Health Information and Quality Authority

An tÚdarás Um Fhaisnéis agus Cáilíocht Sláinte

RECOMMENDATIONS ON

ICT Enablement of Older Persons Services

Draft for Consultation

March 2022

About the Health Information and Quality Authority

The Health Information and Quality Authority (HIQA) is an independent statutory authority established to promote safety and quality in the provision of health and social care services for the benefit of the health and welfare of the public.

HIQA's mandate to date extends across a wide range of public, private and voluntary sector services. Reporting to the Minister for Health and engaging with the Minister for Children, Equality, Disability, Integration and Youth, HIQA has responsibility for the following:

- **Setting standards for health and social care services** — Developing person-centred standards and guidance, based on evidence and international best practice, for health and social care services in Ireland.
- **Regulating social care services** — The Chief Inspector within HIQA is responsible for registering and inspecting residential services for older people and people with a disability, and children's special care units.
- **Regulating health services —** Regulating medical exposure to ionising radiation.
- **Monitoring services** — Monitoring the safety and quality of health services and children's social services, and investigating as necessary serious concerns about the health and welfare of people who use these services.
- **Health technology assessment** — Evaluating the clinical and cost-effectiveness of health programmes, policies, medicines, medical equipment, diagnostic and surgical techniques, health promotion and protection activities, and providing advice to enable the best use of resources and the best outcomes for people who use our health service.
- **Health information** — Advising on the efficient and secure collection and sharing of health information, setting standards, evaluating information resources and publishing information on the delivery and performance of Ireland's health and social care services.
- **National Care Experience Programme** — Carrying out national service-user experience surveys across a range of health services, in conjunction with the Department of Health and the HSE.

Overview of the health information function of HIQA

Healthcare is information-intensive, generating huge volumes of data every day. Health and social care workers spend a significant amount of their time handling information, collecting it, looking for it and storing it. Therefore, it is imperative that information is managed in the most effective way possible in order to ensure a high-quality, safe service.

Safe, reliable healthcare depends on access to, and the use of, information that is accurate, valid, reliable, timely, relevant, legible and complete. For example, when giving a patient a medicine, a nurse needs to be sure that they are administering the appropriate dose of the correct medicine to the right patient and that the patient is not allergic to it. Similarly, lack of up-to-date information can lead to the unnecessary duplication of tests — if critical diagnostic results are missing or overlooked, tests have to be repeated unnecessarily and, at best, appropriate treatment is delayed or at worst not given.

In addition, health information has a key role to play in healthcare planning decisions — where to locate a new service, whether or not to introduce a new national screening programme and decisions on best value for money in health and social care provision.

Under section 8(1)(j), HIQA is charged with evaluating the quality of the information available on health and social care and making recommendations in relation to improving the quality and filling in gaps where information is needed but is not currently available.

Information and communications technology (ICT) has a critical role to play in ensuring that information to drive quality and safety in health and social care settings is available when and where it is required. For example, it can generate alerts in the event that a patient is prescribed medication to which they are allergic. Further to this, it can support a much faster, more reliable and safer referral system between the patient's GP and hospitals.

Although there are a number of examples of good practice, the current ICT infrastructure in Ireland's health and social care sector is highly fragmented with major gaps and silos of information which prevents the safe, effective, transfer of information. This results in people using the service being asked to provide the same information on multiple occasions.

In Ireland, information can be lost, documentation quality varies, and there is over-reliance on memory. Equally, those responsible for planning our services experience great difficulty in bringing together information in order to make informed decisions. Variability in practice leads to variability in outcomes and cost of care. Furthermore, we are all being encouraged to take more responsibility for our own health and wellbeing, yet it can be very difficult to find consistent, understandable and trustworthy information on which to base our decisions.

As a result of these deficiencies, there is a clear and pressing need to develop a coherent and integrated approach to health information, based on standards and international best practice. A robust health information environment will allow all stakeholders, the general public, patients and service users, health professionals and policy makers to make choices or decisions based on the best available information. This is a fundamental requirement for a high reliability healthcare system.

Through its health information function, HIQA is addressing these issues and working to ensure that high quality health and social care information is available to support the delivery, planning and monitoring of services. Following the publication of the COIVD-19 Nursing Homes Expert Panel Examination of Measures to 2021, HIQA undertook a significant programme of work to implement the recommendations in the report. As part of that programme of work, the HIQA has undertaken the development of a set of Recommendations to the Minister for Health in respect of an integrated IT system for older persons (Recommendation 6.3).

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Chapter 1 Background

In common with many other countries, Ireland is facing the challenge of ageing population, with those aged 65 years or more expected to account for 50% of all healthcare activity by 2031.[1] An older person's patient journey typically has a high number of transitions across care settings, requiring very close coordination between the different health and social care domains, but with the older person's information typically held in a number of IT systems or in paper records, in silos across those settings.[1] Getting a full picture of the older person's care can be a challenge.

For example, following discharge to the community, the discharge summary is the GP or public health nurse's sole source of information regarding treatment administered, medications prescribed or discontinued, or additional care requirements related to the older person's acute stay. The quality of this data varies and discharge summaries can be delayed so GPs, public health nurses, and other health and social care professionals would benefit from more timely and effective sharing of this information.

The COVID-19 pandemic intensified these challenges and, in August 2020, led the COVID-19 Nursing Homes Expert panel to call for the accelerated implementation of an integrated IT system for older persons.[2] The system was intended:

- to ensure the effective sharing of information across residential settings, home support services, and day care, and to incorporate needs assessment and care planning
- to support the management, delivery, and reporting of services
- to enable planning of alternate service provision and capacity development.[2]

HIQA has a long-standing programme of work in the area of eHealth and has developed national standards, guidance, and recommendations in areas that include patient summaries and electronic prescribing in the community. Through this programme of work, HIQA was aware that the capabilities requested in the Expert Panel are extensive and that they are unlikely to be provided by a single integrated IT system. It was also aware of existing programmes and initiatives intended to deliver those capabilities.

Therefore, HIQA has therefore undertaken to develop a set of recommendations to the Minister for Health on the ICT enablement of older persons services. These recommendations are intended to provide an analysis of the current situation nationally and of best practice internationally and, informed by that evidence, to outline measures that would ensure that the capabilities requested by the Expert Panel are provided in line with national priorities, including Sláintecare.

1.1 Methodology

Under the Health Act 2007, HIQA has a statutory remit to develop standards, evaluate information and make recommendations about deficiencies in health information. The responsibilities of HIQA in this regard are outlined in the following sections of the Act:

- Section 8(1)(i): to evaluate available information respecting the service and the health and welfare of the population
- Section 8(1)(j): to provide advice and make recommendations to the Minister for Health and the HSE about deficiencies identified by HIQA in respect of the information referred to in paragraph (i).

In line with its remit, these recommendations were developed using its standard recommendations development process, the HIQA Quality Assurance Framework, outlined here.

Review of Evidence — Evidence was compiled through a systematic review of materials and research produced by authoritative organisations, interviews with subject matter experts and review of published academic articles. The Best Practice Review was published on the HIQA website in 2021 and the As Is will be published in 2022.

Convening of Advisory Group — The role of the Advisory Group participating in the development of these recommendations is to advise on the identification of key stakeholders and on the Draft Recommendations themselves. Key stakeholder organisations from health and social care services for older persons, as well as from ICT enablement, were invited to nominate representatives. The Advisory Group has met twice, in September 2021 and in January 2022. A full list of the organisations that have been invited to nominate members to the Advisory Group is available in Appendix A.

Engagement — A public consultation, lasting six weeks, will be undertaken over March and April 2022. During that time, interested parties will have an opportunity to make submissions on the Draft Recommendations. Focus groups and interviews with key informants will also be undertaken. All feedback received will be analysed, then the Draft Recommendations will be amended appropriately. This analysis will be published as the Stakeholder Engagement Report on the HIQA website together with the final set of recommendations.

Approval of Recommendations — The final Draft Recommendations will be presented to will the HIQA Board for approval. Subject to Board approval, the recommendations will be submitted to the Minister for Health for approval.

Next steps — Following the second meeting of the Advisory Group on 25 January 2022, feedback was analysed and the Draft Recommendations amended accordingly. The next step is to undertake a six-week public consultation on the Draft Recommendations. Focus groups and formal interviews with stakeholders will also be undertaken during this phase.

Chapter 2 Current challenges

In common with many other countries, Ireland is facing the challenge of ageing population, with those aged 65 years or more expected to account for 50% of all healthcare activity by 2031.[1] An older person's patient journey typically has a high number of transitions across care settings, requiring very close coordination between the different health and social care domains.[1] Thus, an older person's information typically held in a number of IT systems or in paper records, in silos across those settings, making it extremely difficult for healthcare professionals treating the older person to share information safely and effectively.[1]

The high number of transitions, and the increasingly complex nature of the care, make the safe and effective exchange of information a particular challenge for older persons services. However, this challenge is common, to a large extent, to the delivery of services to almost all other cohorts and populations across primary, secondary and community settings. Therefore, while this project looks specifically at the ICT enablement of older persons services, these recommendations on ICT enablement apply more broadly across other cohorts and populations.

In the community, the focal points of an individual's care (including an older person's care) are the GP and public health nurse, who typically assess the individual's need. For an older person, this often includes assessment for homecare services or for residential care in a nursing home. An older person often receives significant care from other healthcare professionals in community, in the areas of physiotherapy, occupational therapy, speech and language, social work, dietetics, podiatry and psychology.

Services for individuals (including older persons) are provided by a combination of public and private providers. GPs are private contractors, while public health nurses work for the Health Service Executive (HSE). The HSE provides a proportion of homecare services, of residential care (nursing homes), and of the other services listed, including physiotherapy, occupational therapy, among others, while the remainder are provided by contractors in the private sector.

Some progress has been made in the ICT enablement of services across cohorts and populations. However, ICT infrastructure is, by and large, quite underdeveloped and levels of ICT enablement also vary considerably, especially across primary and community settings. Again, while these recommendations focus on older persons as a population, in response to the Nursing Homes Expert Panel recommendation, the challenges and corresponding measures outlined apply across populations.[2]

95% of GP practices use a practice management system that has been accredited by the Irish College of General Practitioners GP Information Technology Group (GPIT).[3] However, public health nurses and other public sector healthcare

professionals typically use paper-based records, while privately contracted healthcare professionals sometimes having higher levels of ICT enablement.

ICT enablement also varies significantly across the nursing home sector, from almost entirely paper-based systems to highly sophisticated ICT enablement, where separate dedicated systems have been developed for the medical, nursing, and pharmaceutical domains. These systems typically do not interact with each other or with GP practice management systems.

Following discharge to the community, the discharge summary (typically paper-based) is the GP or public health nurse's sole source of information regarding treatment administered, medications prescribed or discontinued, or additional care requirements related to an individual's acute stay. The quality of this data varies and discharge summaries can be delayed so GPs, public health nurses, and other health and social care professionals would benefit from more timely and effective sharing of this information.

Getting a full picture of an individual's care can also be a challenge. GP practice management systems allows GPs to generate an up-to-date list of the medications they have prescribed or of the person's current conditions. But, for a nursing home resident, they must check paper-based records or electronic systems onsite in the home and manually create such lists or referral letters, greatly increasing the risk of error.

Additionally, after waiting long periods (for example, up to two years) for consultation and guidance, many acute settings, private or public, are understood to be developing their own electronic health records locally, with no clear national direction on interoperability.

This mix of paper-based records and electronic systems, the tactical development of separate systems, and the lack of interoperability has contributed to fragmentation of an individual's (including an older person's) record.

Chapter 3 Expert Panel recommendation and its scope

The COVID-19 pandemic intensified these challenges and, in August 2020, led the COVID-19 Nursing Homes Expert panel to call for the accelerated implementation of an integrated IT system for older persons. The system was intended:

- to ensure the effective sharing of information across residential settings, home support services, and day care, and to incorporate needs assessment and care planning
- to support the management, delivery, and reporting of services
- to enable planning of alternate service provision and capacity development.[2]

The scope of this recommendation should be fully understood. It seeks the safe and effective sharing of information along the older person's pathway: across every residential care settings (including public and private nursing homes), every day-care setting, as well as with home support services (again including the many public and private providers), GP practice management systems, discharge planning in acute settings and others. Additionally, it would support the safe and effective sharing of information during the key transitions of care between acute settings and community care.

It would be used (potentially) by every type of healthcare professional working with the older person as well as the carers interacting with the older person. It would provide those roles with appropriate access to the older person's information and also with the tools they need for the management, delivery, and reporting of all services. And it would include the capability to plan alternative service provision and would provide business intelligence to support capacity planning.

Thus, the capabilities requested in the Expert Panel recommendations are extensive and are unlikely to be provided by a single integrated IT system. The capabilities described, for information sharing, service management, and capacity planning across all settings, would require a mature national infrastructure for the sharing and management of health information across all cohorts and populations. Current deficits in the national health information system, and measures for their remediation, were outlined in the Need for Reform of Ireland's Health Information System (HIQA, 2021).[4]

Chapter 4 What should be done

As noted earlier, the challenges that the COVID-19 Nursing Homes Expert Panel sought to address are common to the delivery of care across all cohorts and populations and are exacerbated by deficiencies, at national level, in the national health information system. The Need to Reform Ireland's Health Information System (HIQA 2021) provides an analysis of these factors and outlines measures for their remediation. International best practice also provides learning to inform the implementation of these measures, and best practice, in Ireland.[5]

4.1 Position paper

The Need to Reform Ireland's Health Information System (HIQA 2021) provides a comprehensive analysis of these deficiencies and making recommendations in six areas for a well-functioning national health system: Strategy, Strategic Leadership and Governance, Legislation, Workforce, Health Information Standards and Interoperability, and Health Information Infrastructure and Security.[4]

In particular, the paper explicitly called for a clear vision of the ICT enablement of older persons services noting that, for that vision to be realised, measures were needed in at least three areas:

- **Strategy** – A clear national health information strategy is needed, including a sound legal framework, a viable workforce and appropriate funding mechanisms, Ministerial approved standards, and a robust and secure health IT infrastructure. This national strategy would inform the national strategy for ICT enablement of older persons services.
- **Strategic leadership and governance** – A strategic entity (eHealth Ireland) should be established, outside of the HSE, with the legislative remit to provide strategic leadership and governance on eHealth and on the collection, use and sharing of health information in Ireland. In parallel, an operational function, developing and supporting the systems required for the delivery of care, should continue to exist in the HSE. Clear policy on health information is also needed, together with a clear roadmap on how the different agencies within the health and broader governmental organisations are coordinated to deal with health information.
- **Legislation** – A legislative framework, setting out clearly how information should be collected, used and shared for people interacting with the health and social care system and covering national eHealth priorities, including summary and shared care electronic health records.

The paper identified requirements for a framework of national health information standards based on clear policy direction, for resolution of current fragmentation of governance structures, and for a secure Health IT infrastructure, supported by ongoing investment.

Public and patient engagement was also held to be critical to the successful implementation of a high-quality health service as was education of the broader user workforce, to support health professionals to use digital health solutions in an effective, responsible and ethical way.

Internationally, a number of other countries have made progress in these areas, while still facing some challenges. Therefore, the best practices they have identified and the lessons they have learned are very relevant and helpful. Thus, these Recommendations are informed by international evidence and best practice.

4.2 International best practice

To understand best practices and lessons learned in the ICT enablement of older persons services, eight countries that have made considerable progress in ICT enablement and adoption of national eHealth solutions were reviewed. These countries were Autralia, Canada, Denmark, Estonia, Finland, Northern Ireland, Scotland and New Zealand.[6]

Broadly, each of these countries has been seeking to provide care to each individual at the lowest level of complexity and as close to their home and community as possible. Several countries reflect the Irish situation with services are delivered by a combination of public providers and private provider. Thus, they are facing the challenge of varying levels of ICT enablement, especially in community settings, and varying levels of digital skills in the broader workforce.

In almost all countries reviewed, ICT enablement of older persons services was progressed as part of ICT enablement of primary and community care (older persons services form a significant part of each) and was also strongly informed by national eHealth strategy, with dependencies on national eHealth enablers. For example, seven of the eight countries reviewed used their national electronic health record (and national electronic social care record) to manage an older person's health information. National health identifiers and other national eHealth solutions are also used.

The national implementation approach used for older persons services also reflects that outlined in the respective national eHealth strategy of the country. The approaches taken in Scotland and Australia exemplify a 'middle-out' approach to national implementation, which is considered optimum, with the State working closely with stakeholder groups and facilitating the collaborative framework of

national standards, within which eHealth solutions are developed, and supporting the development of the eHealth ecosystem. Typically, this includes an independent national strategic entity coordinating and providing leadership on eHealth, together with a clear national eHealth strategy and the requisite policy and legislative framework.

However, these high levels of ICT enablement did not necessarily ensure effective sharing of information across community settings. Finnish healthcare centres provide a broad range of services, including minor surgery rooms, diagnostic facilities, lab testing, geriatrician support, inpatient departments and wards. Levels of ICT enablement are also high. In spite of this, challenges remain regarding continuity of care, owing to the lack of clear care pathways.

Another world leader in eHealth, Denmark, has historically had high levels of ICT enablement, with widespread use of electronic records among health and social care professionals. Danish eHealth strategy initially focused on automation of key information flows, exchanging clinical documents through a central messaging broker, using document-based standards. New Zealand also used the message broker historically.

Shortcomings with the 'sending' model has led both countries adopting a new 'sharing' approach. In Denmark, community-based health and social care professionals can see the older person's common patient overview. This overview is based on a minimum dataset developed for use by those care professionals, and on the older person's shared medication record. In New Zealand, a patient's medication is also shared between prescriber, pharmacy and care organisation staff.

Effective sharing of information in community settings is still challenging owing to interoperability issues. In New Zealand, different systems are used in healthcare, in residential care, and in hospitals, as well as by GPs. Primary care can access a patient's hospital record but home care cannot and New Zealand's InterRAI Assessments for home care are not shared with long-term residential care.

The Scottish Electronic Care Record is typically hosted behind the firewall of an acute hospital, and so cannot be shared with some Scottish community settings such as nursing homes. In Australia (the only country reviewed to set up a dedicated record for older persons), the dedicated Aged Care record was not interoperable with the national eHealth record. In Finland and in Estonia, the respective electronic health record systems use older architectures, and therefore cannot interoperate with the newer respective national social care records.

Use of older standards also created challenges in Finland and Estonia. In both countries, all healthcare professionals are legally obliged to upload health information to the respective national patient data repository, as a means of data sharing. However, the respective repositories uses an older architecture with mostly unstructured data, which limits usefulness in practice. Thus, a lack of interoperability between systems, use of older document-based standards, and poor user experience continued to impede the effective sharing of information.

In Canada, InterRAI Assessments in home care and in the community have provided high quality data that is used in care planning, resources allocation, outcomes measures, and quality indicators. Recently, the Canadian Institute of Health Information (CIHI) moved from using older HL7 standards to adopt HL7 FHIR. This enabled them to take advantage of the latest InterRAI Assessments and replaced three InterRAI systems, with a new InterRAI integrated system covering home care, long-term care, and child and youth mental health sector. However, InterRAI Assessment data for home care is new and complex, and is expected to take another five to ten years to show real value. Additionally, organisations require the education, the staff, and the support to use the resulting data to its full potential.

In New Zealand, InterRAI Assessments are used consistently for home care, but, in practice, are applied differently by the district health boards and it is understood that few GPs use the full assessment. Having two separate (geographic) instances initially created challenges for individuals transferring. The InterRAI Assessment package also uses the older HL7 version 2 standard, with few options for integrating assessment results. A new generic assessment platform is being developed.

Where digital services were in use for a number of years, feedback on user experience indicated room for improvement. In use as a digital service in New Zealand for 10 years, the InterRAI assessment system was found to have issues that had a very negative impact on the users' experience and on system performance, and also used older, document-based standards, which limited the usefulness of the information.

Findings from the eighth country reviewed, Australia, demonstrate further lessons learned regarding a dedicated national record for older persons and a national eHealth ecosystem. Australia has an established, national electronic health record and a number of supporting national eHealth solutions, such as identity management services. A dedicated national eHealth authority, Australian Digital Health Agency, which works with all stakeholders, including vendors, to collaboratively develop standards and provide direction.

In 2015, a full Aged Care programme was set up, with supporting ICT enablement that include website, portals, and a dedicated aged care record, My Aged Care Record, underpinned by a full customer relationship management (CRM) ICT

solution. However, an ICT Strategy and Architecture Review (2019) found the Australian Aged Care system to be a 'fragmented ecosystem', with cumbersome legacy technologies that provide little or no integration and give poor user experiences. Multiple solutions were in use, some obsolete, and multiple portals also, each requiring different client credentials. Systems were found to operate in silos and to focus on reporting requirements rather than taking a client-centric view.

Thus, the countries reviewed had recognised the need for a clear overall vision of the ideal future state across the full public and private sector. ICT enablement of older persons services was progressed as part of the ICT enablement of broader transformation of health service delivery. As such, existing national eHealth solutions, such as electronic health records, social care records and national identifiers among others, were used.

As national eHealth programmes have evolved, they have typically moved aware from sending document-based information through a national messaging broker. Limitations have been identified with HL7 version 2, and there is a clear trend towards framework of national standards (particularly Health Level 7 (HL7) Fast Healthcare Interoperability Resources (FHIR) and application programming interfaces (APIs) to ensure (near) real-time sourcing of data) to support the effective sharing of health information, underpinned by national eHealth solutions such as national shared care record and national health identifiers.

This includes the definition of national standards for minimum datasets for the healthcare professionals providing care. It also includes the use of standard assessment tools, with five of eight countries using an InterRAI Assessment information system and the sixth country (Finland) moving from paper based to information system implementation. Significant education, resourcing and infrastructure are needed to ensure best practice use of InterRAI Assessments. Depending on the complexity, InterRAI data may take several years to mature and to provide real value.

Significant funding, specialised skillsets and protected time for training are required across the full lifecycle of each element of the 'ICT Spine' and of national eHealth solutions. There is also a recognition of the crucial roles of user engagement in designing and procuring systems and of effective workforce education and training. Best practice shows that the optimum approach is not to focus narrowly on the introduction of IT solutions but to focus, instead, on the overall transformation, working closely with all stakeholders (and end-users in particular) to understand and implement the service change that this requires, supported by technological (or ICT) enablement.

These countries also undertake 'uplift' initiatives for the sector at national level, such as incentivisation of service providers to co-design, adopt and provide training on

new solutions and technologies in Australia. Or through the focused 'uplift' of all residential care settings through a national digital care homes initiative in Scotland.

Therefore, rather than focusing on a single integrated IT system, these recommendations consider the ICT enablement of older persons services and their wider context.

Summary

In each of the countries reviewed, the ICT enablement of older persons is a complex undertaking and is part of the wider transformation of service delivery to the population-based, integrated care model with national eHealth enablers. Thus, it was progressed as part of broader ICT enablement of primary and community care, as well as secondary settings.

Each country reviewed typically:

- used **existing national solutions** such as electronic health records, social care records, national health identifiers and others. (Seven of the eight countries, with Australia the only exception.)
- had **strong engagement with stakeholders**, especially end-users, to ensure their full participation in across the whole transformation,
- had developed, or were developing, **a clear longer term vision** that was shared by all stakeholders
- were moving towards the **standardised sharing of information** across the sector, through the collaborative development of a framework of national standards and by supporting adoption of those standards. This includes the mapping of data across health and social care and moving from older standards to the use of HL7 FHIR
- used **national standard assessments** (for older persons services specifically) with five of eight countries using an InterRAI Assessment information systems, and a sixth country using paper-based version of InterRAI Assessment
- had identified the **complexity of InterRAI Assessment data** and the time needed for appropriate metrics to be developed as well as the need for education, resourcing, and support
- supported by **strong national leadership on eHealth**, typically through an independent strategic entity
- was also strongly informed by **national eHealth strategy**, with dependencies on national eHealth enablers,
- was also supported by **national initiatives**, such as for the 'uplift' of residential care homes to support the ICT enablement or for the upskilling of healthcare professionals in the sector.

Chapter 5 What has been done

As noted earlier, international best practice shows that ICT enablement should form part of a broader project which focuses on the service change it enables. It is also important to understand the background to the ICT enablement of older persons services in Ireland.

5.1 Integrated care through Sláintecare

Over the past decade or more, and in common with other countries, Ireland has sought to transform health service delivery to a population-based, integrated caremodel.(7) Ireland is committed to developing a population-based approach to service planning and funding, which will address health inequalities, and better align services to local population need. As the Sláintecare Implementation Plan outlines, this model seeks to provide to care to older persons (and other populations) at the lowest level of complexity and as close to their homes and communities as possible.(8) The Department of Health has committed to overseeing and progressing reforms aligned to the Sláintecare vision, including the establishment of a new statutory scheme for the financing and regulation of home care services.

Accordingly, national strategy has focused on the structural, service, financial and other reforms needed, which are ongoing at the time of writing.(9) These reforms include setting up the community healthcare networks (CHNs), and the planned transition to regional health areas (RHAs) from CHOs. Service reforms include the development of new national models of care through national clinical programmes and integrated care programmes. Funding and resourcing for primary and community care has also been increased significantly under the Enhanced Community Care (ECC) programme.

EHealth is a crucial enabler of the integrated care model and the Sláintecare vision, and has been developed in parallel to the structural, service, and other reforms. The National eHealth Strategy (2013) outlined the eHealth strategy, comprising a core of national eHealth solutions such as the national shared care record for all populations (including older persons), and the establishment of an independent strategic entity (eHealth Ireland) to provide national guidance and oversight. The HSE set up national strategic programmes for these eHealth objectives, including for national health identifiers, the national electronic health record and the national shared care record. All these national strategic programmes were set up with the HSE organisation and made subject to internal governance structures.

Other elements of national infrastructure include the national messaging broker, Healthlink, which provides standards-based exchange of health information for some interactions between acute and GPs or community settings, such as for laboratory

test booking and reporting of results. These messages use the older, HL7 version 2, document-based standards. More recently, some progress has also been made on national and international standards, including for HL7 FHIR. Ireland is also engaged on work to support the enablement of ePrescribing, patient summary, medical imaging, lab results and reports, and hospital discharge summaries.

The HSE is also undertaking and progressing a programme of data standardisation, through a number of initiatives. This includes the development of the National Data Dictionary, the designation of SNOMED CT as the national standard for clinical terminology, and the new Data and Digital Strategy.

As noted earlier, levels of ICT enablement vary considerably across community settings, and between organisations and locations for acute settings.

5.2 Transformation of older persons services

Specific to older persons, the National Clinical Programme for Older Persons (NCPOP) developed the new model of integrated care for older persons, with care pathways across acute settings and across community settings.[10] The model designated the InterRAI assessment as the national standard for care needs assessment. The Integrated Care Programme for Older Persons (ICPOP) developed a ten-step framework for the implementation of integrated care pathways informed by the NCPOP model.[11] Thus, ICPOP service model seeks to provide a model of service transformation, specifically for older persons services and including the necessary ICT enablement. It is aligned to the wider transformation of healthcare under Sláintecare.

Pilot ICPOP projects set up in each community healthcare organisation (CHO) over 2016 and 2017. Prerequisites for the ICPOP model were identified as standardised planning and funding processes, well-defined care pathways with shared care plans, coordination of care and referral services, and enhanced system capacity – characteristics of the new population-based, integrated care model.

Early findings from the pilot implementations identified case management software platform (to be interoperable with the National Shared Care Record) as the highest priority ICT enabler. A shared record, an integrated Community IT system, the InterRAI Assessment information system, and care planning capabilities were also considered vital as was dedicated ICT support for all local and regional initiatives.

Findings from one review of three ICPOP pilots showed some positive results. Multi-disciplinary teams (characteristic of an integrated care model) helped to drive the adoption of the new model of care – but mainly at local level.[12] Barriers to implementation were also identified. In practice, care pathways were found to be extremely complex and, even then, did not suit every patient.

ICPOP was also hampered by unclear regional administrative boundaries, fragmented funding structures (for example, between community and acute hospitals) and quick turnover of senior level decision makers. However, the structural reforms underway as part of Sláintecare, including the transition from CHOs and hospital groups (HGs) to regional health authorities (RHAs) are expected to address these issues.

Limitations of the ICPOP pilots included low levels of participation by GPs and public health nurses – the focus of an older person's care in the community – reflecting the lack of integration between public and private areas of the sector. ICPOP only applies to a small proportion of older persons services.

Slow progress implementing the national eHealth Strategy was identified as a significant national level barrier to the implementation of ICPOP in practice.

Thus, the ICPOP model has dependencies on the progression of the structural, service, and other reforms under Sláintecare, especially the redesign of service delivery for older persons. It also has dependencies on the progression of Community ICT solutions and national eHealth solutions, aligned to Sláintecare.

The national steering group is currently deciding the terms of reference for a formal evaluation of the full ICPOP programme. The findings from this evaluation will provide important evidence to inform both the ICT enablement of older persons service and the wider Sláintecare programme.

5.3 COVID-19 impact

The COVID-19 pandemic intensified the challenges in older persons care. At the beginning of the pandemic, many critical resources were redeployed to pandemic response and national strategic eHealth projects, such as the national shared care record, were paused. The HSE moved quickly to develop a range of innovative solutions, such as using the eReferrals system to provide COVID-19 test booking and results functionality (exceeding 3.1 million tests in 2021).

With the ongoing impact of COVID-19, the Sláintecare Implementation Strategy and Action Plan 2021-2023 prioritised the delivery of summary and shared care records.[13] The HSE Service Plans for 2021 and 2022 also provided significant extra funding and resources to enhance service capacity, especially in community settings through the Enhanced Community Care (ECC) programme, through which ICPOP received funding. This also includes ECC leads and ICT leads at community health organisation level.

A single management team, the Community Digital Oversight Group (CDOG, also known as the Integrated Community eHealth and ICT Oversight Committee), was set up late in 2021, to prioritise competing ICT intiatives in the non-acute sector.

These initiatives remain subject to sanction from the Department of Expenditure and Reform. The Group is chaired by the National Director for Community Operations, with the Assistant National Director for Community Operations as vice chair. Members include representatives from two CHOs, from the Officer of the Chief Information Officer, the Department of Health, the Enhanced Community Care Programme, with the National Coordinator of GPIT Group representing GPs. The Group reports to the Chief Operations Officer, through the Chair.

CDOG is focusing on delivery of basic functionality that will support the delivery of formal care services for populations in community (including older persons). This will consist of integrated community health systems, e-referral, triage, waiting list, and case management functionality. The HSE Digital Transformation function also provides a pipeline of 'agile, well-governed' solutions that have been through pilot testing, to the CDOG for approval.

Requirements across the different populations in community, including older persons, persons with disabilities, and others, are broadly similar. Therefore, the HSE intends to provide a common, centrally maintained summary of care for the patient through functionality across these populations. While the CDOG has identified six principles of interoperability with future eHealth solutions, it remains crucial that a clear vision is articulated, of how these elements will integrate with the national strategic approach that includes national eHealth solutions, as part of a national infrastructure to support the management and sharing of information.

Known as the 'ICT Spine', this basic functionality has four pillars:

- **Integrated Community Case Management System**, which incorporates clinical records and care provision, patient administration, analytics and reporting, and foundations (that is, interoperability, secure mobile platform, and consent, among others).
- **Specialist Systems**, including:
    - the **Integrated Residential Care Management System**, which will manage beds in public residential care settings
    - the **Integrated Home Support Management System**, which is part of a new overarching approach across rehabilitation, re-enablement, intermediate care and other models of care
    - the **InterRAI Assessment** information system (replacing the Single Assessment Tool information), which is a comprehensive assessment for home care in the community and for discharge from acute hospitals.

- **Tele Health**, including video-enabled care, remote monitoring technology, and delivery of online care.
- **Triage Reference Group**, which reviews any requirements for community and, after scoring, presents them to CDOG. It has representatives from the corporate, clinical, and informatics domains, among others.

The HSE is prioritising the procurement of these solutions and hosts three working groups related to the Specialist Systems pillar: the Home Support working group, the Residential Care working group, and the InterRAI working group. Each working group is a separate workstream, with a separate pilot, and input regarding organisational change is provided is provided. These three systems, together with the Integrated Community Case Management System (ICCMS) are considered particularly relevant for ICT enablement of older persons services.

Implementation encompasses not only the ICT solution itself but also the larger change management process. The ICCMS programme has five workstreams: user experience and pathways, data and reporting, our people and change, national directories and integration, and the ICCMS solution. Support from the services is considered vital for the success of the 'ICT Spine'. National representatives of key user groups have been engaged to gather requirements during the pilot projects and broader engagement of key user groups is expected during later phases. Thus, the 'ICT Spine' is a multi-annual undertaking that requires significant cultural change.

For example, the InterRAI Assessment information system alone represents a change for GPs and public health nurses, from their (respective) well-established assessment tools to a new model of assessment of an older persons for home care needs, as well as from a paper based to a technology-enabled assessment.

The Enhanced Community Care Programme funded the appointment, in 2021, of 128 InterRAI assessors and InterRAI became the national standard from 2022.[14] The roadmap will be finalised in 2022 and will include engagement of the broader end-user groups, including GPs, public health nurses and other core end-users.

The HSE is working as far as possible within the limits of its public remit (and of its time and resources) to engage core end-users in private sector, for example, the HSE expects to make a version of the 'ICT Spine' available to Section 38 and Section 39 providers at a later date. The InterRAI Assessment is considered to be the starting point of the individual (or older person's) care journey, feeding into the ICCMS and other systems across the care journey.

Thus, the InterRAI Assessment will be used a range of healthcare professionals across the public and private sectors, and will bring added complexity and require

interoperability across a broad range of settings. Therefore, the earlier engagement and broader involvement of all end-users in the private sector is essential.

Broader initiatives for the upskilling of healthcare professionals are also underway. The HSE has developed digital health capability framework for nursing and midwifery, which is being extended to other healthcare professionals nationally. Again, core end-user groups need to be engagement more fully and at an earlier stage.

Thus, the HSE is progressing the strategic approach developed by ICPOP and also progressing the 'ICT Spine' in support of enhanced primary and community services for all cohorts and populations, including older persons. The HSE Service Plan (2021), through the Enhanced Community Care (ECC) programme, increasing funding and resourcing for primary and community care significantly, including for ICPOP as a service model for older persons services and for chronic disease management, and for the 'ICT Spine' projects, such as InterRAI Assessment. CHO ICT leads have also been appointed.

The longer term, national strategic programmes, including the national shared care record and other key national eHealth solutions, have also resumed. The scope and functionality of the National Shared Care Record will be determined, including in respect of older persons among other cohorts and populations. The long term goal remains the provision of a single core record, with all of a person's health and social care information.

However, it is crucial that a clear strategy is developed, to describe how these current undertakings, including ICPOP and the 'ICT Spine', align with longer term priorities under Sláintecare — that is, with the national eHealth solutions, including the National Shared Care Record, as those programmes evolve. This long-term direction is needed not only for the national eHealth solutions outlined but also to provide context for informed decision-making on the 'ICT Spine' and other related projects.

Chapter 6 What is being recommended

The term 'ICT enablement of older persons' has been used to describe the provision of the capabilities described in the Expert Panel's recommendation to all stakeholders across the public and private sectors, without the requirement to provide these as a single integrated IT system. The term includes the urgent need for more effective, secure and timely sharing of the older person's health information, across the most important and challenging transitions of care between community and acute settings, as identified by healthcare professionals. This need is not specific to older persons services, but common to other cohorts and populations.

6.1 Strategy and governance

As has been briefly outlined, the ICT enablement of older persons services is a complex undertaking and is part of the wider transformation of service delivery to the population based, integrated care model with national eHealth enablers, envisioned by Sláintecare. Thus, the ICT enablement of older persons has dependencies on national eHealth priorities such as the national shared care record and national health identifiers. Given the move to increased community-based provision of older persons services, there are also dependencies on the HSE 'ICT Spine' for primary and community services, development of which is overseen by the Community Digital Oversight Group (CDOG, also known as the Integrated Community eHealth and ICT Oversight Committee).

The National Working Group for Older Persons provides some oversight of the delivery model for older persons, through the clinical models developed for older persons services (by NCPOP) and their implementation with ICT enablement (by ICPOP). However, the ICT enablement is common to all cohorts and populations, as part of broader initiatives such as the HSE 'ICT Spine' and, ultimately underpinned by the national eHealth solutions envisaged by Sláintecare, including the National Shared Care Record and national health identifiers among others.

Currently, the HSE engages private healthcare professionals and service providers as far as possible, in requirements gathering and at other stages, while prioritising delivery of publicly-funded services through the 'ICT Spine'. Thus, there is some engagement of private healthcare professionals and service providers, however participation can be low. Additionally, private healthcare professionals and service providers have limited support and direction available to them. Some national standards have been developed, but many more are needed.

Some service providers in the private sector, such as pharmacists and some privately-run nursing homes, have already invested significantly in systems and infrastructure. Accreditation of GP practice management systems is provided through

the Irish College of General Practitioners' GP IT group. However, there is no formal accreditation of systems in other domains, such as pharmacy. This leads to fragmentation of the individual older person's record in some nursing homes. It also means that the national 'direction of travel' in the private sector is inconsistent and lacking direction.

Thus, within the limits of its remit, the HSE has provided governance and direction on the ICT enablement of older persons services. It has established governance structures like the National Working Group on Older Persons (comprising NCPOP, ICPOP, and senior management from AFI) to provide oversight specifically on older persons services, in line with national clinical standards and practice and taking a perspective on appropriate ICT enablement for service models. CDOG is overseeing the development of the 'ICT Spine' and endeavouring to ensure forward compatibility with national eHealth solutions.

It is essential that silos do not develop and that the longer term direction is clear.

Therefore, the ICT enablement of older persons services highlights broader needs, which are common across all cohorts and populations — that is, the need for **a strategy, at national level, for the full engagement of the public and private sector** in the ICT enablement of health service delivery, in line with national policy and the Sláintecare vision. It is crucial that this strategy describes how current undertakings, including ICPOP and the 'ICT Spine', align with longer term priorities under Sláintecare — that is, with the national eHealth solutions, including the National Shared Care Record, as those programmes evolve. This will inform future direction across the full sector, public and private, and provide a basis for more informed decision-making by CDOG and other groups.

As noted earlier, within current arrangements, some effective governance structures exist and there is some oversight of the overall ICT enablement of health service delivery, across the full public and private sector. However, there is a need to identify **the appropriate overall governance structure(s)** to develop this overarching strategy and oversee its implementation, across the full public and private sector, aligned to the wider transformation of health service delivery and Sláintecare. This will support the ICT enablement of health service delivery at national level, for all cohorts and populations, including older persons.

An overarching strategy should be developed, at national level, for the full engagement of the public and private sector in the ICT enablement of health service delivery, in line with national policy and the Sláintecare vision. This strategy should describe how current undertakings, including the 'ICT Spine', align with longer term priorities under Sláintecare — that is, with the national eHealth solutions, including the National Shared Care Record,

as those programmes evolve.

The appropriate overall governance structure(s) should be identified, to develop this strategy and oversee its implementation, across the full public and private sector, aligned to the wider transformation of health service delivery and Sláintecare. This will support the ICT enablement of health service delivery at national level, for all cohorts and populations, including older persons.

As also outlined, the Integrated Care Programme for Older Persons, has developed a model for service delivery, with ICT enablement, specifically for older persons. Owing to the overlap with older persons services, chronic disease management is now also using this service model and there is potential for use with other cohorts and populations. Therefore, though there are some limitations in terms of the scale and the levels of private sector participation, the ICPOP model could provide learnings for the wider transformation of service delivery. Stakeholders are currently determining the scope of a formal review of the ICPOP programme. When available, the findings of this **formal evaluation of the ICPOP programme** should inform development of the ICT enablement of older persons services and the wider Sláintecare programme.

ICPOP seeks to provide a national service model for older persons, with appropriate ICT enablement, and stakeholders are currently determining the scope of a **formal evaluation of the ICPOP programme**. The findings of the formal evaluation should inform the overarching strategy for the ICT enablement of older persons services.

6.2 Vision and roadmap

As part of this strategy, **a clear vision for the overall ICT enablement** of older persons services should also be developed, for the short, medium and long term. This vision should provide a common understanding for core user groups, across all the settings outlined, and how it will align with their work practices, across the full sector, public and private. This includes a real understanding of the significant investment of time and resources that will be needed, especially protected time for staff, not only during implementation but also during planning, design, and other phases.

A full stakeholder mapping should be undertaken, across the public and private sectors, and **an appropriate plan** for the engagement of stakeholders, particularly core end-user groups in the public and private sectors, should be developed. This

need is common to all cohorts and populations, including older persons, but a specific mapping and plan may be developed for older persons. The governance structure outlined earlier should be responsible for ensuring this plan is implemented, to ensure that ICT enablement meets the needs of stakeholders, in particular core end users.

A full stakeholder mapping should be undertaken, across the public and private sectors, and **an appropriate plan** for the engagement of stakeholders — particularly core end-user groups in the public and private sectors — should be developed. The governance body should be responsible for ensuring this plan is implemented, to ensure that ICT enablement meets the needs of stakeholders, particularly core end users.
As part of the overall strategy, **a clear vision for the overall ICT enablement of older persons services** should also be developed, for the short, medium and long term. This vision should be developed in collaboration with all stakeholders and provide a common understanding (especially for core user groups) across all the settings outlined, and how it will align with their work practices, across the full sector, public and private.

In common with other cohorts and populations receiving primary or community care, **older persons' information** should be stored and shared through **the 'ICT Spine' initially**, and then through **national eHealth solutions** as these solutions evolve, including the National Shared Care Record. **An overall roadmap** for the ICT enablement of older persons services should also be developed, outlining the realisation of that vision over the short, medium and long term. Again, this should take account of the dependencies on the 'ICT Spine', especially on the following Community ICT solutions:

- The Residential Care Management System
- The Home Care Management System
- The Integrated Community Case Management System
- The InterRAI Assessment System (replacing the Single Assessment Tool).

It should also identify all dependencies on national eHealth priorities, including the National Shared Care Record, and align to their delivery schedules. This recommendation is not specific to older persons as a population, but applies to all cohorts and populations owing to the use of common infrastructure and systems.

National health identifiers, such as the Individual Health Identifier, are used conjunction with other identifying criteria to enable a high degree of safe identification of those presenting for use of a health service. The roadmap should ensure that **national health identifiers** are used across all systems involved in the delivery of services for older persons (along with other cohorts and populations). Again, this requirement is common across all cohorts and populations, including older persons.

In common with all other cohorts and populations receiving primary or community care, older persons' information should be **stored and shared through the 'ICT Spine' initially**, and **then through national eHealth solutions**, such as the National Shared Care Record, as they are developed.

An overall roadmap for the ICT enablement of older persons services should also be developed, outlining the realisation of that vision over the short, medium and long term. Again, this should take account of the dependencies on the HSE 'ICT Spine', especially on the following Community ICT solutions:

- The Integrated Community Case Management System
- The Residential Care Management System
- The Home Care Management System
- The InterRAI Assessment System (replacing the Single Assessment Tool).

It should also identify all dependencies on national eHealth priorities, including the national shared care record, and align to their delivery schedules, and on any other core enablers.

The overall roadmap should ensure that an **audit of all existing hardware, electronic systems and datasets** is undertaken. The roadmap should also align with the criteria, guidelines, and procedures for the HSE programme of technology refreshment for ICT hardware and software. This will ensure that systems and solutions are replaced and upgraded appropriately. This requirement is not specific to older persons as a population but common to all cohorts and populations owing to the use of common infrastructure and systems.

The overall roadmap should ensure that an **audit of all existing hardware, electronic systems and datasets** is undertaken in the short to medium term. This recommendation is not specific to older persons as a population, but will also benefit all other cohorts and populations whose care is managed using the same

systems.
The roadmap should also align with the criteria, guidelines, and procedures for the HSE programme of **technology refreshment for ICT hardware and software**. This will ensure that systems and solutions are replaced and upgraded appropriately. Again, this recommendation is not specific to older persons as a population, but will also benefit all other cohorts and populations whose care is managed using the same systems.
National health identifiers, such as the Individual Health Identifier, are used conjunction with other identifying criteria to enable a high degree of safe identification of those presenting for use of a health service. The roadmap should ensure that every system to be used for the delivery of older persons services **uses national health identifiers**. This requirement is not specific to older persons as a population, but will also benefit all other cohorts and populations whose care is managed using the same systems.

6.3 Standardised sharing of information

A key function of the State in a middle-out model is facilitating of the collaborative development, with all stakeholders, of a comprehensive framework of national standards and, as appropriate, supporting stakeholders to adopt these standards. This support can include national initiatives that incentivise (and guide) the 'uplift' of infrastructure, systems, and skills. Together with other measures at national level, this approach provide a basis for interoperability and thus for full engagement of the sector.

While some national standards have been defined, many more are needed for the engagement of all cohorts and populations, including older persons. Therefore, a **comprehensive suite of national standards for interoperability** across older persons services should be developed, in collaboration with core user groups and led by the appropriate national standards function. This includes:

- mapping the data used in systems across health and social care settings
- definition of standardised minimum data sets required
- use of standardised assessments, including InterRAI
- use of approved national standard terminologies, including SNOMED CT
- development of key performance indicators, as national standards, for appropriate reporting.

This should be information by findings of the audit of datasets. This requirement is not specific to older persons as a population but common to all cohorts and populations owing to the use of common infrastructure and systems.

Healthcare professionals have identified the following transitions as among the most challenging and important:

- admission to acute care from nursing home
- admission to acute care from older person's home
- discharge from acute care to nursing home
- discharge from acute care to older person's home
- transfer between acute and non-acute settings.

Given the variations in ICT enablement across those settings, ICT enablement is still a significant undertaking and should be driven by the needs of the end-user groups involved, with the patient at the centre of care.

Therefore, an analysis of the actual information needs of healthcare practitioners should be undertaken, with the outcomes used to inform development of national standards for information requirements for core user groups involved in these transitions of care.

As noted earlier, technical requirements were found to be common across older persons and other cohorts and populations. However, the clinical and care information required by key user groups can differ somewhat for older persons, and for other cohorts and populations. The provision of a single, core record for each individual or patient must also remain a priority.

For example, in line with requirements identified by GPIT for nursing homes, a single record should be maintained for each resident and the use of hybrid paper and electronic records should be avoided. Clinical coding standards SNOMED CT (national standard) should be supported.

Findings from the full mapping of existing datasets should inform this analysis. Consideration should also be given to how the necessary information could be made available to any healthcare profession or facility responsible for continuity of care of that patient.

The goal is to create a framework of national standards (particularly HL7 FHIR and APIs) to ensure (near) real-time sourcing of data and thereby support the effective sharing of health information, underpinned by national eHealth solutions such as national shared care record and national health identifiers.

A **comprehensive suite of national standards for interoperability** should be developed, in collaboration with core user groups and led by the appropriate national Standards function. This includes:

- mapping the data used in systems across health and social care settings.
- definition of standardised minimum data sets required.
- use of standardised assessments, including InterRAI
- use of approved national standard terminologies, including SNOMED CT
- development of key performance indicators, as national standards, for appropriate reporting.

The goal is to create a framework of national standards (particularly HL7 FHIR and APIs) to ensure (near) real-time sourcing of data and thereby support the effective sharing of health information, underpinned by national eHealth solutions such as national shared care record and national health identifiers.

Healthcare professionals have identified the following transitions as among the most challenging and important:

- admission to acute care from nursing home
- admission to acute care from older person's home
- discharge from acute care to nursing home
- discharge from acute care to older person's home
- transfer between or within settings.

HIQA should undertake an analysis of the actual information needs of healthcare practitioners, in collaboration with the HSE and other stakeholders, to inform development of national standards for information requirements for core user groups involved in these transitions of care. Work undertaken to date by the HSE on requirements for these core user groups should also inform the national standards.

Sharing of information between GP practice management systems, nursing homes, and acute hospitals is a high priority. This may require the definition of national standards for the point-to-point transfer of information above. However, consideration should also be given to **how the necessary information could be made available to any healthcare profession or facility responsible** for continuity of care of that patient. Findings from the full mapping of existing datasets

should inform this analysis.

Over the longer term, a formal review assessing compliance against the interoperability standards developed should be undertaken. Again, this requirement is not specific to older persons as a population, but common to all cohorts and populations.

A **formal review** assessing compliance against the interoperability standards outlined in Recommendations 11 and 12 should be undertaken.

6.4 User engagement

As far as possible, an appropriate governance structure should ensure that core user groups, in both public and private sectors, are engaged during the planning, design and implementation of systems used for these transitions of care, as well as on an ongoing basis post implementation. Again, this requirement is not specific to older persons as a population, but common to all cohorts and populations owing to the use of common infrastructure and systems.

An appropriate governance structure should also ensure that comprehensive, self-paced training is made available for all users of all systems and ideally, that users are supported in this training until they feel comfortable and confident using the applications and systems required in their role. Additionally, the broader upskilling of healthcare professionals should be considered. The HSE has already developed a digital health capability framework for nursing and midwifery, and the digital health foundation offering has been offered. The digital health framework this is now being extended to address the upskilling of other healthcare professionals nationally.

Significant funding and capital investment, specialist skillsets, and significant protected time for staff is needed to adopt new systems, as part of the implementation of the 'ICT Spine' and of national eHealth solutions. Current programmes of work in the HSE take account of the process transformation and people change required.

However, it is essential that the services are fully aware of the dedicated time and effort that is needed not only during the implementation phases, but also during planning, design, and other phases. There should also be agreement and a common understanding on the scale of this undertaking and what success looks like, for example, that full adoption means cessation of paper use, rather than use of electronic systems and paper documents in tandem.

The appropriate overall governance structure(s) should ensure that **core user groups, in both public and private sectors, are sufficiently engaged during the planning, design and implementation of systems** used for these transitions of care, as well as on an ongoing basis post implementation.
The appropriate overall governance structure(s) should ensure that mechanisms are in place to ensure that all systems conform to **basic principles of user-centred design**. It should also ensure that gateway reviews in the roadmap include **review of user satisfaction** with the systems implemented and with the overall implementation process.
The appropriate overall governance structure(s) should also ensure that **comprehensive, self-paced training is made available for all users of all systems** and ideally, that users are supported in this training until they feel comfortable and confident using the applications and systems required in their role.
The appropriate overall governance structure(s) should **consider national initiatives for the 'uplift' of digital skills** for healthcare professionals and all those providing care to older persons, and to other cohorts and populations. Best practice also emphasises the role of accredited continuing professional education, and of particular support for the professional development of clinician informatician sphere, again benefitting all cohorts and populations (including older persons) whose care is managed using the same systems.

6.5 All Recommendations

Recommendations	
Overall strategic objectives	
1.	**An overarching strategy** should be developed, at national level, for the full engagement of the public and private sector in the ICT enablement of health service delivery, in line with national policy and the Sláintecare vision. This strategy should describe how current undertakings, including the 'ICT Spine', align with longer term priorities under Sláintecare — that is, with the national eHealth solutions, including the National Shared Care Record, as those programmes evolve.

2.	**The appropriate overall governance structure(s)** should be identified, to develop this strategy and oversee its implementation, across the full public and private sector, aligned to the wider transformation of health service delivery and Sláintecare. This will support the ICT enablement of health service delivery at national level, for all cohorts and populations, including older persons.
3.	ICPOP seeks to provide a national service model for older persons, with appropriate ICT enablement, and stakeholders are currently determining the scope of a **formal evaluation of the ICPOP programme**. The findings of the formal evaluation should inform the overarching strategy for the ICT enablement of older persons services.
4.	**A full stakeholder mapping** should be undertaken, across the public and private sectors, and **an appropriate plan** for the engagement of stakeholders — particularly core end-user groups in the public and private sectors — should be developed. The governance body should be responsible for ensuring this plan is implemented, to ensure that ICT enablement meets the needs of stakeholders, particularly core end users.
5.	As part of the overall strategy, **a clear vision for the overall ICT enablement of older persons services** should also be developed, for the short, medium and long term. This vision should be developed in collaboration with all stakeholders and provide a common understanding (especially for core user groups) across all the settings outlined, and how it will align with their work practices, across the full sector, public and private.
6.	In common with all other cohorts and populations receiving primary or community care, older persons' information should be **stored and shared through the 'ICT Spine' initially**, and **then through national eHealth solutions**, such as the National Shared Care Record, as they are developed.
7.	**An overall roadmap** for the ICT enablement of older persons services should also be developed, outlining the realisation of that vision over the short, medium and long term. Again, this should take account of the dependencies on the HSE 'ICT Spine', especially on the following Community ICT solutions: ▪ The Integrated Community Case Management System ▪ The Residential Care Management System ▪ The Home Care Management System

	▪ The InterRAI Assessment System (replacing the Single Assessment Tool). It should also identify all dependencies on national eHealth priorities, including the national shared care record, and align to their delivery schedules, and on any other core enablers.
8.	The overall roadmap should ensure that an **audit of all existing hardware, electronic systems and datasets** is undertaken in the short to medium term. This recommendation is not specific to older persons as a population, but will also benefit all other cohorts and populations whose care is managed using the same systems.
9.	The roadmap should also align with the criteria, guidelines, and procedures for the HSE programme of **technology refreshment for ICT hardware and software**. This will ensure that systems and solutions are replaced and upgraded appropriately. Again, this recommendation is not specific to older persons as a population, but will also benefit all other cohorts and populations whose care is managed using the same systems.
10.	**National health identifiers**, such as the Individual Health Identifier, are used conjunction with other identifying criteria to enable a high degree of safe identification of those presenting for use of a health service. The roadmap should ensure that every system to be used for the delivery of older persons services **uses national health identifiers**. This requirement is not specific to older persons as a population, but will also benefit all other cohorts and populations whose care is managed using the same systems.
11.	A **comprehensive suite of national standards for interoperability** should be developed, in collaboration with core user groups and led by the appropriate national Standards function. This includes ▪ mapping the data used in systems across health and social care settings. ▪ definition of standardised minimum data sets required ▪ use of standardised assessments, including InterRAI ▪ use of approved national standard terminologies, including SNOMED CT ▪ development of key performance indicators, as national standards, for appropriate reporting. The goal is to create a framework of national standards (particularly HL7 FHIR and

	APIs) to ensure (near) real-time sourcing of data and thereby support the effective sharing of health information, underpinned by national eHealth solutions such as national shared care record and national health identifiers.
12.	**Healthcare professionals have identified the following transitions** as among the most challenging and important: ▪ admission to acute care from nursing home ▪ admission to acute care from older person's home ▪ discharge from acute care to nursing home ▪ discharge from acute care to older person's home ▪ transfer between or within settings. **HIQA should undertake an analysis of the actual information needs of healthcare practitioners**, in collaboration with the HSE and other stakeholders, to inform development of national standards for information requirements for core user groups involved in these transitions of care. Work undertaken to date by the HSE on requirements for these core user groups should also inform the national standards.
13.	Sharing of information between GP practice management systems, nursing homes, and acute hospitals is a high priority. This may require the definition of national standards for the point-to-point transfer of information above. However, consideration should also be given to **how the necessary information could be made available to any healthcare profession or facility responsible** for continuity of care of that patient. Findings from the full mapping of existing datasets should inform this analysis.
14.	In the longer term, **formal review** assessing compliance against the interoperability standards outlined in Recommendations 11 and 12 should be undertaken.
15.	The appropriate overall governance structure(s) should ensure that **core user groups, in both public and private sectors, are sufficiently engaged during the planning, design and implementation of systems** used for these transitions of care, as well as on an ongoing basis post implementation.
16.	The appropriate overall governance structure(s) should ensure that mechanisms

	are in place to ensure that all systems conform to **basic principles of user-centred design**. It should also ensure that gateway reviews in the roadmap include **review of user satisfaction** with the systems implemented and with the overall implementation process.
17.	The appropriate overall governance structure(s) should also ensure that **comprehensive, self-paced training is made available for all users of all systems** and ideally, that users are supported in this training until they feel comfortable and confident using the applications and systems required in their role.
18.	The appropriate overall governance structure(s) should **consider national initiatives for the 'uplift' of digital skills** for healthcare professionals and all those providing care to older persons, and to other cohorts and populations. Best practice also emphasises the role of accredited continuing professional education, and of particular support for the professional development of clinician informatician sphere, again benefitting all cohorts and populations (including older persons) whose care is managed using the same systems.

Chapter 7 Conclusion

In common with many other countries, Ireland is facing the challenge of ageing population. The high number of transitions, and the increasingly complex nature of the care, make the safe and effective exchange of information a particular challenge for older persons services. These challenges were intensified under COVID-19 and led the COVID-19 Nursing Homes Expert Panel to recommend the implementation of an integrated IT system for older persons services.

However, the capabilities that the Expert Panel described for information sharing, service management, and capacity planning across all settings actually require a mature national infrastructure for the sharing and management of health information across all cohorts and populations. The deficiencies in the current national health information system have already been outlined in more detail (HIQA 2021), as well as the measures needed to ensure a mature national health information system.

International best practice on the ICT enablement of older persons services also informs these Draft Recommendations. Many countries have invested significantly and have mature national systems in place. Therefore, they use existing national solutions such as electronic health records, social care records, national health identifiers and others. However, all countries reviewed still faced some remaining challenges in the effective electronic sharing of information.

To address these challenges, there was strong engagement with stakeholders, especially end-users, and the collaborative development of a shared vision was considered essential. Standardised sharing of information across the sector was also considered highly desirable, through a framework of national standards and the mapping of data across health and social care and moving from older standards to the use of HL7 FHIR. InterRAI Assessment was used in six of the eight countries, with recognition that appropriate metrics took time to develop and and this sufficient education, resourcing, and infrastructure was needed to derive benefit.

Therefore, these countries typically had strong national leadership on eHealth, typically through an independent strategic entity and informed by national eHealth strategy. Typically, a framework of national standards was also in place (or planned) National eHealth priorities were also supported by national initiatives, such as for the 'uplift' of residential care homes to support the ICT enablement or for the upskilling of healthcare professionals in the sector.

As noted earlier, national strategy in Ireland has focused on the move to the integrated model of care, envisaged in Sláintecare. EHealth is a crucial enabler of the integrated care model and the Sláintecare vision. Some elements of national infrastructure are in place, for example, the national health messaging broker,

Healthlink, and the National Integrated Medical Imaging System. Since the publication of the National eHealth Strategy (2013), a number of strategic national programmes have been undertaken to support the development of a national eHealth ecosystem. These include the National Shared Care Record and national health identifiers, among other key enablers.

Since 2021, the HSE has prioritised development of the basic functionality that will support the delivery of formal care services for populations in community (including older persons). This will consist of integrated community health systems, e-referral, triage, waiting list, and case management functionality. The 'ICT Spine' includes the Integrated Community Case Management System (ICCMS), and three specialist systems in the areas of home support, the residential care, and the InterRAI Assessment.

This ICT enablement is very welcome; however, it is crucial that silos do not develop and therefore, crucial that a clear, longer term strategy is developed. This strategy should describe how these current undertakings, including the 'ICT Spine', align with longer term priorities under Sláintecare — that is, with the national eHealth solutions, including the National Shared Care Record, as those programmes evolve. This long term direction is needed not only for the national eHealth solutions outlined but also to provide context for informed decision-making on the 'ICT Spine' and other related projects. It is also relevant for all cohorts and populations, including older persons.

The Draft Recommendations outline a number of other measures that will ensure the effective ICT enablement of services for older persons and for other cohorts and populations. As part of the development process, HIQA is undertaking a six-week public consultation, to elicit a broad range of views. All feedback will be analysed and that analysis collated in the Stakeholder Engagement Report.

The Draft Recommendations will be amended appropriately and then the Final Recommendations will be drafted for approval by the HIQA Executive Management Team and the HIQA Board. Once approved, the Final Recommendations will be submitted to the Minister for Health. The recommendations, together with the Stakeholder Engagement Report, will also be published on the HIQA website.

Appendix A Membership of Advisory Group

The following organisations and programmes have nominated representatives to the Advisory Group.

- Age Friendly Ireland (AFI)
- All Ireland Gerontological Nursing Association (AIGNA)
- CORU
- Department of Health
    - Sláintecare Programme Office
    - National Patient Safety Office
    - E Health and Health Information systems
    - Older Persons Strategy
- Health Information and Quality Authority (HIQA) – Regulation Older Persons Services
- Health Service Executive
    - HSE Acute Operations
    - HSE Community ICT and Operations
    - HSE Digital Transformation Office
    - HSE Finance
    - HSE Integrated Care Programme for Older Persons
    - HSE National Clinical Programme for Older Persons
    - HSE National Health and Social Care Professions Office
    - HSE Office of Nursing and Midwifery Services
    - HSE Office of the Chief Information Officer
    - HSE National Shared Record
    - HSE Primary Care ICT and Operations
    - HSE Public Health Nursing
    - HSE Social Care Directorate
- Irish Association of Directors of Nursing and Midwifery (IADNAM)
- Irish College of General Practitioners (ICGP)
- ICGP General Practice Information Technology Group (GPIT)
- Irish Medical Organisation (IMO)
- Mental Health Commission (MHC)
- National Patient Forum
    - Sage Advocy
    - Age Action
- Nursing Homes Ireland (NHI)
- Royal College of Physicians of Ireland (RCPI)
- Royal College of Surgeons of Ireland (RCSI).

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