taking this approach.

3 Out of Hospital Care Action Plan

3.1 Who is the medication record owner/ single point of contact?

3.2 Is the medication record a subset of a wider electronic patient record?

The concept of a 'Single Medication Record' or 'Patient Medication Record' has been identified as a priority by both patients and clinicians and now needs to be clearly defined along with a development plan and timeline.

The clinical requirement has arisen because of the multiple different care teams which all have varied records and different ways of recording the patient's medication. Although a patient may be on only one medicine, that medicine and its associated data (dose, frequency, dispensing etc.) will be represented on many different systems, both paper and electronic and in many different ways. Examples include GP clinical systems, e-Pharmacy systems, ECS, hospital out patients, hospital in patients, SCI Gateway, patient's own records and bespoke clinical systems. Each of these systems has developed its own way of structuring and storing this data, which causes significant problems when sharing records, or handing over care. The necessity for transcription every time a patient moves between care teams causes safety problems, generates work and leads to excess prescribing.

There is an opportunity to use dm+d to provide a standard terminology for describing medicines, along with the data interoperability structures of GP2GP and SCI-XML and agree a single method of describing medication records in electronic data. This in turn will allow us to share medication data reliably between otherwise disparate clinical systems.

SCIMP has built on work from GP2GP and SCI-XML to gather the clinical and technical requirements needed to refine the 'model' used to store medication records. This makes use of a web based collaborative tool called 'Clinical Knowledge Manager' (CKM), which also acts as the repository for the current models.

The models are ready to be used in live systems (and are in use in some systems in NHS England) pending a policy decision to implement these in systems that will benefit from using them. This will very rapidly lead to better medication data being received and exchanged across NHS Scotland.

The 'single medication record' will be a central repository of any medication prescribed, dispensed or taken by patients. It will synchronise with live prescribing systems and over time become the record that is written to and read by clinical information systems directly, without local copies of data.

An incremental approach to the delivery of this is essential and inevitable. We should investigate and learn from other countries experience of implementing this, principally Denmark:

http://www.worldofhealthit.org/2012/wp-content/uploads/2012/presentations/2/MIN2_eHealthfortheChronicPatientHypeHopeorReality.pdf

Until now, the GP record has been regarded as the most complete record of a patients current medication but increasingly this is unsustainable due to multiple potential prescribers and the workload required to update records manually. A first step towards a single medication record could be the development of the GP record to allow automatic electronic updates with the GP retaining 'editorial' control. The subsequent move towards a communal record would require governance controls and agreements about communal ownership. Every person who prescribes a medication is responsible for that prescription but they need to be aware of all other medications that a patient is taking concurrently. For safe prescribing it is essential that every prescriber has access to the complete prescribing record along with decision support tools and appropriate medical history. Ultimately there needs to be a final arbiter of the medication list and this could be either a key clinician or the patient themselves.

Different prescribers may have different permissions to add, stop and change medicines. The single medication record needs to be incorporated into the clinical system of each prescriber and also available to the patient. Initially it will encompass community prescribing and then out patient clinics and could eventually develop to include hospital prescribing, which will enable safe and efficient medication reconciliation at the transfers of care.

4 Building of integrated health and social care partnerships

4.1 What are the requirements for information sharing with the third sector?

Initially, information coming from the third sector will be text based and held at the document level, but there is a need for some structured data (child protection, for example) where the sending and receiving electronic systems need to be able to compute alerts and reminders. Currently, all GP Practices have Docman, which is able to incorporate scanned Social Care documents into the GP records. The next step for documents is for Local Authorities to do the scanning and to adopt EDT Hubs. The data sharing partnerships need to be aware of the need to share data using common models rather than proprietary solutions and specific, scoped requirements should be developed now. The methodology used in the CKM for medication modelling would be a candidate for supporting this and as the organisations become more collaborative we would expect the requirements for structured data to increase.

5 Identification of key pressure points for pathways of care

5.1 Who is developing the GP dashboards to use SPIRE data, how will GPs use these to improve services & how will learning rollout across GPs? Will other clinicians have access to SPIRE?

GPs will need to have input into the requirements and design of dashboards to ensure the initial implementations can evolve to meet changing requirements.

The SPIRE pathfinder network will draw on the experience of practices that have expertise from projects such as PCCIU and PTI and inform priorities and methods of implementing change. The SPIRE data needs to feed back areas of importance and clinical interest specific to practices. The process of feedback and consideration must be adequately resourced in order to maximise the opportunity for identifying areas of need, carrying out a continuous cycle of data quality improvement and proposing business changes.

Other clinical groups are likely to request access to SPIRE data and they will be able to view anonymised-aggregated data sets, which will be publicly available. Any bespoke requests will be considered by the SPIRE steering group, that will have a robust set of principles to follow in order to give assurances to practices that their data is secure. We must be careful that the GP dashboard data is not used as a tool to blame or punish practices in areas of perceived poor performance by others. The interpretation of local data is subject to many confounding factors, not all of which will be apparent to external reviewer. GP dashboard information should initially be available within practice teams to identify their priorities for better data or targeted health care. This type of approach is already working in areas such as locality prescribing data and referrals data.

5.2 Will social services have access to some form of KIS? If not what information will be shared between social work & GPs & how?

This would seem sensible and inevitable. The question is what form would a summary for social care from medical care look like? KIS has been excellent at defining a data set and establishing the principal of clinically curated summary data for specific patient groups. As we discussed above we could reasonably expect more automation of summarisation data, and different presentations of the data depending on user and use case. There will need to be a requirements gathering exercise to determine what information exchanges are needed, in this case to ask Social Care what information they would like (with appropriate governance) from the GP record.

5.3 How will the results of the evaluation of KIS be reviewed and embedded in future developments?

The findings from the KIS evaluation needs to guide the requirements for shared summaries going forward. We should separate out the information requirements from the technology, and always consider the business processes that underpin that information gathering and sharing. The principles of KIS are very robust and clinically have been warmly welcomed, but as we refine information needs and the responsibilities for editing, contributing and sharing information, the business model should drive the technical changes.

6 Through more detailed analysis of existing data people identified, as ‘at risk’ will have agreed anticipatory care plans.

6.1 How much more than KIS and ECS is required for the anticipatory care plan?

The key problem here is that the information in an anticipatory care plan needs to be collaboratively provided, but as currently modelled they are completed using only GP data, and the KIS is specifically normally completed by a GP. GPs are good at clinical risk management and planning, but many aspects of anticipatory care planning such as social support, pharmacy interactions, family and carers and legal aspects are not their areas of expertise. These other organisations and individuals are not currently able to contribute to the ACP information space directly.

From a practical perspective because GP data is the best and most easily available, with the most complete infrastructure for data sharing, it has been the obvious and correct place to build this initial KIS functionality. We note that in Tayside Anticipatory Care Plans completed by nursing and AHP staff are being considered for the Clinical Portal, and we should now be looking at collaborative work to better include (and share and integrate) data and information from other sources into the KIS.

6.2 Is the issue here that we don’t know who is at risk?

The information challenges of identifying people ‘at risk’ are being worked through by suppliers and national risk assessment tools, and the approach of allowing practices in Scotland to use their own knowledge to identify patients at risk of admission is sensible and reflects the limitations of the data analysis tools and data utility that we have. Improving data quality is essential, and for SPIRE early adopters there may be opportunities to improve risk assessment algorithms.

The data in GP practices however complete and accurate, is only a subset of the information sources that determine patients at risk. Risk is also dynamic: a patient's admission to hospital can occur in an hour and all records need to be updated. This missing data somehow needs to be incorporated, and this needs common data structures and exchange mechanisms across the health and social care landscape.

7 Are these the priorities for pharmacy services, what are the links with the e-pharmacy programme & how does the e-pharmacy programme link with the PC – PMG?

From a prescriber’s perspective we would like to see some focus on supporting the business of managing prescribing in general practice with additional ePrescribing functionality. An end-to-end electronic prescribing system with electronic signatures has been very successfully in NHS England, not just removing paper prescriptions but also significantly improving the efficiency of general practices. This should be a strategic objective for NHS Scotland as well.

GP systems suppliers prescribing systems should support better and simpler management of patients’ medications, especially in the polypharmacy cohort. A clear understanding of the business flows, people and interactions that currently support this is needed. An iterative approach would also be recommended given the high safety risk associated with prescribing systems.

NHS Scotland should adopt a single medication decision support system to ensure a standardised and consistent type and range of alerts and supporting data across the NHS. Confusion in GP systems on how to configure medication decision support alerts, on the significance or otherwise of the alerts and the multiplicity of programmes and suppliers that now provide decision support is leading to conflicting advice, with frustration and not improving safety.

To standardise the decision support engine used by NHS Scotland prescribing systems by using standard terminologies for medicines (dm+d), for clinical data (Read and SNOMEDCT) is a key benefit of a single medication record. The use of a computable dose syntax will also enable decision support to be specific to each prescription in a regime for all those interactions that are dose-dependent.

We would also expect the single medication record to be used by community pharmacy systems, aiming to capture “Over the Counter” medicines and dispensing events. Having a single record of reference has the potential to significantly reduce the many challenges of communicating medication changes between pharmacies and general practice.

8 Other SCIMP Priorities

8.1 Standard data models

EHealth priorities require us to safely, reliably and consistently exchange clinical data electronically. We believe this can only be achieved by agreeing the technical and clinical data requirements in the same workspace, and by having agile and iterative development models that can quickly respond to changing requirements.

This is the work SCIMP has initiated using Clinical Knowledge Manager (<http://www.clinicalmodels.org.uk>), initially for adverse reactions and medications but also finding purchase in areas such as consent, resuscitation instructions and death certification.

We would suggest a strategic objective should be to build a repository of NHS Scotland clinical models as business requirements are identified for exchanging clinical data, with a direction that these are to be implemented and used.

8.2 Single medication record / Dose-syntax

The Closing the Loop Commission concluded that the Patient Medication Record, or single medication record, was the preferred outcome for managing and reducing many of the current risks in medication management in NHS Scotland. SCIMP strongly supports this conclusion. This should be a distinct and high priority area for the strategy to deliver on in the medium term.

An additional piece of work currently underway under the SCIMP banner is to deliver a 'dose syntax' - a standard notation or language that can be used to allow prescribing systems to calculate quantities and doses of medications. This has many potential benefits, and also begins to build the technology we require to manage the transition from acute to primary care prescribing electronically. There needs to be a direction to NHS Scotland suppliers that this work will be implemented in both Primary Care and Secondary Care prescribing systems. We would recommend this is recorded as a strategic objective.

8.3 Interoperability

The eHealth strategy should change the emphasis from *information* exchange to *data* exchange. The challenges of managing safe data interoperability, as alluded to above, have resulted in many projects simply displaying information representing data from other systems – typically on portals. Whilst portals have an essential role, we should recognise that the value of electronic health care comes from allowing the computers to process data – providing summarised and contextual views, decision support, diagnostic and therapeutic support and algorithms to improve pathways and delivery of care.

A strategic objective to increase the quantity of data interoperability would assist with this. Stating, for example, that wherever possible NHS Scotland Systems that need to share information should do so by exchanging structured data, supported by NHS Scotland Clinical Models, would transform the eHealth landscape. By placing this in strategy it will drive change in the culture in the health service to one of high quality, useful data supporting people to do their jobs and raising the standards of care.

8.4 Competition and Innovation

SCIMP would like to see more competition in the marketplace for GP systems in NHS Scotland. We think that more competition will lead to more innovation. There are two main aspects to this:

8.4.1 Purchasing decisions

At present we have two principle GP suppliers – EMIS and Vision. Across Health Boards generally one supplier is preferred, although most Health Boards have a mixed economy of GP systems in place. General practices are independent contractors to the NHS for provision on NHS Services, but are now largely removed from the purchasing decisions and prioritisations given to their clinical software needs.

We acknowledge that the risks of this have been recognised by NHS Scotland and attempts made to redress this imbalance through support for Scottish National Users Group (SNUG) and by provision of some contracted development time for GP practice requirements (the "100 days"). We do not think, however, that these mechanisms are powerful enough to substantively influence the direction of clinical software systems, and indeed the general trend with GP suppliers has been to prioritise national or health board system requirements over those of end users. NHS England address this using the GP Systems of Choice (GPSOC) process, and NHS Wales have adapted this. We would recommend that a statement of intent to increase competition in the marketplace is included in the strategy, and that one of the methods of achieving this is for general practices to be given some direct purchasing control over clinical systems and applications. So long as IT budgets are held at local levels i.e. Health Boards, the attraction of immediate economy by standardising to a single supplier is strong. But by creating a local monopoly, there is no local driver for improvement. Further, there is not yet any obligation on Health Boards to collaborate on IT support - although currently much of this is done by Remote Access over N3. At the GP practice level, mutual support via User Groups is effectively at a national or UK level already. Thus a mixed economy of suppliers at the GP practice level can be efficiently serviced at the national level, with benefits in reducing areas within which each supplier can operate as a monopoly.

8.4.2 Innovation

Encouraging Innovation: SCIMP are concerned that as eHealth systems become increasingly essential for NHS Scotland the data they contain will be stored in proprietary data structures and accessible only by using proprietary applications. This leads to supplier 'lock-in' and has two main effects. Firstly, when the supplier is no longer able to meet the requirements of the service we have huge challenges in moving to a new one, caused by barriers from data migration through to user interface design. This can lead to a reluctance to change supplier and an acceptance of limitations on performance and function – it constrains what we can achieve.

Secondly, because all the data is held by one or two suppliers it is impossible for innovators to enter the marketplace. Barriers range from cost of licensing and conformance through to cultural issues of trust and governance. We consider it a significant risk that NHS Scotland primary care software does not develop at the same pace as that of other industries because of this issue.

We note that NHS England's GPSoC program has required GP system suppliers to open their Application Programming Interfaces (APIs) to support data exchange and third-party suppliers; these APIs are embedded in the systems of our current suppliers, and we should ensure they are specified for future suppliers for Scotland. API use should specify the requirement for complying with the clinical content of agreed common data models.

To address it we suggest a strategic aim is to provide access to patient data (with appropriate governance) for small and medium sized enterprises in Scotland. All new software procured in NHS Scotland holding patient data should be required to expose this via APIs, and, over time, legacy software should be so upgraded. This may be achieved via contractual means, by providing improved inter-operability tools, or by specifying that NHS Data repositories (such as the proposed single medication record) shall be accessible via APIs.

9 Summary of recommendations

- Utilise eHealth to improve the business of primary healthcare delivery
- Improve electronic communications with patients
- Establish a programme to examine and improve data quality in GP systems and address the multiple uses of this data.
- Establish a programme to develop metrics to ensure the impact of other priorities will improve outcomes in general practice.
- Develop policy and procedures to ensure data in e-Health systems in NHS Scotland can be safely exchanged and shared between all systems, including its safe transfer with GP2GP.
- Establish secure, safe and reliable electronic communications between health and social care providers and also with their patients or clients with integrated and interoperable records.
- Provide access to patient data for individual patients to use directly in software applications to support their own health care.
- Allow third party companies, small and medium sized enterprises to access health care data currently held in proprietary structures and develop innovative improvements.
- Find and support practices already using online services successfully, to develop documentation or other educational resources nationally.
- Gather qualitative data on the benefits (or otherwise) of using on line services from a practice and patient perspective.
- Resource training and implementation of these services for practices.
- Define NHS Scotland-wide baseline requirements for such services and provide a national minimum specification for suppliers to benchmark against.
- Ensure GP system suppliers understand the business requirements of practices, in particular with some unique NHS Scotland characteristics of smaller practices, remote and rural care and different e-Pharmacy implementations.
- Provide technical support for patients using these services with help desk functions.
- ID verification services should be moved out of practices to other agencies, for example Government agencies or their sub-contractors such as Post Offices.
- Systems to support credential 'passthrough', so that the authenticated user can be linked to other systems such as hospitals or other Secondary care services e.g. Renal Patient View, My Diabetes.
- Move towards a common User Interface regardless of underlying clinical system by providing the data to Patient Portals.
- Understand the business requirements of Health Boards to allow them to support and implement these services in their practices.

- Develop network of practice 'champions' who use innovative services and resource them to share their positive experiences and develop learning tools to assist other practices to implement the changes required.
- Provide a website for patients to check which practices provide such services.
- Publish a regular newsletter updating practices on progress.
- Involve patient representative groups in the programmes.
- Measure and evaluate impact to provide evidence of benefit.
- Co-ordinate eCMS and pharmacy contracts with practice processes to improve repeat medication.
- Providing methods for remotely using healthcare systems.
- Multiple platform delivery of records data and information
- Electronic team management support using portals.
- Patient or carer user tools and information integrated with team record systems
- Electronic decision support systems such as decision or referral pathways
- Wireless communication infrastructure
- GP contract IM&T DES to improve data quality
- Minimal functionality specification for practice websites
- Automation of summary clinical data using existing data structures with contextualisation to the recipient based on their requirements.
- Develop the GP contract to reuse data generated by the system and concentrate on allowing clinicians to manage the clinical record for the patient's care.
- Develop a new model of consent to data sharing that can be shared across the NHS and delegate management of this to the patient or carer themselves via patient portals.
- Adopt standards for Ambulance documentations.
- Develop single medication record
- Develop specific requirements for data sharing partnerships
- Establish SPIRE pathfinders to develop GP dashboards to drive quality improvement
- Access to KIS information by social services.
- Embed findings of KIS evaluation in future developments including access to KIS information by social services, automatic inclusion of key items such as vaccinations and positive screening results.
- Develop standard data models to enable safe consistent exchange of clinical data with all professionals involved in the care of a patient.