Single Assessment Tool (SAT)
Pilot Evaluation Report 2017

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1. Executive Summary

The HSE Services for Older People are implementing an electronic 'Single Assessment Tool' (SAT) which uses interRAI™ assessments enable improved outcomes for older persons. SAT will ensure that assessment, care planning and policy decision-making are effective, coordinated, provide maximum value for money, and meet international best practice standards. The key strategic objectives of SAT are:

- To meet the needs of older persons in the most appropriate setting
- To provide care that is properly coordinated to support quality and efficiency
- To maximize value to older persons within the available healthcare budget resources
- To provide demonstrable fairness of access to resources for health and social care, e.g. for Long Term Residential Care or Home Care supports - SAT will ultimately replace the current Common Summary Assessment Report (CSAR)
- To support current national policy on enabling older people to remain at home in independence for as long as possible

Following business case approval and ICT funding from the DPER in 2013, two procurement exercises were completed and vendors appointed to build the SAT IT system (OpenSky Data Systems Ltd) and eLearning component (AIS/Relias Learning Ltd). Additional funding from Atlantic Philanthropies supported the development and implementation of the National SAT Training and Development Programme for healthcare staff and further enabled work to commence on the development of an international Carers Needs Assessment with Ireland leading out on this.

In preparation for the national implementation of SAT, a pilot of the SAT system commenced in May 2016 in three sites: Beaumont Hospital, Tallaght Hospital and University Hospital Galway. This pilot involved the training of SAT Assessors who assessed patients seeking access to long term care or home care supports using the SAT system over a 6 month period; this was extended for a further 5 months. This report is an evaluation of the training and education programmes, implementation processes, and assessment data from the three pilot sites.

The pilot has demonstrated that the introduction of a standardised assessment and implementation of associated technologies has the potential for significant transformational change, and can bring opportunities and benefits for the older person, clinicians and service providers.

Benefits for the older Person:
- SAT puts the person at the centre of the SAT assessment process, thereby promoting:
  - independence through assessment of capabilities
  - participation in care
  - self-fulfilment
  - dignity
- SAT provides a holistic assessment of the person's health & social care needs to inform individualised care planning based on individual needs and preferences
- SAT generates information which highlights a person's potential for improvement or decline
- SAT supports outcome focused, effective care planning

Benefits for Clinicians and Service Providers:
- SAT data at individual and aggregated levels provides a range of assessment outputs which can be used:
  - to support clinical decision-making/ corporate decision-making
  - to facilitate individualised care planning and integrated care
  - for case-mix classification at management and systems level
  - for quality monitoring, benchmarking, and service improvement
  - to inform eligibility criteria for access to services
  - to support prioritisation of services access based on assessed need
- SAT screening algorithms can also be used to target priority groups or identify groups that are at relative risk of adverse outcomes
- SAT provides additional information on dementia

Benefits for Policy Making / Service Planning / Quality Assurance (Aggregated data)
- Enhances knowledge of client care populations
- Identification of service need/ service improvements
- Informs allocation of resources and prioritisation of services based on real-time assessed needs
- Can determine eligibility for services
- Prioritise service users who are most in need
- Provision of data for performance monitoring and quality assurance
- Allows managers to track and compare their organisations' responses to quality of care issues
- Better management of services / resources
- Demonstration of effective care / value for money

SAT Assessment Process to Inform Care Planning

Standardised Assessment - Reduced Variability
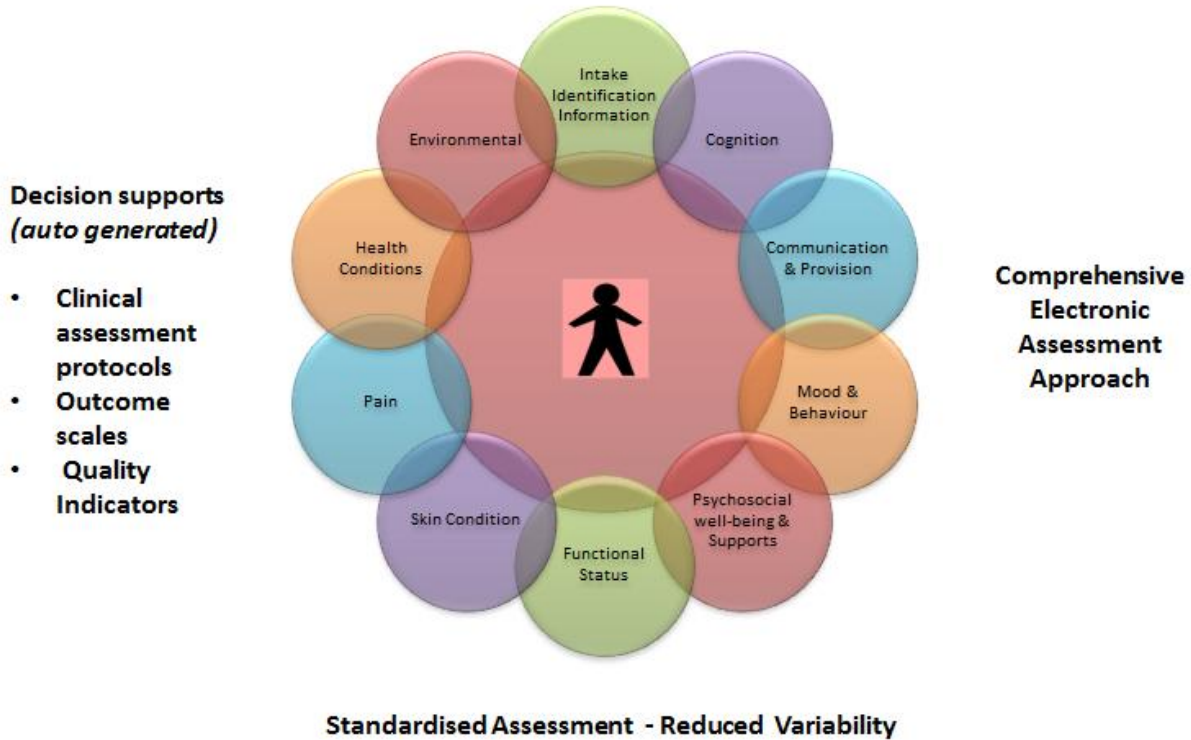
The implementation of SAT is identified as a priority action in the HSE's 2017 Service Plan and in the CHOs' operational plans. It is also being considered as a key component of the impending home care legislation.

This evaluation has identified a number of challenges and issues around implementation processes, training and education, and ICT in all three sites. The resolution of these issues – in particular ICT hardware and software issues – is of critical importance at both national and regional levels to facilitate SAT implementation. The ICT aspects of the project turned out to be more challenging than expected. The analysis of the pilot data and processes around implementation, training and ICT has identified a number of recommendations which are detailed later in this report.

In summary:
- National guidelines and supporting legislation for Nursing Home Support and Home Care may need to reflect SAT implementation. Guidelines should incorporate SAT assessment outputs to inform service urgency, wait lists/ prioritisation, appropriate placement, and levels of care
- Comprehensive SAT training programmes have been developed. It is important that the appropriate training is delivered to appropriate staff and that protected time for training and achieving competency is given to clinicians.
- A number of ICT hardware and software issues were identified during the pilot. Hardware issue are in the process of being resolved by ICT and the deployment and support of new tablet devices is being progressed by ICT which will facilitate implementation across the CHOs
- Regional and local management support is also critical and each CHO will need to plan, drive and support the implementation of SAT across their CHO

The implementation of SAT will introduce care needs assessment standardisation, and facilitate equity and transparency for older people and their carers, clinicians and policy makers. It brings with it transformative challenges which involve greater service integration. Leadership is required at a national, regional and local level to support this as ultimately the full benefits of the system are long term in nature. The SAT Pilot has provided a valuable source of learning which will be used to improve the SAT system and inform the implementation of SAT nationally across all 9 CHOs for the benefit of both service users and providers.

2. SAT Pilot – Introduction

The Single Assessment Tool is a comprehensive IT based standardised assessment system used to assess the health and social care needs of people (primarily those over the age of 65 years) who may be looking for support under one the following two schemes:

- Nursing Home Support Scheme (NHSS) – also known as A Fair Deal
- Home Care Package (HCP) Scheme

The SAT uses the interRAI assessment system. interRAI is a not-for-profit organisation consisting of a collaborative network of clinicians and researchers in over 35 countries, including Canada, USA, Australia, Belgium, Spain, France, Switzerland, Germany and New Zealand. For more information see www.interrai.org

The interRAI Home Care assessments, which are currently being implemented in Ireland, are designed for use with adults in the home, in acute care, and in other community-based settings. These assessments are specifically developed for use with frail older people or persons with disabilities who are seeking or receiving formal health care and supportive services to identify their health and social care needs using a standardised assessment.

The SAT will replace the current Common Summary Assessment Report (CSAR) paper based assessment being used for access to these schemes. The use of the SAT assessment will ensure that people receive comprehensive standardised assessments when accessing or being reviewed for support, regardless of where they live or who is doing the assessment. Information will be recorded electronically and will be securely stored which allows ease of access to information and reduces duplication of assessments.

These details will ensure that the relevant healthcare professionals have access to all the necessary information to put a plan in place with the older person and in consultation with their family representative, so that they can enjoy optimum physical and mental health wellbeing to participate in economic, social, cultural, community and family life for as long as possible.

Single Assessment Tool Information System (SATIS)

The SAT Assessment System has been designed to be a user-friendly, reliable, person-centred assessment system that informs and guides comprehensive care and service planning. The interRAI assessment operates on a Minimum Data Set principle whilst still being a comprehensive geriatric assessment. It is a safe and secure system and healthcare staff must be set up on the system with an individual identifier to enable access. SATIS access is governed by HSE ICT polices and underpinned by *the Irish Data Protection Acts 1988 & 2003* to ensure the security and confidentiality of all personal information it processes on behalf of service users and staff.

There are 20 different sections in an assessment all of which must be completed. Each section has a number of questions -each question has a drop down menu of "codes" – one of which must be selected. The use of drop down fields is to minimise writing (although each question allows notes to be written if necessary).

Once all sections are completed the system then collects codes from each question and streams the codes into inbuilt algorithms to generate assessment outputs. These outputs include validated scales and indices to support and facilitate clinical decision making, onward referrals and standards of care based on best practice guidelines. The scales and indices produced assist in the identification of risk, frailty and prioritisation. This helps support equitable and needs-based service provision targeted to those most in need. A summary report displaying all these outputs is generated by the system which can be emailed as a PDF report or printed for onward referrals *(See Client Summary Report in Appendix 2).*

About interRAI

interRAI is a collaborative network of researchers in over thirty countries committed to improving care for persons who are disabled or medically complex. interRAI aim to promote evidence-informed clinical practice and policy decision making through the collection and interpretation of high-quality data about the characteristics and outcomes of persons served across a variety of health and social services settings.

As an organisation, interRAI maintains high standards for the quality of measures used in its instrument systems. Each version of a system represents the results of rigorous research and testing to establish the reliability and validity of items, outcome measures, assessment protocols, case-mix algorithms, and quality indicators.

For more information see www.interrai.org

Benefits of the comprehensive SAT assessment:
Benefits for the Older Person:

- SAT puts the person at the centre of the SAT assessment process, thereby promoting: independence through assessment of capabilities, participation in care, self-fulfilment and dignity
- SAT provides a holistic assessment of the person's health & social care needs to inform individualised care planning based on their needs and preferences
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- SAT supports outcome focused, effective care planning

Benefits for Clinicians and Service Providers:

- SAT data at individual and aggregated levels provides a range of assessment outputs which can be used:
  - to support clinical decision-making/ corporate decision-making
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Benefits for Policy Making / Service Planning / Quality Assurance

- Enhances knowledge of client care populations
- Identification of service need/ service improvements
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- Can determine eligibility for services
- Prioritise service users who are most in need

3. SAT Pilot - Data Evaluation

SAT Pilot Process

In May 2016 three acute hospitals commenced a trial implementation of SAT – Beaumont Hospital, Tallaght Hospital and University Hospital Galway. Multidisciplinary staff in these hospitals were nominated to become SAT assessors and were equipped with, and trained to use, the standard HSE tablet device. They also completed the SAT training programme which consisted of four days classroom training with practice assessments to be completed leading to a mandatory competency evaluation. Further detail on the SAT Training Programme is provided in chapter 5 of this report.

SAT assessments were completed by the assessors with patients in various locations within the hospitals using tablet devices with assessments stored on virtual servers in a secured environment. The complete assessment, assessment outputs and summary client report were then available to staff involved in the direct care of the patient. These assessments were considered by members of the Local Placement Forum (LPF) who make a determination on entry into long term care based on the person's wishes and assessed need. They were also considered by home care package managers in the determination of home care supports to be provided to the person.

Staff in the community areas surrounding these hospitals – Dublin North, Galway, Dublin South West are now also commencing SAT implementation. Continuity and integration of care between acute and community sectors is being facilitated and promoted through the implementation of SAT.

This report provides analysis of the data which was captured during this pilot, together with feedback received from the three pilot sites. The findings of this pilot are being used to inform the implementation of SAT which will be rolled out nationally on a phased basis throughout 2017.

The pilot data analysis contained in this report primarily relates to assessments and assessment processes for patients applying for the Nursing Home Support Scheme (NHSS). However, a smaller number of Home Care Package (HCP) applicants were also included in the pilot. Separate analysis was undertaken in relation to these two schemes.

> **RECOMMENDATION 1**: Services for Older People should consider issuing national guidelines to standardise the use of SAT information for both home care and long term care.

Data Analysis—Demographics and reason for assessment

From commencement of the SAT Pilot in May 2016 to pilot conclusion on 28th April 2017, a total of **596 patients** were assessed using SAT in the three pilot sites. An analysis of the data captured during this pilot is provided below and in the following pages.
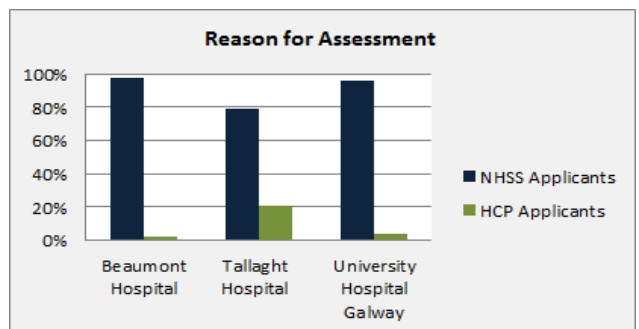
Patient Age:
Patient age ranged from 37 to 101 years with a national average age of 82 years. **54%** were female and **46%** male. The data per pilot site is outlined below:
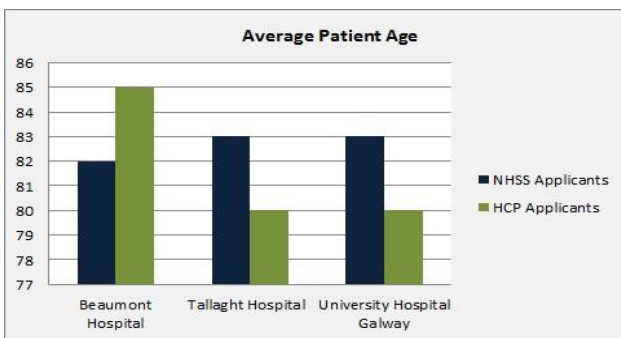
Reason for Assessment
90% of patients were assessed for entry to the Nursing Home Support Scheme (NHSS) with **10%** assessed for Home Care Package (HCP) supports. The data per pilot site is outlined below:

Local Placement Forum Outcome
Information on LPF Outcome was provided for **91%** of NHSS applicants as outlined in table below:

Pilot Site	Approved for LTC	Decision Deferred	Not Approved for LTC	Patient discharged home	RIP
Beaumont	95%	3%	0%	0%	2%
Tallaght	94%	1%	0%	1%	4%
UHG	74%	3%	18%	3%	3%
National	86%	2%	7%	2%	3%

HCP Outcome
Information on HCP outcome was provided for **54%** of HCP applicants as outlined in table below:

Pilot Site	Approved	Decision Deferred	Not Approved	RIP
Beaumont	0%	0%	0%	0%
Tallaght	80%	16%	0%	4%
UHG	86%	0%	14%	0%
National	81%	13%	3%	3%

# 3. SAT Pilot - Data Evaluation Patient Supports

NHSS Applicants:

Patients' Supports Prior to Admission to Long Term Care
Information on the home care supports provided to patients prior to admission was recorded for 534 of the 537 patients who were assessed using SAT. Of these:

- **59%** of patients were in receipt of home support services prior to admission. The following table provides details of the type of home supports provided:

Pilot Site	Home care supports provided prior to admission	Breakdown of the number of patients in receipt of supports by type of Home Care provided		
		Home Help	HCP	Home Help & HCP
Beaumont	57%	13%	69%	18%
Tallaght	59%	57%	31%	12%
UHG	62%	62%	22%	16%
National	**59%**	**46%**	**38%**	**16%**

- **41%** of patients were not in receipt of home support services prior to admission *(breakdown per pilot site below)*:
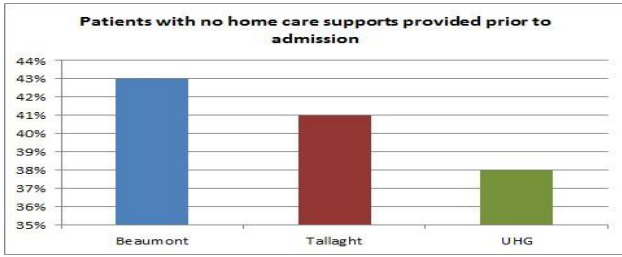
Family Carer Support
- **87%** of patients had family carer support *(breakdown per pilot site below)*:
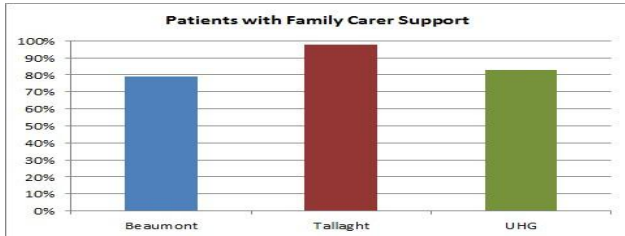
Length of Acute Hospital Stay
- An *Actual Discharge Date* was recorded for 89% of patients. The length of stay for these patients ranged from **3 to 733 days** with an average of **69 days.** *(breakdown per pilot site below)*.

Pilot Site	Minimum LOS	Maximum LOS	Average LOS
Beaumont Hospital	3	733	82
Tallaght Hospital	5	338	69
UHG	5	555	60

Note: Maximum LOS includes wards of court / complex cases

Primary Diagnosis / Reason for current stay:
The top five Primary Diagnosis/Reasons for current stay were:
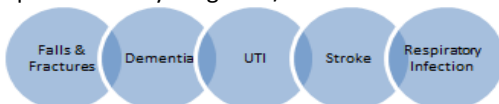
Note: Some patients had multiple primary co-morbidities.

HCP Applicants:

Patients' Supports Prior to receipt of Home Supports
The number of older people assessed using SAT for Home Care was significantly lower with just 59 in total. Site numbers were very low in some cases and are not statistically relevant. Of these:

- **36%** of patients were in receipt of home support services prior to receipt of home supports. The following table provides details of the type of home supports provided:

Pilot Sites	Home care supports provided prior to admission	Breakdown of the number of patients in receipt of supports by type of Home Care provided		
		Home Help	HCP	Home Help & HCP
Beaumont	67%	0%	50%	50%
Tallaght	34%	69%	31%	0%
UHG	33%	100%	0%	0%
National	**36%**	**67%**	**29%**	**4%**

- **64%** of patients were not in receipt of home support services prior to receipt of home supports *(breakdown per pilot site below)*:

Family Carer Support
- **93%** of patients had family carer support *(breakdown per pilot site below)*.
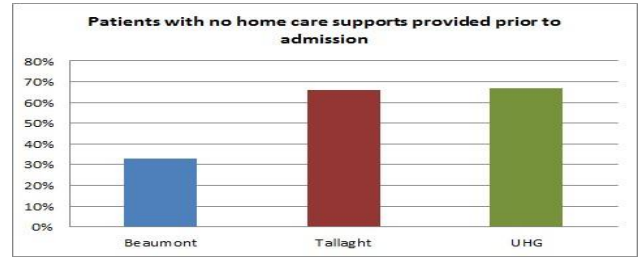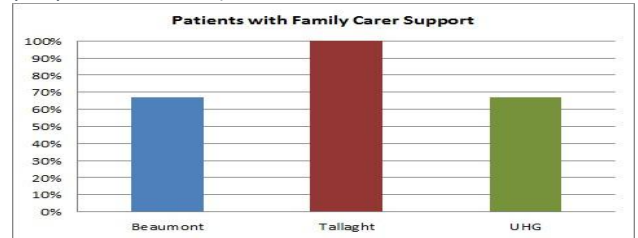

Length of Acute Hospital Stay
- An *Actual Discharge Date* was recorded for 81% of patients. The length of stay for these patients ranged from **6 to 87 days** with an average of **32 days** *(breakdown per pilot site below)*.

Pilot Site	Minimum LOS	Maximum LOS	Average LOS
Beaumont Hospital	n/a	n/a	n/a
Tallaght Hospital	6	87	33
UHG	8	47	27

Primary Diagnosis / Reason for current stay:
The top five Primary Diagnosis/Reasons for current stay were:
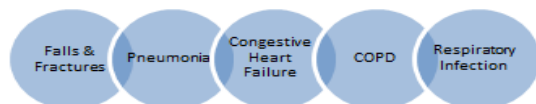
Note: Some patients had multiple primary co-morbidities.

3. SAT Pilot - Data Evaluation Assessment Outputs

Assessment Outputs

The interRAI assessment system generates relevant information (validated scales, assessment outputs, and indices) that can be used to support individualised care planning and at aggregated level provides a wealth of highly relevant information for decision makers in the planning and delivery of services. While the pilot sample is limited in its size (in particular the HCP sample) some trends can be seen for some of the key outcome scales which are explored in the section below.

* Note While SATIS generates automated outputs based on validated tools, this does not negate the need for professional judgement in clinical decision making

MAPLe – Method for Assigning Priority Levels

The MAPLe scale is a priority ranking system. It differentiates clients into five priority levels, based on their risk of adverse outcomes. Higher scores are based on the presence of Activities of Daily Living (ADL) impairment, cognitive impairment, wandering, and behaviour problems and risk of admission to long term residential care. The higher the priority score - the greater the need for services to prevent hospitalisation or admission into residential care.

It is expected that patients with lower scores (1, 2, 3) would generally receive information, advice and home care services; while those with scores ranging from 4-5 more likely to be seeking access to residential services.

This trend of higher MAPLe cohorts entering long term care is evidenced in the pilot data below with the majority of the applicants being 4 and 5. While 1, 2 and 3 scores are also present, the numbers are low. However in going forward, this trend should be monitored to ensure those with lower care needs do not inappropriately enter long term care. Equally, people in the 4 and 5 categories can also be managed in the community **if appropriate supports are available.**

The Pilot data below demonstrates that there are people with both low and high MAPLe seeking home care supports; however, the numbers are too low to be of significance.

NHSS Applicants:
- **85%** of NHSS applicants had a MAPLe score of 4 or 5
- Distribution of MAPLe scores illustrated below:
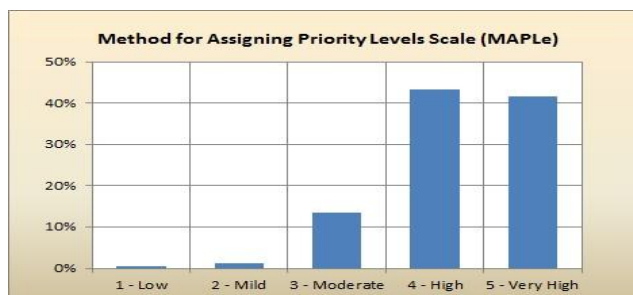
- MAPLe scores distribution in each pilot site below:

Methods for Assigning Priority Level Scale (MAPLe)				
Pilot Site	1 - Low	2 - Mild	3 - Moderate	4 - High	5 - Very High
Beaumont	1%	1%	9%	56%	33%
Tallaght	0%	1%	9%	32%	59%
UHG	0%	1%	21%	43%	34%

HCP Applicants:
- **61%** of HCP applicants had a MAPLe score of 4 or 5
- Distribution of MAPLe scores illustrated below:
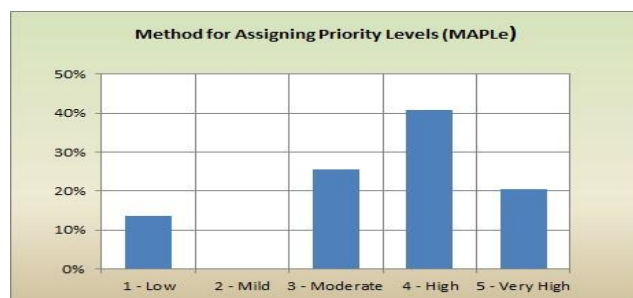
- MAPLe scores distribution in each pilot site below:

Methods for Assigning Priority Level Scale (MAPLe)				
Pilot Site	1 - Low	2 - Mild	3 - Moderate	4 - High	5 - Very High
Beaumont	67%	0%	33%	0%	0%
Tallaght	13%	0%	28%	38%	21%
UHG	0%	0%	11%	67%	22%

RECOMMENDATION 2(a): SAT outputs should be utilised to prioritise access to services and to guide the delivery of appropriate care in the most appropriate settings.

3. SAT Pilot - Data Evaluation (Assessment outputs contd.)

Activities of Daily Living Hierarchy (ADLH) Scale

The Activities of Daily Living Hierarchy (ADLH) Scale is a measure of ADL performance and categorises ADLs according to stages at which they can no longer be performed. Scores range from 0 (Independent) to 6 (Total Dependence). The scale is based on four ADL items showing the level of difficulty the person experiences in personal hygiene, locomotion, toilet use and eating.

In looking at pilot ADLH data, 67% of applicants for long term care needed extensive assistance with ADLs, in comparison with 24% of HCP applicants. The level of assistance required for ADLs provided by SAT is important information in both long term care and home care settings, in order to provide appropriate levels of targeted supports for older people.

NHSS Applicants:
- **67%** of NHSS applicants had an ADLH score of 3 to 6.
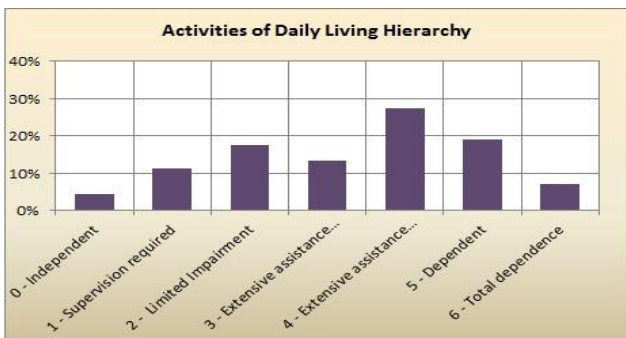- Distribution of ADLH scores illustrated below:

- Distribution of ADLH scores in each pilot site below:

Pilot Site	0 - Independent	1 - Supervision required	2 - Limited Impairment	3 - Extensive assistance required - i	4 - Extensive assistance required - ii	5 - Dependent	6 - Total dependence
Beaumont	4%	7%	20%	16%	23%	23%	8%
Tallaght	7%	19%	23%	16%	14%	14%	8%
UHG	2%	9%	11%	9%	42%	20%	6%

HCP Applicants:
- **24%** of HCP applicants had an ADLH score of 3 to 6.
- Distribution of ADLH scores illustrated below:

- Distribution of ADLH scores in each pilot site below

Pilot Site	0 - Independent	1 - Supervision required	2 - Limited Impairment	3 - Extensive assistance required - i	4 - Extensive assistance required - ii	5 - Dependent	6 - Total dependence
Beaumont	67%	0%	0%	0%	33%	0%	0%
Tallaght	38%	17%	23%	13%	6%	2%	0%
UHG	0%	44%	22%	0%	33%	0%	0%

RECOMMENDATION 2(b): SAT outputs should be utilised to inform appropriate levels of support required for both home care and long term care.

3. SAT Pilot - Data Evaluation (Assessment outputs contd.)

Changes in Health, End-Stage Disease and Signs and Symptoms (CHESS)

The CHESS Scale detects frailty and instability in health, and identifies individuals at risk of serious decline. It can serve as an outcome measurement where the objective is to minimise problems related to frailty (e.g. declines in function) in the elderly population. Scores range from 0 (No Health Instability) to 5 (Very High Health Instability). The CHESS Scale has been shown to be predictive of adverse outcomes such as mortality, use of acute hospital services, pain, receipt of specialised medical treatments, caregiver stress, and poor health outcomes. Clients with a CHESS score of 5 have about an 11 times increased risk of mortality compared to those with a score of 0.

In reviewing NHSS applicant pilot data, the majority of patients fell into 0 to 3 CHESS categories, with just over 10% falling into the 4-5 categories. This suggests that the majority of patients applying for LTC are relatively stable medically, as would be expected if they are being discharged from acute care.

All applicants for HCP support services fell into the 0 to 3 categories. However, no inferences can be drawn from this due to the small sample size. Furthermore, this trend should not be taken as an expected norm for HCP data as clients with complex needs are currently being managed, and can be managed, in the community with appropriate supports. However, one would expect the figures for CHESS categories of 4-5 to be higher for NHSS applicants. In terms of service provision, higher CHESS scores are an important consideration regarding the urgency of service need in preventing decline/acute hospital admissions and poor health outcomes for older people.

NHSS Applicants:
- **10%** of NHSS applicants had a CHESS score of 4 or 5
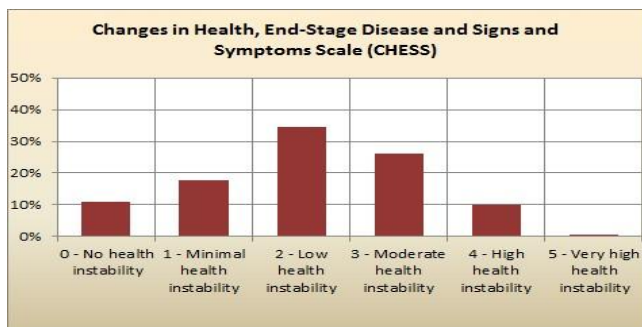- Distribution of CHESS scores illustrated below:

- Distribution of CHESS scores in each pilot site below:

Pilot Sites	0 - No health instability	1 - Minimal health instability	2 - Low health instability	3 - Moderate health instability	4 - High health instability	5 - Very high health instability
Beaumont	9%	15%	40%	24%	12%	1%
Tallaght	9%	17%	35%	28%	9%	1%
UHG	14%	21%	30%	26%	9%	0%

HCP Applicants:
- None of the HCP applicants had a CHESS score of 4 or 5
- Distribution of CHESS scores illustrated below:
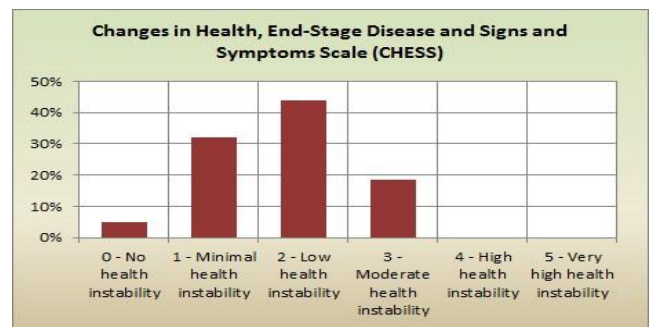
- Distribution of CHESS scores in each pilot site below:

Pilot Site	0 - No health instability	1 - Minimal health instability	2 - Low health instability	3 - Moderate health instability	4 - High health instability	5 - Very high health instability
Beaumont	0%	100%	0%	0%	0%	0%
Tallaght	4%	32%	45%	19%	0%	0%
UHG	11%	11%	56%	22%	0%	0%

RECOMMENDATION 2(c): SAT outputs should be utilised to identify older people at risk of decline/ acute hospital admissions and poor health outcomes.

3. SAT Pilot - Data Evaluation (Assessment outputs contd.)

Cognitive Performance Scale (CPS)

The CPS scale below outlines the percentage of patients who have levels of cognitive impairment. 91% of all NHSS applicants had some degree of cognitive impairment, with almost half (45%) falling into the range of moderate to very severely impaired. Dementia was also reported as one of the top 5 primary diagnoses attributed to reason for admission to acute and community services.

There is little doubt that the percentage of clients entering LTC with cognitive impairment has major planning and design implications across residential services. It also creates opportunities for home care service providers/communities in supporting patients with cognitive impairment in their own home. The CPS is an important consideration in determining risk and service provision.

NHSS Applicants:
- **48%** of NHSS applicants had a CPS score of 3 to 6.
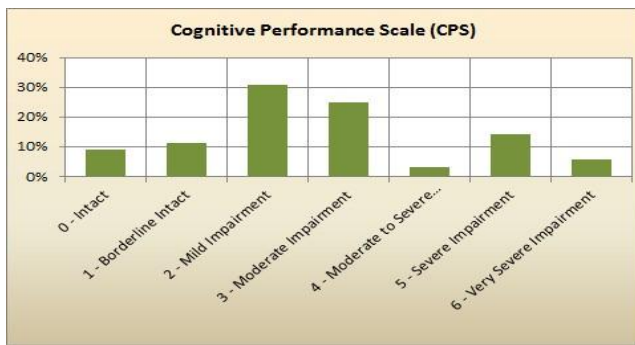- Distribution of CPS scores is illustrated below:

- Distribution of CPS scores in each pilot site below:

Pilot Site	0 - Intact	1 - Borderline Intact	2 - Mild Impairment	3 - Moderate Impairment	4 - Moderate to Severe Impairment	5 - Severe Impairment	6 - Very Severe Impairment
Beaumont	4%	7%	20%	16%	23%	23%	8%
Tallaght	4%	8%	30%	38%	3%	10%	7%
UHG	12%	13%	28%	20%	4%	18%	5%

HCP Applicants:
- **14%** of HCP applicants had a CPS score of 3 to 6.
- Distribution of CPS scores is illustrated below:

- Distribution of CPS scores in each pilot site below:

Pilot Site	0 - Intact	1 - Borderline Intact	2 - Mild Impairment	3 - Moderate Impairment	4 - Moderate to Severe Impairment	5 - Severe Impairment	6 - Very Severe Impairment
Beaumont	67%	33%	0%	0%	0%	0%	0%
Tallaght	30%	28%	28%	6%	2%	6%	0%
UHG	0%	22%	67%	11%	0%	0%	0%

> **RECOMMENDATION 2(d):** SAT outputs should be utilised to monitor levels of cognitive impairment and appropriate care provision

4. SAT Pilot - ICT

The Single Assessment Tool (SAT) Project involves the introduction of a comprehensive IT based care needs assessment that generates a wealth of data which will form the foundation of care planning and service planning for Services for Older People. SAT assessments are used to assess people at the point of care (in both hospital and community settings), generating real-time electronic reports that flag risks, inform care planning and inform service provision.

Following procurement, OpenSky was chosen as the successful software vendor. OpenSky provide the HSE with the software operating system and support (bespoke software platform for interRAI assessment system), and AIS provides the eLearning system and support.

The SAT system also utilises tablet and mobile technologies to support full implementation in acute and community settings which is coordinated and led by HSE ICT. During the SAT Pilot a number of issues emerged both nationally and regionally across all ICT categories. These are summarised below:
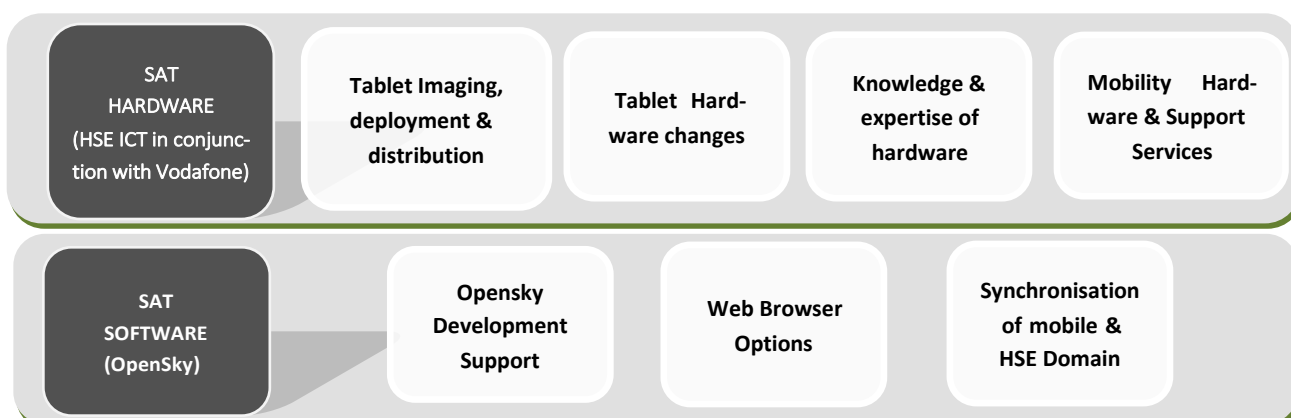
SAT HARDWARE (HSE ICT in conjunction with Vodafone)	Tablet Imaging, deployment & distribution	Tablet Hardware changes	Knowledge & expertise of hardware	Mobility Hardware & Support Services

SAT SOFTWARE (OpenSky)	Opensky Development Support	Web Browser Options	Synchronisation of mobile & HSE Domain

Connectivity between software and hardware frequently arose as an issue throughout the SAT process i.e. SAT UAT, SAT Training, SAT pilot implementation. A total of 196 support and service requests were raised with several vendors and ICT personnel during the Pilot and the current status of these tickets is outlined below:

vodafone	DELL	opensky YOUR VISION.REALISED.	eHealth Ireland	ais Assessment & Intelligence Systems is now part of RELIAS LEARNING
58 Tickets Raised 51 Closed 7 Open	11 Tickets Raised 9 Closed 2 Open	74 Tickets Raised 34 Closed 40 Open	45 Tickets Raised 42 Closed 3 Open	8 Tickets Raised 6 Closed 2 Open

Findings and Recommendations

ICT issues had a significant impact on the SAT pilot. It impacted greatly on assessor training programmes and continued right through to assessors completing assessments in hospitals and the community. The resolution of these ICT issues has been a challenge and some outstanding issues are still being concluded. The key learning has been that ICT implementation is complex, especially in the context of developing a bespoke solution working closely with the vendor and other third parties is of critical importance at both national and regional levels to facilitate SAT implementation. ICT software and hardware issues constituted a major risk to successful pilot implementation. Resolution of these issues falls into two main categories as outlined below:

RECOMMENDATION 3: Resolution of hardware (in particular tablet) issues - a dedicated SAT support service is required. Full access to emails and connectivity between hardware and software needs support

RECOMMENDATION 4: Resolution of software issues (Opensky) – software development / support in timely manner required.

5. SAT Pilot—Training & Development

Introduction

Since the commencement of the pilot, a comprehensive suite of SAT Education and Development Programmes were designed to support healthcare staff.

These programmes aimed to provide a multi-dimensional standardised national approach to the delivery of SAT education and training required for SAT Implementation.

Piloting provided an opportunity to:

- Test and refine the training programmes prior to national implementation
- Explore the impact of SAT's supporting infrastructure (SATIS, network environment, tablet devices) in clinical training
- Assess the effectiveness of planned educator and end user support strategies in creating a positive supportive learning environment prior to widespread national implementation

SAT Education and Development Programmes

The following SAT Education and Training Programmes and associated courseware were developed based on end user identified needs, and to address different interRAI methodologies / assessment forms used in different settings i.e. community / acute care settings.

SAT Education / Training Programmes Developed & Implemented to date:

1. SAT Educator / Clinical Lead- Education & Development Programme
2. Acute Care Assessor- Education & Development Programme
3. Community Care Assessor- Education & Development Programme
4. Decision-Maker Training Programme
5. Read Only MDT Training Programme
6. Clerical User Training Programme

See Appendix 1 for overview of SAT Training Programmes

The numbers trained in the different programmes across pilot sites are outlined in the tables below:

SAT Assessor Training Summary				
CHO	No. of Assessors who have achieved Competency	No. of Assessors who are in training	No. of Assessor "Leavers" (Attrition)	No. of People who requested full Assessor Training but will not be undertaking assessments	No. of SAT Assessors who have completed an assessment within the last 6 months
2	9	0	0	3	4
7	15	2	1	0	8
9	18	1	4	0	15
Total	42	3	5	3	27
Overall Total of attendees SAT Assessor Training = 53					

Decision Maker / Read Only / Clerical User & Information Sessions Summary				
CHO	No. who attended Decision Maker Training	No. who attended Read Only Training	No. who attended Clerical User Training	No. who attended Information Sessions
2	17	42	13	119
7	39	2	0	107
9	19	19	5	150
Total	75	63	18	376
Overall Total of attendees for all Training / Information Sessions = 585				

SAT Training in Pilot Sites

5. SAT Pilot—Training & Development (contd.)

Training of SAT Assessors (Competency Assurance)

To maintain competency in SATIS and interRAI coding standards, SAT National Competency Guidelines for SAT Assessors were developed. These guidelines have been reviewed based on international learning / best practice, and pilot findings.

In exploring the numbers of SAT Assessors who completed and achieved competency, and the number of those Assessors who completed a Live Assessment in the last 6 months, there is a mismatch in the figures:
- 42 SAT Assessors (MDT) achieved competency
- 27 of these undertook a Live Assessment in the last 6 months

The numbers of Assessors per CHO ranged from 9 to 18 (CHO 2 = 9; CHO 7 = 15; CHO 9 = 18), yet the total number of live assessments across CHOs was comparable.

This has implications for future implementation with regard to Assessors maintaining competency in the interRAI assessment system, and is likely to negatively impact on data integrity. The SAT National Competency Guidelines for SAT Assessors contains procedures that target this specific risk.

SAT Education Programmes Learner Evaluations

Learner evaluation forms were used to evaluate the SAT Education programmes. These forms were completed on day 3 (Assessment/ SATIS Training) and day 4 (interRAI Applications/ Care Planning Training) to identify trends and opportunities for improvement in the programme content and design. The responses for all training programmes were overwhelmingly positive regarding the education content and design of the classroom training days.

Across the 3 sites the biggest challenge for Assessors was in completing their Training Assessments.

At the start of the pilot the requirement was for Assessors to complete 5 training assessments within a one week time-period and to submit these to SAT Educators for quality review/ audit. This timeline proved unworkable for busy acute care clinicians due to workload pressures, and the majority of assessments that were submitted to educators appeared rushed and contained mistakes / coding errors.

Consequently the number of training assessments was reduced to 3 (minimum) over a 2 week timeframe, and a quality review (audited pass/ fail system) was introduced for assessment coding. Learners were asked to submit their first training assessment to educators before completing further training assessments, so that coding errors could be identified early and addressed. A notable improvement was observed in the quality of assessments being submitted to SAT Educators for review.

Competency Evaluation and eLearning (AIS)

The SAT has an eLearning module (AIS) that is available for all registered SATIS users. However only SAT Assessors are required to undertake electronic Mandatory Competency Evaluation (eMCE) on interRAI Coding Standards / Applications. Once training assessments are passed and competency is assured via eMCE, Assessor clinicians then have access rights to SATIS Live for patient/ client assessment.

ELearning competency analytics are routinely monitored and benchmarking made where possible to international findings. According to AIS the average number of attempts for learners to achieve a pass rate (80% and above) in their Competency Evaluations is 2 attempts or more.

The experience of Ireland in the pilot was above international performance levels – the average attempt rate started at 1.55 attempts and improved further to 1.47 attempts post refinement of the Education Programmes.

According to AIS the average number of attempts for learners to achieve competency is 2 attempts or above. The experience of Ireland in the pilot was above international performance levels – the average attempt rate started at 1.55 attempts and improved further to 1.47 attempts post refinement of the Education Programmes. This performance is above international average attempts and demonstrates the significant progress made to date

Percent of Learners Passed After Takes 1 & 2
Click the chart to view details
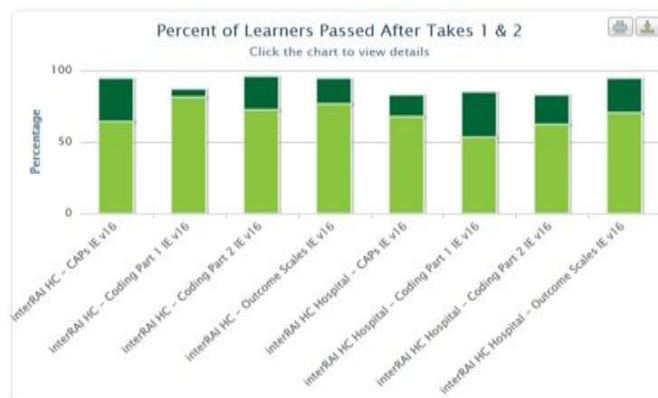
Average Number of Attempts to Pass: **1.47**

5. SAT Pilot—Training & Development (contd.)

Issues impacting on Training

Hardware (Tablets) and Network Environment
The Tablet devices/ Network environment had the greatest impact on training. Disruptions to training schedules were caused due to:

- Tablets frequently dropping their APNs, Proxy Server settings & SIM settings resulting in no access to SATIS Web training site, loss of learner data (if SATIS auto-save had not occurred), learners having to share a tablet's small screen, and learner and educator frustration
- Tablets not operating correctly – key boards/ cameras not working, tablets failing to turn on despite being charged, having to do battery pulls, etc. These all impacted on the training and learner experience
- Long delays were further experienced in accessing Vodafone support
- The lack of email on tablet devices also impacted on training as feedback on training assessments (Quality Reviews) is provided via email. In a c u t e / community care access to PCs is not always possible as a PC may be shared with several users
- Tablet devices (Dell) were provided to the SAT Project via existing HSE ICT contracts. The lack of a protective infection control sleeve for decontamination purposes on these devices was a cause for concern within acute hospitals. Advice was sought from the *Infection Prevention Society of Ireland* and guidelines followed to minimise risk. Consideration should be given to this infection control issue in future national HSE ICT contracts for Tablet Devices in clinical use

Software (SATIS)
SATIS had a number of software upgrades during piloting that impacted on training.

- A number of software bugs/ issues emerged during training i.e. the software didn't act as it should. These interrupted the flow of training and caused delays to the training programme, as SAT Educators tried to investigate and identify what had occurred when a learner reported an issue during training. Software issues identified during training were not always universal i.e. different bugs occurred with different users. This frequently made it difficult for SAT Educators to proceed with the planned flow of training
- Where universal software bugs emerged – interim workaround solutions were designed (where possible) while awaiting a fix from OpenSky and training was provided on these solutions
- Learners/ Educators expressed frustration in dealing with emergent bugs and in the long delays experienced in fixing issues
- The lack of an OpenSky/ HSE ICT centrally managed corporate programme for SAT Tablet software updates (e.g. SATIS; Microsoft, Adobe, etc.) caused some disruption to training as learner tablets had not got the most up-to-date versions in some cases which interfered with SATIS display, and updates had to be run prior to training
- The lack of SATIS reporting features further caused problems for SAT Educators in tracking Training/ Live assessment for quality reviews (auditing the quality of data)

Recommendations
A significant body of work has been created to address the SAT Education and Development Programmes. These programmes have demonstrated effective learning and are suitable for national implementation and will continue to be developed based on learner and educator feedback.

> **RECOMMENDATION 5:** SAT assessors require 'Protected Time' to complete training assessments and eLearning competencies (20 hours approx.)

> **RECOMMENDATION 6:** Assessor support pre, during and post training is critical to SAT Implementation.

> **RECOMMENDATION 7:** Line managers should carefully consider the clinicians they nominate for SAT Assessor Training, and only train those clinicians who will actually undertake assessments. Other SATIS training options should be delivered to clinicians directly involved in clients care and to those using SAT outputs. (Decision Maker training & Read Only training).

6. SAT Pilot - Feedback from Pilot Sites

Personnel in the three pilot sites were offered the opportunity to provide feedback on the following aspects of the SAT pilot:

1. What aspects of SAT implementation in your hospital / area worked well?
2. What aspects of SAT implementation in your hospital / area did not work well?
3. Any other comments / observations?

Feedback was received from the following disciplines:

- Public Health Nurses
- SAT Assessors
- Discharge Coordinator
- Social Workers
- Patient Flow/Care Manager
- Discharge Planning Nurse
- OPS Manager
- Nursing (Acute) / CRGN
- Occupational Therapist
- SAT Coordinators
- LPF Local Coordinator / Chair
- Social Work Team Leads
- Senior Medical Social Worker
- Patient Care Coordinator

The feedback received is categorised under four headings and form recommendations not previously identified elsewhere in this report:

1. SAT SYSTEM

The SAT system had both positive and negative aspects for users in the sites.

Strengths included: ease of access to information for a wide range of disciplines, ease of referral and ease of addition of specialist documentation. A sample of quotes is included below:

> *"Having access to the SAT system on the desktops around hospitals was very helpful."*

> *"Good IT skills evident from local SAT assessors."*

Weaknesses included tablet and connectivity issues which are detailed elsewhere in this report (Chapters 4 & 5). Also the length of the assessment system was mentioned and the possible unsuitability of the assessment in an acute setting. A sample of quotes:

> *"Length of time to complete SAT."*

> *"Assessment environment as issue, i.e. when answering questions about a patients' ability to make decisions, they may be perfectly capable of making clear/safe decisions in an acute hospital but not in their own home."*

2. SAT PROCESS

In general there was positive feedback on the SAT Process and the embedding of the process within the hospitals. A sample of quotes is included below.

The importance of communication in the MDT team approach emerged as a positive part of the SAT pilot and a strong working relationship between all of the various disciplines in linking with the SAT assessors in the hospitals also features.

> *"Good communication and constant liaising with hospital staff and in particular with the SAT Co-ordinator has ensured the easy transition from CSAR to SAT Assessments."*

> *"The SAT Co-ordinator, back up assessors and clinical lead staff have all been in their roles and this has aided the implementation process."*

> *"Having frequent and regular LIT Meetings."*

Weaknesses of the process that emerged in the feedback included length of time for assessments where assessors were carrying caseloads, and lack of definition around responsibility for submission of information to LPFs and ability of LPF to both access and use the information to its full extent. A sample of quotes is included below:

> *"LPF / HCP personnel are not confident in the use of / or interpretation of data presented."*

> *"Issues re. inappropriate referrals for HCP SAT Assessments."*

6. SAT Pilot - Feedback from Pilot sites (contd.)

3. SAT IN GENERAL

In general SAT was welcomed for its comprehensiveness and the information it produced. The client centredness of the assessment and the ease of sharing of information for staff members was also welcomed. Senior management support was recognised as an important feature and also the importance of a functioning local implementation team. A sample of quotes is included below:

> *"SAT is a very welcome addition in a co-ordinated approach to assessment of need and provision of services to older adults. In time it will be most beneficial to ensure that needs are met and transition from community to hospital and back will be less stressful for individuals and their families."*

> *"Good availability of the local implementation team to support staff throughout the implementation phase."*

Some general weaknesses included the potential impact of SAT to delay processes and discharges in particular for HCP clients. This concern was echoed in terms of its impact on assessments in the community in light of assessors and current workload of public health nursing. A sample of quotes is included below:

> *"Potential for SAT to delay processes - currently CSARS are delayed obtaining MDT input required (Hospital cases)."*

> *"Implementation in the community will be significantly more complex especially in terms of the HCP volumes and geographical spread."*

4. SAT TRAINING AND SUPPORT

Training and Support was generally acknowledged to be positive from staff, which is echoed elsewhere in the Training & Development section of this report.
Weaknesses included the breath of information to be learned within the timeframe allowed, and the lack of protected time for practice assessments was also identified. A sample of quotes is included below:

> *"Issues with protected time for trainee Assessors to complete assessments and / or evaluations."*

> *"Training timelines too tight in order to successfully complete evaluations."*

RECOMMENDATION 8: Ensure that a functioning Local Implementation Team is in place in all sites so that communication lines are open and team members are aware of roles, responsibilities and the integration of SAT in any process (for both NHSS and HCP access)

RECOMMENDATION 9: Ensure that all those involved in using SAT outputs in both LPFs and Home Care provision have access to and use the necessary information to assist the decision making process

RECOMMENDATION 10: Careful planning is required for the implementation of SAT in any area to conduct process mapping in terms of pre and post SAT process, identification of SAT assessors to be trained and strong management leadership to support this.

7. SAT Pilot - Recommendations & Conclusion

There are a number of recommendations from the pilot. These fall into four broad areas and are detailed below

Services for Older People
1. Services for Older People should consider issuing national guidelines to standardise the use of SAT information for both home care and long term care.

2. SAT outputs should be utilised to
    a. prioritise access to services and to guide the delivery of appropriate care in the most appropriate settings.
    b. inform appropriate levels of support required for both home care and long term care.
    c. identify older people at risk of decline/ acute hospital admissions and poor health outcomes.
    d. monitor levels of cognitive impairment and appropriate care provision

ICT
3. Resolution of hardware (in particular tablet) issues —a dedicated SAT support service is required. Full access to emails and connectivity between hardware and software needs support. This is currently being progressed by ICT with the introduction and ongoing support of Surface Pro tablets.
4. Resolution of software issues (Opensky) - software development / support in timely manner required.

Training
5. SAT assessors require 'Protected Time' to complete training assessments and eLearning competencies (following this pilot this has been identified as approx. 20 hours).
6. Assessor support pre, during and post training is critical to SAT Implementation.
7. Line managers should carefully consider the clinicians they nominate for SAT Assessor Training, and only train those clinicians who will actually undertake assessments. Other SATIS training options should be delivered to clinicians directly involved in clients care and to those using SAT outputs (Decision Maker training & Read Only training).

SAT Implementation
8. Ensure that a functioning Local Implementation Team is in place in all sites so that communication lines are open and team members are aware of roles, responsibilities and the integration of SAT in any process (for both NHSS and HCP access)
9. Ensure that all those involved in using SAT outputs in both LPFs and Home Care provision have access to and use the necessary information to assist the decision making process.
10. Careful planning is required for the implementation of SAT in any area to conduct process mapping in terms of pre and post SAT process, identification of SAT assessors to be trained and strong management leadership to support this.

Since the conclusion of the pilot, the implementation of SAT is being progressed across all 9 CHOs. Staff wishing to obtain more information about the implementation of SAT in their area should contact the office of their local Head of Social Care.

Conclusion

It is clear from this pilot evaluation report that there are a number of recommendations from the pilot. At a high level, these recommendations should be considered to guide implementation across the CHOs. These include the recommendation for national guidelines and review of legislation to ensure consistent use of SAT assessment outputs and also the need for strong national and CHO leadership, right through to careful regional and local planning. The selection, education and training of assessors and the provision of support and protected training time is important for a competent assessor workforce. The resolution of ICT issues, both hardware and software, is one of the key recommendations as it impacts throughout the process and emerged as the greatest risk to national implementation if not resolved.

Implementation of the recommendations contained in this pilot evaluation report is necessary for an efficient and effective roll out of SAT across the CHOs. In this way the hugely transformative potential benefits of SAT for older people, clinicians and service providers can be realised.

8. Appendices

Appendix 1 - SAT Training & Education Programmes

Programme	Course Duration	Modules	Competency Assurance
SAT Educator/ Clinical Leads **Train the Trainer Programme**	8-10 weeks	Facilitation/ Coaching Skills • Person-centred Interviewing Skills • Tablet/ SATIS Software Skills • interRAI CGA / Coding Standards / Applications & Care Planning • interRAI eLearning Programme (10 Modules) • Super user/ SATIS Admin Training • Dementia Awareness Training • Carer Awareness Training • Audit skills • Electronic Analytics Skills (AIS Dashboard) • On-going training updates (New software developments/ coding standards) • On-going SAT Educator support from SAT National Office/National Clinical Lead via telephone contact, email, webinar, or one to one learning as needed.	• Electronic Mandatory Competency Evaluations (eMCE)– interRAI Coding Standards (10 Modules) • Training Assessments – 10 (Pass/ Fail rate) • Peer Review Training evaluations • Training Evaluations (Learners) • Electronic analytics -Trainee performance • On-going Performance Reviews / eMCEs • Educator moderation –coding standards/data integrity – on-going
SAT Assessors Training Programme **Acute Care / Community Care (MDT)**	4-5 weeks	• Tablet/ SATIS Software • Person-centred Interviewing Skills • interRAI CGA / Coding Standards & Applications/ Care Planning • interRAI eLearning Programme • Dementia Awareness • Carer Awareness • On-going SAT Assessor support from SAT Educators/ Implementation Leads via telephone contact, email, or one to one learning as needed.	• Electronic Mandatory Competency Evaluations (eMCE)– interRAI Coding Standards (4 Modules per programme) on-going yearly thereafter • Training Assessments - 3 (min) with Pass / Fail rate • Audits of Live Assessments (3 mt monthly post competency assured)
Decision-Makers	1 Day	• SATIS Navigation/ Understanding interRAI Assessment & Applications • On-going support from SAT Educators /Implementation Leads	• Supervised practice session
Clerical Users	½ Day	• SATIS Navigation / Print features • On-going support from SAT Educators / Implementation Leads	• Supervised practice session
Read Only MDT	½ Day	• SATIS Navigation/ Print features/ Understanding interRAI Assessment & Applications • On-going support from SAT Educators/ Implementation Leads	• Supervised practice session

*Accreditation for SAT Assessor Courses has been awarded from NMBI (The Nursing and Midwifery Board of Ireland). In total, NMBI awarded 42 CEUs (Continual Education Units) for each of the Assessor Courses, as follows:

- 26 CEUs for the SAT Assessor Education and Development 4 Day Training Programme and
- 16 CEUs for the SAT Assessor eLearning Programme

CORU (The Health and Social Care Professionals Registration Board) members can also submit SAT Certificates as evidence of enhanced learning for similar CPD (Continual Professional Development) credits.

Appendix 2 - SAT Client Summary Report

Single Assessment Tool (SAT) Client Summary Report

Client Information

Client Name:	**SATIS ID:**
Gender:	**Medical Card No:**
Date of Birth:	**Primary Language:**
Address:	**Primary Contact:**
Living Arrangements at time of Referral:	**Primary Contact Tel:**

Assessment Information

Assessment Status:

Assessment Location:

Assessment ID:

Assessment Status:

Reason for Assessment:

Assessment Summary

Intake and Initial History	
Date of Admission to current service:	
Reason for admission to services:	
Allergies	
Client Safety Concerns	
Past Medical History	
Diagnosis affecting client's current condition monitored or treated	

Supports *(Formal supports received by client in past 7 days service or in 7 days prior to acute care admission)*	
Home care services (HCP and HH)	
Meals on Wheels services	
Community Nursing services	
Day Care (Hospital /Community based) services	
Privately funded carer services	
Respite Care in the last 12 months	

Family Carer *(Support provided to client by Family Carer in past 3 days service or in 3 days prior to acute care admission)*	
Family carer	
Hours of Family Carer help/Care and active monitoring during last 3 days	
Family carer unable to continue caring	
Family carer expresses feelings of distress	
Family carer feels overwhelmed	

Psychosocial well-being	
Social Relationships- participates in social activities of long-standing interest	
Length of Time alone During The Day in last 3 days or 3 days prior to admission	
Person or relative feels that the person would be better cared for living elsewhere (other than their permanent residence prior to admission)	

Appendix 2 - SAT Client Summary Report (contd.)

Mental Health and Behaviour Symptoms	
Cognitive Performance Scale (CPS) – *see Notes overleaf*	
Depression Rating Scale (DRS) – *see Notes overleaf*	
Presence of delusions / hallucinations	
Behaviours present or exhibited in the last 3 days	
Communication	
Able to express him/ herself	
Ability to understand others	
Hearing problems	
Vision problems	
Continence	
Bladder continence	
Bowel continence	
Skin Care	
Pressure Ulcer Risk Scale - *see Notes overleaf*	
Pressure ulcer	
Wounds/ Skin Conditions	
Presence of skin ulcer other than pressure ulcer	
Major skin problems	
Skin tears or cuts	
Other skin conditions or changes in skin condition	
Physical Functioning	
IADL (Capacity) Scale – *see Notes overleaf*	
IADL (Performance) Scale – *see Notes overleaf*	
Assistance required with IADLs Capacity	
Meal Preparation	
Ordinary Housework	
Medication Management	
Stair Use	
ADLH Scale – *see Notes overleaf*	
Assistance required with ADL Self-Performance	
Bathing	
Personal hygiene	
Dressing upper body	
Dressing lower body	
Walking	
Locomotion	

Appendix 2 - SAT Client Summary Report (contd.)

Toilet transfer	
Toilet use	
Bed mobility	
Eating	
Health Conditions and Medical Complexity	
CHESS Scale (medical complexity) – *see Notes overleaf*	
Shortness of breath	
Smokes tobacco daily	
Alcohol– Highest number of units in any "single sitting" in LAST 14 DAYS	
Dehydration	
Fluid intake less than 1 litre per day (less than five 200mls mugs per / day)	
Pain Scale – *see Notes overleaf*	
Number of Emergency Department Visits in last 3 months or 3 months prior to admission	
Number of Acute Hospital admissions in last 3 months or 3 months prior to admission	
Nutritional Status	
Body Mass Index (BMI) – *see Notes overleaf*	
Swallowing difficulties	
Weight loss of 5% or more in LAST 30 days, or 10% or more in LAST 180 days (6 months)	
Treatments & Procedures	
Treatments received or scheduled in last 3 days (or since last assessment if less than 3 days)	
Programmes received or scheduled in last 3 days (or since last assessment if less than 3 days)	
Client's / Resident's Preferences & Expectations for services	
Client Overall expectations for discharge from service established during assessment process	
Information source	
Risk Identification & Service Priority	
Number of Falls in last 90 days	
CAPs Triggered	
MAPLe Scale – *see Notes overleaf*	
RUGs – *see Notes overleaf*	

Appendix 2 - SAT Client Summary Report (contd.)

SAT Output Scales - Quick Interpretation Guide

Embedded within the assessment tools are a series of scales and indices that can be used to evaluate the clinical status of an older person or groups of older persons. Changes in the clinical status of older persons can also be evaluated and compared with that of other older persons when they are re-assessed over time.

Activities of Daily Living (ADL) Hierarchy Scale (0-6)

- A hierarchical measure of ADL performance, categorising four ADLs according to stages at which they can no longer be performed.
- Scores range from 0 to 6, with higher scores indicating a higher degree of dependence in ADLs:
  - 0 = Independent
  - 1 = Supervision
  - 2 = Limited impairment
  - 3 = Extensive assistance required I
  - 4 = Extensive assistance required II
  - 5 = Dependent
  - 6 = Total dependence

Body Mass Index (BMI)

- A simple measure of body weight relative to height used to identify people underweight, at a healthy weight, over weight or obese:
  - <18.5 kg/m^2 = Malnourished
  - 18.5-19.9 kg/m^2 = Under weight
  - 20–24.9 kg/m^2 = Healthy weight
  - 25–29.9 kg/m^2 = Over weight
  - >30 kg/m^2 = Obese

Changes in Health, End-Stage Disease and Symptoms and Signs (CHESS) Scale (0-5)

- A predictive measure for a persons health instability and frailty, used to identify person's at risk of serious decline, so that strategies can be targeted to reduce and/or minimise frailty (e.g. declines in function)
- Scores range from 0 to 5, with higher scores indicating a higher degree of health instability:
  - 0 = No health instability
  - 1 = Minimal health instability
  - 2 = Low health instability
  - 3 = Moderate health instability
  - 4 = High health instability
  - 5 = Very high health instability

Cognitive Performance Scale (CPS) (0-6)

- A hierarchical measure of a person's cognitive status
- Scores range from 0 to 6, with higher scores indicating more severe cognitive impairment
- The table below notes equivalence between CPS and the **Mini-Mental Status Examination (**MMSE)

CPS Score	Description	MMSE Range
0	Intact	25
1	Borderline Intact	22
2	Mild Impairment	19
3	Moderate Impairment	15
4	Moderate/Severe Impairment	7
5	Severe Impairment	5
6	Very Severe Impairment	1

Depression Rating Scale (DRS) (0-14)

- A hierarchical measure used to describe the mood of a person
- Scores range from 0 to 14, with scores of 3 or more indicate major/ minor depressive disorders

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Instrumental Activities of Daily Living (IADL) Capacity Scale (0-48)

- A proxy measure of a person's presumed ability to carry out IADLs as independently as possible (i.e. what the person **could do** if they were given the time and support to do so, regardless of whether they receive formal and/or family carer support or not).
- Scores range from 0 to 48, with higher scores indicating less capacity to independently carry out IADLs.

Instrumental Activities of Daily Living (IADL) Performance Scale (0-48)

- A summary measure of a person's actual IADL performance (i.e. what the person actually did versus what they could have done if they had the necessary supports).
- Scores range from 0 to 48, with higher scores indicating greater dependence on others.

Assigning Priority Levels (MAPLe) (1-5)

- A decision support tool used to inform choices relating to allocation of home care supports/services and prioritisation of persons needing community or facility-based services. Predictor of caregiver distress and LTC placement
- The MAPLe algorithm has 5 levels of risk for adverse outcomes. Higher scores indicate a higher priority client:
  - 1 = Low   3 = Moderate   5 = Very high
 - 2 = Mild   4 = High

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Pain Scale (0-4)

- A simple measure of a person's reported presence and intensity of pain
- Scores range from 0 to 4, with higher values indicating a greater frequency and intensity of pain:
  - 0 = No pain   3 = Daily severe pain
  - 1 = Less than daily pain   4 = Daily excruciating pain
  - 2 = Daily pain but not severe

Pressure Ulcer Risk Scale (PURS) (0-8)

- A predictive measure used to indicate the relative risk for developing a new pressure ulcer
- Scores range from 0 to 8, with higher values indicating a higher degree of risk for pressure ulcer
  - 0 = Very low risk   4 to 5 = High risk
  - 1 or 2 = Low risk   6 to 8 = Very high risk
  - 3 = Moderate risk

Resource Utilisation Groups (RUGs)

- The RUG-III Group is a type of case mix classification which groups individuals into one of seven main hierarchical levels based on numerous clinical characteristics, including ADL (and IADL impairment for those assessed using interRAI HC assessment); cognition, medical complexity, depression, and diagnosis:
  - Rehabilitation
  - Extensive Services
  - Special Care
  - Clinically Complex
  - Impaired Cognition
  - Behaviour Problems
  - Reduced Physical Functions
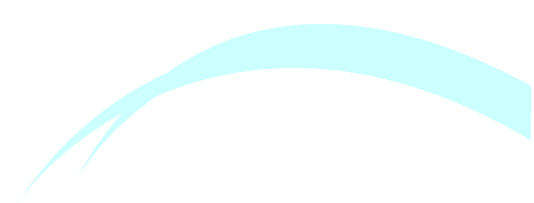
December 2017

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