Department of Health & Social Care

NHS

4 Patient

Written by Trusts, for Trusts

A Trust's guide to positive patient identification

V1.0

Aligned to Scan4Safety
Implementation Requirements v1.9

SCAN4SAFETY

Patient. Product. Place. Process.

1 Introduction

Scan4Safety is a pioneering initiative, led by the Department of Health and Social Care and developed by NHS trusts, that is improving patient safety, increasing clinical productivity and enabling supply chain efficiency across the NHS. Scan4Safety achieves these aims by driving standardisation across healthcare. Adoption of the initial scope of Scan4Safety by all acute trusts in England will, in itself, generate net efficiency benefits of over £1 billion in seven years.

Scan4Safety is about the adoption of common ways of working across healthcare, supported through two international standards, GS1 and PEPPOL. These enable all organisations involved in healthcare to use standard and proven nomenclature systems for the vital clinical and operational processes that support the delivery of care.

"Scan4Safety is a world first in healthcare – and a vital part of this government's drive to make the NHS the safest and most transparent healthcare system in the world."

Jeremy Hunt
Secretary of State for Health and Social Care

The opportunities for Scan4Safety are broad and varied, ultimately covering all areas of healthcare. To make adoption manageable an initial scope was agreed that limited activity to just acute trusts, to the three core enablers (Place, Product and Patient) and to three primary use cases (Inventory Management, Purchase to Pay and Product Recall). In future it is expected that the scope will be expanded to cover all healthcare organisations, other enablers and a far broader set of use cases.

To define the ways of working, validate the benefit to the NHS of adopting initial scope, and to learn the lessons once on behalf of NHS, the Department of Health and Social Care provided funding and support to six acute NHS 'Scan4Safety Demonstrator sites'.

- Derby Teaching Hospital NHS Foundation Trust;
- The Leeds Teaching Hospital NHS Trust;
- North Tees and Hartlepool NHS Foundation Trust;
- Plymouth Hospitals NHS Trust;
- Royal Cornwall NHS Trust; and,
- Salisbury NHS Foundation Trust.

The Department of Health and Social Care and the Demonstrator sites have worked closely with both medical suppliers and technology service providers to drive the adoption of GS1 and PEPPOL standards upstream within the healthcare supply chain.

Further information on Scan4Safety and its benefits can be found at: www.Scan4Safety.nhs.uk.

2 Background

The six acute NHS Scan4Safety Demonstrator sites worked through adoption of the three primary use cases (Inventory Management, Purchase to Pay and Product Recall) and supporting three core enablers (Place, Product and Patient). In doing so, the sites defined a highly structured approach of phases, milestones and achievements as outlined in the published "Guidance Scan4Safety implementation requirements".

The Demonstrator sites have worked together to capture and document their experiences and learnings in a set of 'How To' guides. These guides provide any NHS trust looking to follow the Scan4Safety approach robust, step-by-step manuals for each area of activity, ensuring a consistent approach is taken and maximum benefit is realised for the NHS.

The suite of Scan4Safety 'How To' guides will continue to grow and initially includes:

- Place;
- Product;
- Patient;
- Inventory Management;
- Point of Care (Surgical);
- Purchase-to-pay (NHS trusts);
- Purchase-to-pay (suppliers);
- Product Recall;
- Pharmacy;
- Supplier Adoption;
- Resource and Cost Planning;
- Benefits Planning and Reporting.

3 Acronym Decoder

Term	Definition
ISB 1077	**AIDC for Patient Identification**
	The Information Standards Board for Health and Social Care specification, published in November 2011, for how to encode patient information onto identification bands in machine readable format.
AIDC	**Automatic Identification and Data Capture**
	methods of automatically identifying objects, collecting data about them, and entering them directly into computer systems, without human involvement.
ED	**Emergency Department System**
	The main systems for managing and recording activity within the Emergency Department
ePMA	**Electronic Prescribing and Medicines Administration system**
	the utilisation of electronic systems to facilitate and enhance the communication of a prescription or medication order, aiding the choice, administration and supply of a medicine through information and decision support and providing a robust audit trail for the entire medicines process.
EPR	**Electronic Patient Record**
	the main repository for storing Patient Clinical Records
GLN	**Global Location Number**
	A globally unique code for the identification of a physical or functional location
GSRN	**Global Service Relation Number**
	A globally unique code for the identification of a care giver or care receiver
PAS	**Patient Administration System**
	the main administration system for recording patient details.
PMS	**Pharmacy Management System**
	The main system for managing product movements through a trust's Pharmacy and may hold patient identifier as it relates to the dispensing of medicines and associated labelling.

4 The need for Positive 'Patient' identification?

ISB 1077 required trusts to adopt the standard for use on patient identity bands, enabling accurate identification of the patient, with barcode scanning facilitating the upload of clinical data into the electronic patient record. The ISB1077 standard enables electronic records to be created that capture details of the patient, caregiver, care location, equipment and consumables utilised during an episode of care, facilitating clinical audit and product recall.

In spite of the stated timeline for adoption there are some healthcare providers that have not adopted the ISB 1077 with GS1 standards as required. This means that approaches to Positive Patient Identification can differ between various healthcare providers. There are still examples exist where identity bands are handwritten, have different identification markers and don't include machine readable codes (linear barcodes or 2D DataMatrix) for AIDC capabilities.

The risks within healthcare have always been clear. Misidentification of the patient at point of care can result in wrong; diagnosis; treatment; procedure; medication; or blood transfusion. All of which could lead to minor or major morbidity and even death.

Positive Patient Identification is an essential element of healthcare. Delivering safe care to the right patient relies upon the fundamental principal of carrying out Positive Patient Identification checks on patients. ISB 1077standards, when implemented, will promote good patient identification practice across the healthcare and reduce the risk of misidentification from occurring.

With the use of AIDC barcode scanning technologies, trusts can aim to reduce 'human error' factors when reading out or manually keying patient numbers. AIDC solutions will scan identity bands and automatically capture and confirm right patient electronically. Ensuring the right patient gets the right diagnostic test, treatment, procedure or medication, first time, every time.

Combined with the other Core Enablers, and using ISB 1077 & GS1 standards, scanning at each patient intervention throughout the patient's entire pathway, ensures trusts maintain a higher level of patient safety across the NHS with enhanced traceability. Demonstrator sites have already seen additional benefits relating to accurate level of Positive Patient Identification:

- Enhanced safety in Positive Patient Identification;
- Traceability of patient to locations, ensure the right care is delivered in the right patient in the right place at the right time;
- Reduction of clinical input errors and human factors from mistaken identification;
- Reduced adverse drug effects (ADEs) by positively identifying patients before preparation and administration of drugs;
- Accurate, automated and instantaneous data entry from electronic vital signs measurement machines (eObs);
- High accuracy and instant traceability Implantable devices and instrument used to patient detail level in an event of a safety notification or recall; and
- High detailed PLICS reporting showcase clinical variation, transparency for product standardisation, down to individual patient level.

5 The recommended approach for implementing each Phase of Patient ID

5.1 Outline Requirements

- Appoint a Trust Board Sponsor
- Appoint a senior clinical champion
- Appoint a Project Manager
- Undertake a current state assessment
- Initiate detailed engagement with existing adopted Trust(s)
- Establish Project team including a lead for Patient Identity
- Develop project plan to achieve 4 phases including resource requirements, costs and benefits
- Develop stakeholder map
- Develop communications and strategy plan

5.2 Baseline requirements

The baseline requirements for implementing ISB1077 Standard Patient Identifiable Bands are as follows:

- The organisational GS1 prefix for NHS Digital (5050898) must be used when allocating the Global Service Relationship Number (GSRN[1]) for patient identification (rather than the trust's organisational GS1 prefix).
- All in-patients have Patient identity bands given on admission compliant with the ISB 1077 standard and guidance.
- All trust systems that host patient information use the NHS Number, or equivalent unique identifier (Local Hospital Number), if the NHS is unknown (see Patient ID Policy), as a patient identification key.
- Trust should have systems and hardware in-place capable of printing compliant ISB 1077 identity bands.
- The band should contain the NHS Number, or equivalent unique identifier e.g. Local Hospital Number, if the NHS is unknown (see Patient ID Policy), as the unique patient identifier.
- Bands are scanned using Automatic Information Data Capture (AIDC) technologies (barcode scanners) by all care givers to positively identify the patient prior to undertaking a clinical intervention.
- Barcode scanners must be linked to the relevant systems (e.g. Electronic Patient Record (EPR)) to access the relevant data to allow positive identification of the patient to take place.
- Scanned information such as patient identity and time of data capture is stored electronically in relevant systems such as EPRs.

- A plan should be in place detailing how and when the trust will record the usage of traceable products and services to a patient using AIDC barcode scanning technologies.

5.3 Organisational Requirements

- A patient Identification Administration Owner and Information Asset Owner should be identified for the Trust. These roles will enable and facilitate the implementation of Patient ID within the Trust.
- Policies and processes should be put in place and updated to administer the positive patient identification processes across the trust.
- Detailed training plans should be completed for any staff required to print, produce and provide compliant ISB 1077 identity bands for positively identify a patient using AIDC technologies.
- A sustainable organisational structure in place to administer positive patient identification.
- Agree a roll out plan (Full or partial roll out).

5.4 Technical requirements

An assessment of the current system landscape should be made that identifies:

- Current methods in place for producing patient identification bands;
- Current trusts systems in pace (including PAS), that currently use patient/NHS number as a key;
- The types of AIDC technologies in use or available in the trust.

6 Implementation Steps

6.1 Phase 0

Complete an "As-Is - To-Be" review of policies, processes and relevant systems.

"This is a gap analysis activity to assess the current status of policies, processes and relevant systems to meet the requirements for patient identity management in phases 1-4.

Need to evidence that a Trust-wide review of policies, processes and relevant systems, related to patient identity management, has been undertaken and completed.

Following the review, consideration has been given to the policy, process and/or relevant system changes needed to meet phase 1-4 requirements for patient identity management."

Identify benefit opportunities of scanning compliant patient identify bands.

"Need to demonstrate that a review has been undertaken of policies, processes and relevant systems in use across the Trust where the scanning/machine reading of (ISB1077) compliant patient identity bands could enable operational efficiencies and/or patient safety improvements, including the association of products to patient.

The relevant systems are those related to this process and their capability to hold GS1 keys, e.g. Global Trade Item Numbers (GTINs), GLNs and/or Global Service Relationship Numbers (GSRNs).

The output would be a report that details the review and includes the initial operational and patient safety opportunities identified and shows how these opportunities will be incorporated into the Trusts Scan4Safety implementation project plan."

Step 1 Agree roles and responsibilities

a) Assign a project manager and clinical lead to oversee the adoption of Positive Patient ID and document:

- Where patient information is currently held. Patient information may be held in many internal systems e.g. PAS (Patient Administration System), EPR (Electronic Patient Record), EPMA (Electronic Prescribing and Medicines Administration System), ED (Emergency Department System)

b) Establish clear roles and responsibilities determining across the trust who should:

- have overall responsibility and management of Positive Patient ID
- amend patient information on patient bands to adhere to ISB 1077 standards
- be responsible for identifying when and what information should be shared with other systems
- be notified of any changes to the main patient administration system

- maintain policies and processes and be responsible for aligning any 'Patient' creation / changes with relevant internal systems

Step 2 Identify Key Stakeholders

- Medical Director / Nursing Director – to own the policy and advise on improvements and efficiencies
- Divisional Nurses – to ensure compliance with policy
- IT Director – systems advice and supplier management
- Caldicott Guardian (normally the Medical Director) and Information Governance Lead
- CIO – Chief Information Officer or equivalent
- CCIO – Chief Clinical Information Officer or equivalent
- Clinical Director
- Clinical Leads for Clinical Systems in the departments using Patient ID

Step 3 Agree the scope of activities and desired outcomes

A review is required to be undertaken of systems in use across the trust where the scanning/machine reading of patient identity bands could enable efficiencies and/or patient safety improvements including the association of products to patient, and that initial opportunities have been identified to develop as part of the project.

Identify the systems that are involved in producing identity bands and managing patient information. See table of example systems below.

System	Description	Reason
ED	Emergency Department System (Integrated with PAS)	The ED will be one of the main entries of patients into the trust, where many patient journeys commence. Within this system should be the ability to positively ID patients on arrival.
eObs	Electronic Patient Observations	The electronic observation system is the main system to record observations of patients. It is key that this system holds the NHS number and integrates with the PAS system.
ePMA	Electronic Prescribing and Medicines Administration	The ePMA system will record information relating to the prescribing and administration of medicines to individual patients within wards.
EPR	Electronic Patient Record	The main source of electronic patient records, all information should be held here and linked by Patient ID
PAS	Patient Administration System	The main administration system for patient appointments, outcomes, waiting lists etc. in the trust, this is the main system for admission, discharge and transfer recording which should integrate with the other key systems (please see diagram 1 below).
PMS	Pharmacy Management System	The PMS is the main system for managing product movements through a trust's Pharmacy and may hold patient identifier as it relates to the dispensing of medicines and associated labelling.
Theatre Management		In combination with the inventory management system; the theatre management should be integrated with the other key patient systems.

Table 1: *The table above shows the key types of systems that should be considered within the trust that should link with Patient ID and the reason why:*

Agree where "Patient" information is recorded

a) A local registry should be identified or created using a single database to store all patient information within an organisation (such as PAS). This database should feed each of the separate information systems used across the trust that require 'patient' information, ideally using Open API's[1] / dedicated interfaces.

[1] An open application programming interface (open API) is commonly defined as an API that uses a common or universal language or structure to promote more universal access.

b) Where existing references exist already in the trust for individual 'patients' these should be cross-referenced to the NHS Number by adding both references to the registry entry. Over time the NHS Number should become the primary identifier for all 'patients' and be used consistently across all trust systems.

Review of systems

- For each system identified that utilises or stores patient identify there needs to be an assessment of whether the system would need to be updated to align the patient identity with the patient NHS number.
- Once understood individual system suppliers should be contracted to update their system with the patients NHS number.

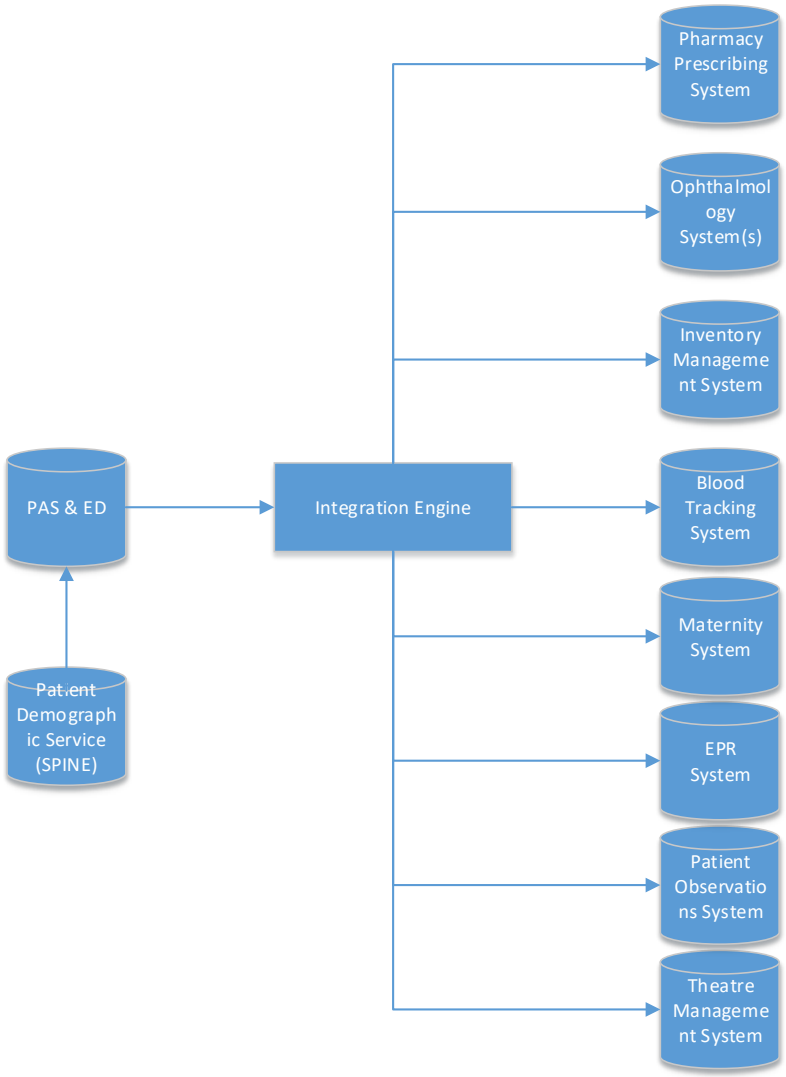

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Diagram 1: *Integration of PAS and the key patient information systems using HL7 messaging*

Step 4 Establish a Project Team

- Workstream Lead – A senior manager within the organisation to manage the required outcomes of the workstream.
- Project Manager – Suggest this is a project manager from IT who will be responsible for amending the systems and hardware (if required) to meet the required outcomes and assure compliance with standards.
- Clinical Lead – It is suggested that a nurse is appointed to provide advice on current issues where implementation will assist in improving patient safety and efficiency. This role is also responsible for updating policies and providing training plans.

Step 5 Review Current Identity Bands

Review current identity bands (adult, child and neo natal) and determine whether the trust is already compliant to ISB 1077 with regards the data captured in both human readable and machine reable form, that the 2D DataMatrix contains the relevant data elements and whether the 2D DataMatrix is GS1 compliant. The key elements of the patient identity bands are:

WRISTA and WRISTC (Adult and Child)

NHS Number
Surname
Forename
Date of Birth
Number Type
Patient ID Number
Organisation Code

WRISTN (Neo Natal)

NHS Number
Surname
Forename
Date of Birth
Number Type
Patient ID Number
Organisation Code
Number: (x of x)
Mother Surname
Mother date of birth
Time of birth

Step 6 Capture what system changes / updates are required

- Review and list all applications within the organisation that currently interacting with or making use of 2D DataMatrixes or linear barcodes for patient identification.
- Identify and list applications and/or processes that could be interacting with 2D DataMatrixes in the future in order to support positive patient identification.

6.2 Phase 1

Publish approved Trust policy(ies) regarding patient identification to include use of compliant identity bands.

"Need to evidence that the trust's policy for the identification of patients has been updated to include issuing and use of (ISB 1077) compliant, machine readable identity bands."

Publish approved process(es) for issuing of patient identity bands.

"Need to evidence that process(es) have been created or updated to cover the issuing of identity bands to relevant patient groups at the point of admission."

Step 7 Review all existing policies and procedures relating to management of patient identity and issuing / governance of patient identity bands

The trust's policy regarding the identification of patients will need to be updated to include issue of compliant, machine readable identity bands. In-line with the updated policy, relevant procedures need to be defined / updated to cover the issuing of identity bands to identified patient groups at the point of admission.

Manage expectations across your organisation

- establish the expectations that are required
- how long it will take to implement
- Create Key Performance Indicators (KPIs) and metrics to gauge progress of Patient ID adoption
- Establish the policy on patient identification – Trust wide policy

Policies and Standard Operating Procedures

- Patient ID Policy (see example from Royal Cornwall Hospitals NHS Trust in Appendix I - **)**
- Standard Operating Procedure for the Blood Transfusion System

KPIs and Metrics

At the start of the project, the project should expect the trust to be in the position of:

- 100% of Adult and Child patient ID bands applied to all inpatients on admission
- 100% of Neo natal patient ID bands to all patients on arrival
- 100% of Adult and Child patient ID bands printed and clear
- 100% of Neo Natal patient ID bands either written or printed

At the completion of the project, the following should have been achieved:

- 100% of Neo Natal, Adult and Child patient ID bands all printed and clear
- 100% of Neo Natal, Adult and Child patient ID bands to all inpatients on admission and those patients receiving treatment through Emergency Departments
- 100% of Neo Natal, Adult and Child patient ID bands all have ISB1077 2D Barcodes
- 100% of relevant trust areas are scanning relevant products and linking to individual patients

KPIs are to be determined by an audit of all inpatient areas. Please refer to Step 13 – Audit and Quality Assurance.

Step 8 Update the Policies and Procedures

Update the following policies and procedures:

- Patient ID Policy (see example from Royal Cornwall Hospitals NHS Trust in Appendix I -)
- Standard Operating Procedures

The Positive Patient Identification Policy and Procedures document should be edited by the Scan4Safety project team to include any new processes required to positively identify patients. This document should then be reviewed with the Director of Nursing.

Step 9 barcoded identity bands

Identifying where to place the 2D Barcode

a) Determine the start point of the Patient identity implementation and agree with stakeholders the most appropriate layout of the identity band and placement of the 2D DataMatrix

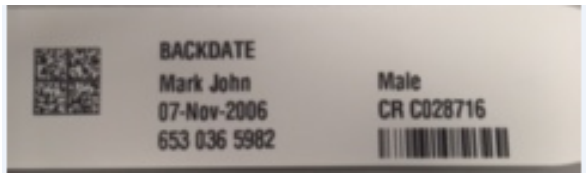


Image 1: Example WRISTA

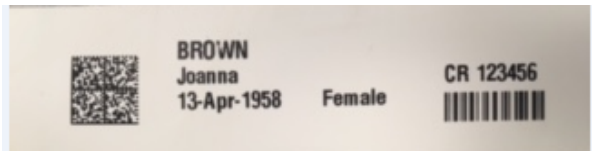


Image 2: Example WRISTC

Image 3: Example WRISTN

b) The GSRN should be coded in the 2D barcode; the GSRN should include patient identifiable information.
c) The GSRN allocation should be for all inpatients, there is scope for this to be extended to all outpatients and day case patients.

Working with Suppliers

a) The trust should work closely with the patient band suppliers to determine the format of the DataMatrix structure from the main primary patient system. The primary patient system supplier should work with the trust and ensure that the correct data is being fed into the DataMatrix, so that the output is ISB 1077 compliant.
b) The trust should work closely with the band printer supplier and the band suppliers to ensure that the data is printing correctly and displayed correctly when output from the primary patient system.

Step 10 Testing the Barcode Output

Full testing should be completed for the initial roll out of the 2D barcode into the Training / Test environment:

The resources required for testing should be:

- GS1
- Nursing Staff
- The IT section of the site
- The Scan4Safety team
- Any users of third party integrated software where the barcode is used

a) Printing Patient identity Bands
Testing that the printing of the Patient identity bands should be completed immediately following the roll out into test.
b) 2D DataMatrix Output Testing
Testing should be performed on the Patient identity bands to ensure that the correct output is scanned from the new Patient identity bands.

Step 11 Confirmation that the updated identity bands are compliant

a) GS1 Testing

The Patient identity bands should be tested by GS1 prior to roll out to ensure that they are compliant with ISB1077 standards. This testing should be performed by GS1. Sample prints of the Adult, Child and Neo Natal patient identity bands should ALL be sent.

b) Third party system supplier testing

Testing of the interaction between the new Patient identity bands and any 3rd party supplier software should be undertaken immediately after the roll out of the new Patient ID bands, coordinated and overseen by the Scan4Safety project team.

Step 12 Roll out and deployment plan

Example roll out plan

An example roll out project plan is shown in Appendix H -

Communication plan

Information to users prior to going Live with the new patient identification bands

Example communication methods could be via:

- Trust bulletin
- All users on email
- Trust electronic ticker tape to all users
- Team talks
- Trust Newsletter
- PC and White boards screen savers
- PC Login desktop
- Intranet news story
- Staff Facebook page
- eHealth Newsletter

Communication Schedule

- Electronic communications should be sent at least 5 working days prior to roll out, this includes the Trust Bulletin, all users email, Intranet news story, staff Facebook page and Trust Newsletter
- Information should be given in the team talk nearest to the go live
- Information should be included in the eHealth newsletter in the edition due to be published nearest to go live
- PC and White board screen savers and the PC Login Desktop information can be displayed in the 2 weeks leading up to go live
- On the day of go live, the Trust ticker tape should be used to communicate the changes

Step 13 Go Live

Rolling out the 2D barcode into the live environment should follow a similar format as the testing in the training / test environment: (To be delivered in conjunction with the roll out plan).

a) Determine the best day / time to roll out the Patient identity bands
   By interrogating the trust's data for elective admissions, determine when the best time of day and the best day to roll out the Patient identity bands without causing too much disruption to the day to day running of the wards.
b) Printing Patient identity bands
   Testing that the printing of the Patient identity bands is performing correctly; should be completed immediately following the roll out into live of the new Patient identity bands.
c) 2D DataMatrix Output Testing
   Testing from the Live output should be performed on the bands to ensure that the correct output is scanned from the new Patient identity bands.
d) GS1 Testing
   The Patient identity bands should be tested by GS1 as soon as they are rolled out to ensure that they are compliant with ISB1077 standards. This testing should be performed by GS1. Sample prints of the Adult, Child and Neo Natal patient identity bands should ALL be sent.
e) Third party system supplier testing
   Testing of the interaction between the new live bands and any 3rd party supplier software should be undertaken immediately after the roll out of the new bands by the relevant parties, coordinated and overseen by the Scan4Safety project team.

Step 14 Audit and Quality Assurance

Care should be taken to ensure all of the Patient identity bands are clear and unmarked. Any Patient ID bands which are identified as being marked / unreadable should be replaced at the earliest opportunity. Any updates to the Patient identity bands should be made as soon as feasibly possible.

An audit should be undertaken as soon as the Patient identity bands are rolled out to ensure that there is compliance throughout the trust for the new Patient identity bands. The audit should also ensure that the Patient ID bands are clear and unmarked.

Regular audits should be undertaken post go live to highlight any safety issues and check ISB 1077 compliance continues, that patients are wearing Patient ID bands and that the bands are still able to be scanned.

Audit information should be saved in a system where the information from the audit can be reported.

Any Patient ID band found not to be compliant MUST be removed and a new Patient ID band printed and applied to the patient.

Patients that have attended as "long stays" should have their Patient ID band changed regularly. Please refer to the Patient ID Policy for frequency.

The main objective of the audit is to ensure that all patients are wearing an ISB1077 compliant Patient ID Band to prevent any misidentification incidents.

Any Patient ID band found to be faded / ineligible by members of staff on the ward should be changed immediately by the ward staff. This stipulation MUST be communicated to staff through the communications methods as stated in the communication plan.

100% of all Patient ID bands applied to patients MUST be GS1 compliant in order to pass the audit.

6.3 Phase 2

Update policies and process(es) to enable linking of products to patients.

"Need to confirm that policies have been updated and approved by the relevant committees to enable the identification of specific implantable medical devices, in vitro diagnostic medical devices and medicines against individual patients and that associated process(es) have been published. Those areas of the trust where the identified products are used need to be clearly identified and activity commenced to adopt the updated policies and procedures."

100% of relevant patients have compliant identity bands issued.

"Need to confirm which relevant patients are in scope for being issued compliant identity bands.

For those areas of the trust admitting relevant patients, there needs to be evidence to show that the systems (including associated printers) have been updated to produce compliant identity bands.

Need to evidence that an audit has been undertaken of relevant patients."

Step 15 Identify the relevant areas of the trust to capture relevant implantable medical devices, in vitro diagnostic medical devices and medicine information.

Suggested relevant areas to track and trace relevant products and the reason why that area is considered relevant:

Relevant Area	Reason for using this area
Ophthalmology	Track and trace implants, such as lenses.
Catheterisation Laboratory	Track and trace implants, such as Pacemakers, Interventional Catheterisation Device
Pharmacy	Track and trace prescriptions / administered drugs
Trauma and Orthopaedics	Track and trace implantable devices, such as hips, knees etc.
Interventional Radiology	Track and trace implantable devices, e.g. stents and guidelines, trace cytology drugs to patient
Endoscopy	Track and trace medical equipment used on patients

Pathology	Track and trace blood tests and results

Table 2: *Suggested relevant areas within the trust to capture relevant implantable medical devices*

Step 16 Update policies and procedures

Produce an action plan to update relevant policies and procedures to ensure relevant products can be tracked to individual patients.

6.4 Phase 3

50% of relevant trust areas are scanning relevant products and linking to individual patients.

"Need to evidence that at least half of the areas of the trust identified during Phase 2 as being relevant are now routinely capturing details of relevant implantable medical devices, in vitro diagnostic medical devices and medicines used against individual patients and can report, for a specific patient, the products, their unit costs and, where required, associated production identifiers."

In at least 1 relevant area outside of theatres, Point of Care scanning for positive patient identification is operational.

"Need to evidence that at least 1 system used in the trust enables the scanning of patient identity bands for positive patient identification. This is in addition to the systems used in Theatres to identify products used against individual patients."

Relevant systems can hold and/or use NHS Number to identify patients in system records.

"Need to evidence that the relevant systems that use and store patient identity information have been updated or changed to use the patient NHS number to identify individual patients."

Step 17 Identify evidence of areas capturing product details

Need to evidence that at least half of the areas of the trust identified during phase 2 as being relevant are now routinely capturing details of products used against individual patients and can report, for a specific patient, the products, their unit costs and, where required, associated production identifiers (such as batch, lot, serial number or manufacture date).

Step 18 Evidence of systems upgrades to store patient identity information

Need to evidence that the priority systems that are utilising and storing patient identity information have been updated or changed to utilise the patient NHS number as the primary reference to identify individual patients.

Step 19 Evidence of products used against individual patients

Need to evidence that, in addition to the systems used in Theatres to identify products used against individual patient, at least 1 system used in the trust now enables the scanning of patient identity band to confirm patient identity.

6.5 Phase 4

100% of relevant trust areas are scanning relevant products and linking to individual patients.

"Need to evidence that all areas of the trust identified during phase 2 as being relevant are now routinely undertaking Point of Care scanning to capture details of products used against individual patients and can report, for a specific patient, the products, their unit costs and, where required, associated production identifiers."

Identify and prioritise future benefit opportunities for the trust of scanning patient identity bands.

"Need to evidence that, following the initial system development, that a review has been undertaken identifying systems in use across the trust where scanning of patient identity bands could be beneficial to increasing patient safety and/or operational efficiency and then prioritising those systems to be developed"

Produce a project review report.

"Need to evidence that a full review has been undertaken following adoption of patient identification enabled through the use of compliant barcoded patient identity bands and related Point of Care scanning policy(ies) and process(es)."

Step 20 Produce project review report

All along your journey there will be incremental developments that move you towards your final position at the end of the programme. As you complete each of these steps record your successes and the lessons learnt along the way.

Your final project review should gather this information together along with:

a) Costs
- The cost of any new systems (installation, support and license costs)
- The cost of any system upgrades
- The cost of any new system interfaces

- Any hardware costs that may have been incurred
- The costs of any posts created for the implementation of the Patient workstream
- The time and banding of any non-Scan4Safety funded bodies contributing
- The numbers and bandings of any new positions generated to carry on the work as BAU

b) Benefits

Together all of this information should represent the summary of your level of change as a result of your work in Scan4Safety. It can then be shared with other organisations to allow them to avoid pitfalls you may have fallen into and adopt practices you have discovered as beneficial.

7 References

- For latest information from the demonstrator sites, go to www.scan4safety.nhs.uk
- For latest information regarding data dictionaries and compliance timelines by market sector go to Scan4Safety Supplier Workspace
- For further details on the use of GS1 standards required by the DH, please go to the Scan4Safety Trust Workspace
- For GLN Allocation Rules, go to http://www.gs1.org/1/glnrules/en/
- GS1 General Specifications
- ISB1077 AIDC for Patient Identification – Operational Information Standard - Specification

Contact us:

To speak directly to a demonstrator site, email scan4safety@nhs.net

Appendix A - **Implementation requirements - Summary**

Phase 0	Phase 1	Phase 2	Phase 3	Phase 4
Complete an "As-Is - To-Be" review of policies, processes and relevant systems.	Publish approved Trust policy regarding patient identification to include use of compliant identity bands.	Update policies and process(es) to enable linking of products to patients.	50% of relevant Trust areas are scanning relevant products and linking to individual patients.	100% of relevant Trust areas are scanning relevant products and linking to individual patients.
Identify benefit opportunities of scanning compliant patient identity bands.	Publish approved process(es) for issuing of patient identity bands.			
	50% of relevant patients have compliant identity bands issued.	100% of relevant patients have compliant identity bands issued.	In at least 1 relevant area outside of theatres, Point of Care scanning for positive patient identification is operational.	Identify and prioritise future benefit opportunities for the Trust of scanning patient identity bands.
	Undertake a review of relevant systems holding and/or using patient identity information to ensure alignment to NHS number.		Relevant systems can hold and/or use NHS Number to identify patients in system records.	Produce a project review report.

Appendix B - What is a GSRN?

Service relationships

Application description

The Global Service Relation Number (GSRN) is a non-significant number used to identify the relationship between an organisation offering services and the individual entities providing or benefitting from the services. The GSRN provides unique and unambiguous identification. It is the key to accessing information, stored on computer systems, relevant to service(s) provided and received and in some cases, these services could be recurring. The GSRN may also be used for referencing information transferred via Electronic Data Interchange (EDI).

When using the GSRN, often two types of relationships may need to be captured in one transaction:

1. The relationship between the organisation offering the service and the actual recipient of the service.

2. The relationship between the organisation offering the service and the actual provider of the service.

It should be noted that the GSRN is not meant to identify a single service as a trade item, neither is it used to identify a physical unit as a trade item. It may identify a physical unit for service purposes (e.g., a computer with a service agreement).

Global Service Relation Number – Provider: AI (8017)

An element string with GS1 Application Identifier AI (8017) represents the Global Service Relation Number of a relationship between the organisation offering the service and the provider of the service. Some examples of how the GSRN can be used to identify the service relationships are:

- A medical procedure, where it could be used to identify an individual medical provider by role. For identification of the individual provider of care, the hospital or the appropriate authority generates a GSRN with AI (8017) for each of its caregivers and encodes it in an appropriate GS1 Data carrier (barcode) symbol on the caregiver's ID card, work station, work order, etc. In this case, the GSRN would ensure non-significant identification management, securing identification uniqueness and also allowing linkage to local rule management systems.
- A service agreement, where it could be used to manage agreed upon services, such as maintenance services for a television or computer.
- A loyalty program required to identify the service relationship between the loyalty program and the service provider (i.e. company providing merchandise due to use of loyalty points).
- A hospital administration can identify the service relationship between hospital and the doctor, nurses, etc.

GS1 key

Definition

The Global Service Relation Number is the GS1 identification key used to identify the relationship between an organisation offering services and the recipient or provider of services. The key is comprised of a GS1 Company Prefix, service reference and check digit.

See section 3.2, Global Service Relation Number AI (8017) and AI (8018) for the definition of the GS1 Application Identifier.

Rules

See section 4.2.5, GSRN rules.

Attributes

Required

Not applicable

Optional

GS1 Application Identifier AI (8019) Service Relation Instance Number, section 3.2

Rules

Not applicable

Data carrier specification

Carrier choices

The data carriers for the Global Service Relation Number (GSRN) are the GS1-128, GS1 DataMatrix and GS1 QR Code symbologies.

Symbol X-dimension, minimum symbol height, and minimum symbol quality

See section 5.5.2.7.11, GS1 system symbol specification table 11

Symbol placement

No standard placement is required.

Unique application processing requirements

For a description of processing requirements, see section 7.

2.5.2 Global Service Relation Number – Recipient: AI (8018)

An element string with GS1 Application Identifier AI (8018) represents the Global Service Relation Number of a relationship between the organisation offering the service and the recipient of the service. Some examples of how the GSRN can be used to identify the service relationships are:

- A hospital admission, where it could be used to identify a subject of care globally and uniquely for AIDC purposes and establish an identification uniqueness that does not harm privacy. For identification of the subject of care (patient) the hospital generates a GSRN with AI (8018) for each of its patients and encodes it in an appropriate GS1 Data carrier (barcode) on the patient's identity band as well as his or her corresponding medical record, pathology samples, etc. The GSRN may then be used as the key to link multiple or specific instances of treatment, room charges, medical tests, and patient charges.

- A membership in a frequent flyer programme, where it could be used to record awards, claims, and preferences.
- A membership in a loyalty scheme, where it could be used to record visits, purchase value, and awards.
- A membership in a club, where it could be used for recording entitlements, use of facilities, and subscriptions.
- A loyalty program required to identify the service relationship between the loyalty program and the recipient of the loyalty program (the end user or customer who earns loyalty points).
- Patient admission to a hospital can identify the service relationship between the hospital and the patient.
- Utility networks, such as those providing electricity, gas or water, where it could be used to identify the relationship between network service providers and suppliers of utility products.
- A GSRN could be used to give students access to other libraries that have formed a cooperative lending agreement. A typical application is the identification of membership in a student library. The library would issue all members a card that includes a unique GSRN identifying the relationship between the library and a student. The library would then scan the GSRN whenever a book was lent or returned. The Electronic Message from the scanner would then be used to automatically update the library's stock management database. See the figure below for an example of how the service relationship identifier would appear on this membership card.

GS1 Key

Definition

The Global Service Relation Number is the GS1 identification key used to identify the relationship between an organisation offering services and the recipient or provider of services. The key is comprised of a GS1 Company Prefix, service reference and check digit.

See section 3.2, Global Service Relation Number AI (8017) and AI (8018) for the definition of the GS1 Application Identifier.

Rules

See section 4.2.5, GSRN rules.

Attributes

Required

Not applicable

Optional

GS1 Application Identifier AI (8019) Service Relation Instance Number, section 3.2.

Rules

Not applicable

Data carrier specification

Carrier choices

The data carriers for the Global Service Relation Number (GSRN) are the GS1-128, GS1 DataMatrix and GS1 QR Code symbologies.

Symbol X-dimension, minimum symbol height, and minimum symbol quality

See section 5.5.2.7.11, GS1 system symbol specification table 11

Symbol placement

No standard placement is required.

Unique application processing requirements

For a description of processing requirements, see section 7.

2.5.3 Service Relation Instance Number: AI (8019)

When a product or service is administered (e.g., a particular treatment is given) it can easily be associated with the patient by scanning the Global Trade Item Number (GTIN) of the product or service as well as the caregiver's GSRN (barcoded with AI (8017)) and the patient's GSRN (barcoded with AI (8018)). If the subject of care identification needs to, optionally, be made more granular with a sequence indicator corresponding to each encounter during the episode of care, attribute data in the form of a Service Relation Instance Number (GS1 Application Identifier AI (8019), see section 3.2) may be added. This would, for example, allow differentiation of subject of care identification captured from an identification band, both before and after its replacement (i.e. radiology examination). If the treatment plan requires different instances of care, such as chemotherapies, and when a record should be captured for each instance, the SRIN linked to the GSRN may be used.

Reference: *GS1 General Specifications; the foundational GS1 standard that defines how identification keys, data attributes and barcodes must be use in business applications. Release 17.1, Ratified, Jul 2017*

Appendix C - Questions and Answers

Question	Answer
The patient identification bands are failing GS1 testing?	Discuss with GS1 the reasons for the identification bands failing. Common reasons for failure: The patient's last name, first name and date of birth, including spaces, are over 30 characters. This can be rectified by sending a patient's identification band for testing that has a short first name and last name, e.g. John Smith.
Some of the patient identification band media is not compatible with GS1 barcodes?	Further guidance is available through the Scan4Safety workspace on DH eXchange listing compatible band media.
The mother's name on the neo natal identification bands is being overwritten?	Liaise with your patient system supplier and printer supplier to revise the design of the patient identifiable band.
Some 3rd party software is not integrating correctly with the 2D barcode?	Liaise with your 3rd party supplier and patient system supplier to work out the issues that are causing this. It would be worthwhile, from the experience of the demonstrator sites, to get all of the key stakeholders involved in creating the 2D barcodes / printing the patient identity bands and providing the relevant media labels all together on one phone call.
The Trust is worried about some patients being cut / scratched by the patient identification bands	Further guidance is available through the Scan4Safety workspace on DH eXchange listing compatible band media, including which is safe for inpatients and neo natal.
There is not enough room on the patient identity bands for the data the Trust wishes to present?	Liaise with your 3rd party supplier and patient system supplier to work out the issues that are causing this
The patient identification bands are becoming unclear / fading?	An audit of the patient identifiable bands on each ward should be carried out each month as per the patient ID policy, to ensure all patient identifiable bands are kept clean, readable a legible for scanning devices and members of staff

The Trusts installed software application for 2D barcode readers on mobile devices is not always scanning the barcode correctly?	It is recommended that the Trust complete a series of tests using various different barcode scanning applications to see which are best for scanning the 2D barcode. A full test of the readers is required for example: The lighting in the location where the barcode is being scanned or the angle at which the barcode is being scanned.
Staff have been finding shortcuts when using 3rd party software integrating with the barcodes?	This is a bit more difficult to fix, the best way of doing this is to work with the 3rd party supplier to provide a solution which uses the 2D barcode, not the linear barcodes, for identifying patients.
The barcodes being printed are not able to interface with the 3rd party software even though it used to?	If the 3rd party software can no longer interface with the new barcodes, then the software MUST be rolled back to its previous version (either the main patient system software or the printer software or both) so that the interface is restored. The Trust must then work with the 3rd party supplier, the software supplier and the main patient system supplier to ensure that the interface can work when the 2D barcode is rolled out again.
NHS numbers are not always known for specific patients at the point when identity bands require to be printed/issued.	A patient identity band should still be produced in accordance with ISB1077. The code "9999999999" should be used in place of an individual's NHS number within the GSRN and a hospital specific set of codes for the patient added in line with section 5.2 of Appendix F, preceded by the application identifier (91) to identify it as a hospital specific code. Once an individual's NHS number is known consideration should be given to the timing and appropriateness of re-printing and re-affixing an updated identity band complete with NHS number.

Appendix D - PATIENT project stakeholders

Job Title	Responsibility within PATIENT
Medical Director / Nursing Director	Ownership of the policy and advise on improvements and efficiencies
Divisional Nurses	To ensure staff are educated and comply with policy
Clinical Director	To ensure staff are educated and comply with policy
Clinical Leads	Ensure specialty Clinical Systems in the departments comply with policy
Scan4Safety Lead Nurse	Monthly audit of identification band compliance
IT Director	Ensure all systems, old and new, comply with standards and lead supplier management to achieve standards
Caldicott Guardian (normally the Medical Director) and Information Governance Lead	To ensure protection and confidentiality of patient information and enabling appropriate information-sharing
Chief Information Officer or equivalent	Ensure all information complies with policy guidelines
Chief Clinical Information Officer or equivalent	Ensure all information complies with policy guidelines

Appendix E - Example documents reviewed for Phase 1

Document Title	Purpose
Positive Patient ID Policy	Understanding current processes and standards within the Trust
Babies and Neo Natal Patient ID Policy	
Strategic IT Document	Look at the strategy and ensure future procurement strategy PQQ and ITT process going forward

Appendix F - Technical Specification for Barcodes

Requirements Specification for the structure of Patient ID Bands

Structure of the Patient ID Bands

Table 1: Baby Identity Band – Single Baby

Application Identifier	8018
GS1 Unique Organisation Prefix for NHS Digital	5050898
NHS Number including check digit	1234567890
GSRN Check Digit	8
Application Identifier	91
Organisation Code	CR
Patient Hospital Number	123456
GS1 Unique Organisation Prefix for NHS Trust	50552285
Application Identifier	93
Last Name	CHAPPELL
First Name	Emma
Date of Birth	03-Aug-2017
Time of Birth	07:33
AI	92
Number of Babies Indicator	1/1
Baby of (Last Name)	CHAPPELL
Baby of (First Name)	Ann

Table 2: Baby Identity Band – More than One Baby

Application Identifier	8018
GS1 Unique Organisation Prefix for NHS Digital	5050898
NHS Number including check digit	1234567890
GSRN Check Digit	8
Application Identifier	91

Organisation Code	CR
Patient Hospital Number	123456
GS1 Unique Organisation Prefix for NHS Trust	50552285
Application Identifier	93
Last Name	CHAPPELL
First Name	Emma
Date of Birth	03-Aug-2017
Time of Birth	07:33
AI	92
Number of Babies Indicator	2/3
Baby of (Last Name)	CHAPPELL
Baby of (First Name)	Ann

WRIST A / C (Example Data Included)

Table 3: Standard Identity Band – NHS Number and Local Hospital Identifiers

Application Identifier	8018
GS1 Unique Organisation Prefix for NHS Digital	5050898
NHS Number including check digit	1234567890
GSRN Check Digit	8
Application Identifier	91
Organisation Code	CR
Patient Hospital Number	123456
GS1 Unique Organisation Prefix for NHS Trust	50552285
Application Identifier	93
Last Name	CHAPPELL
First Name	Emma
Date of Birth	03-Aug-2017

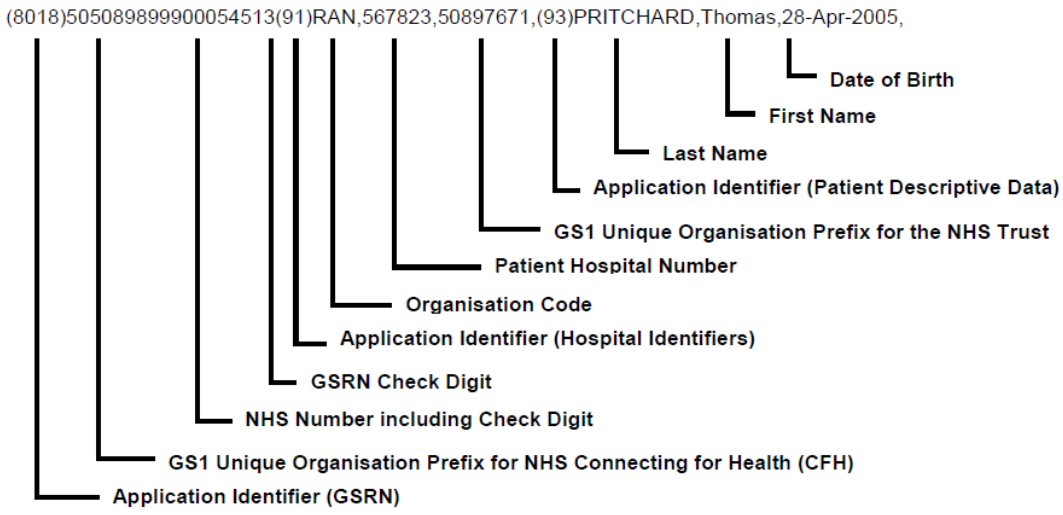
Table 4: Standard Identity Band – NHS Number Not Available / Invalid / Unverified

Application Identifier	8018
GS1 Unique Organisation Prefix for NHS Digital	5050898
NHS Number including check digit	9999999999
GSRN Check Digit	3
Application Identifier	91
Organisation Code	CR
Patient Hospital Number	123456
GS1 Unique Organisation Prefix for NHS Trust	50552285
Application Identifier	93
Last Name	CHAPPELL
First Name	Emma
Date of Birth	03-Aug-2017

ISB1077 Diagrammatical format of the Patient ID Bands:

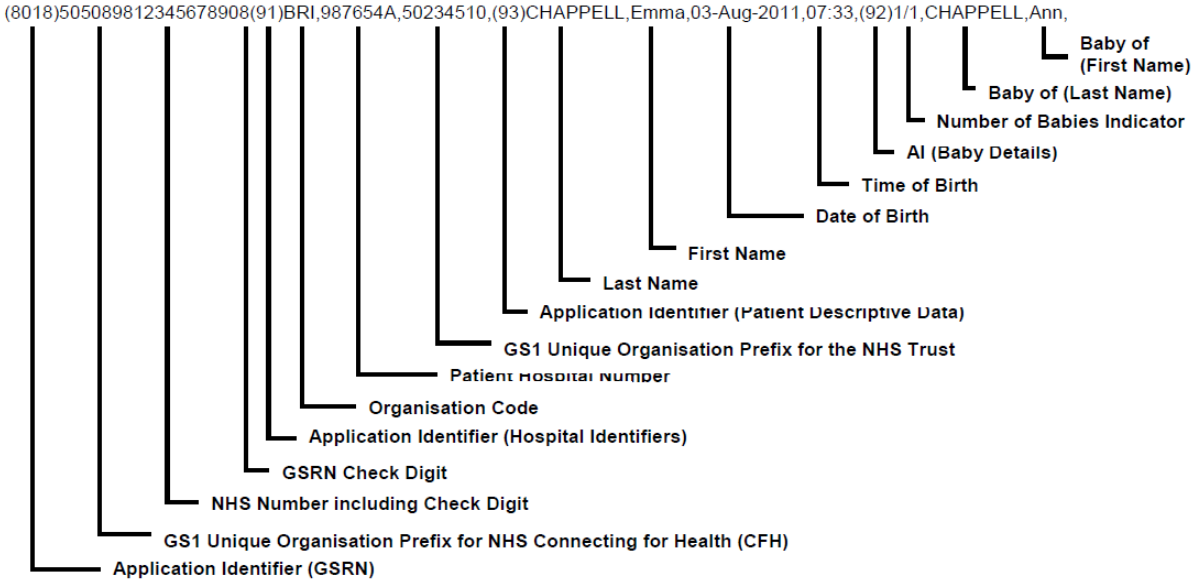
5.2 Standard Identity Band – NHS Number and Local Hospital Identifiers

The patient is an infant male with a valid NHS Number available. The Trust wishes to include local hospital information extracted directly from the PAS and the Trust's GS1 Unique Organisation Prefix (which is optional).



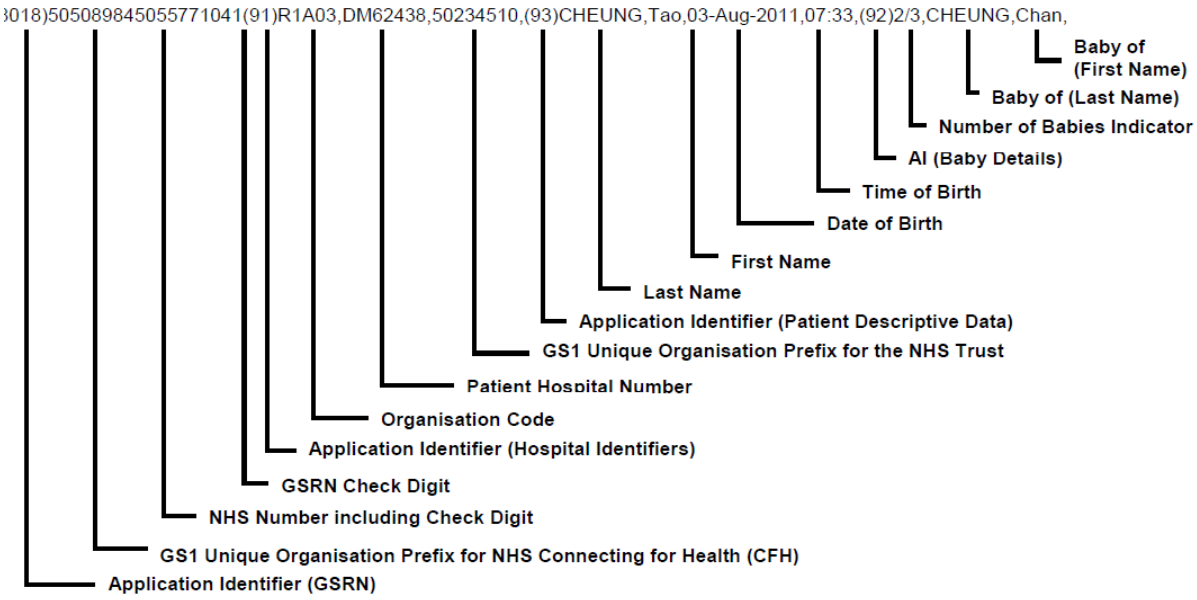
5.4 Baby Identity Band – Single Baby

The patient is a one day old female single baby and has been registered with NN4B and therefore has a valid and verified NHS Number. The Trust wishes to include local hospital information extracted directly from the PAS and the Trust's GS1 Unique Organisation Prefix.

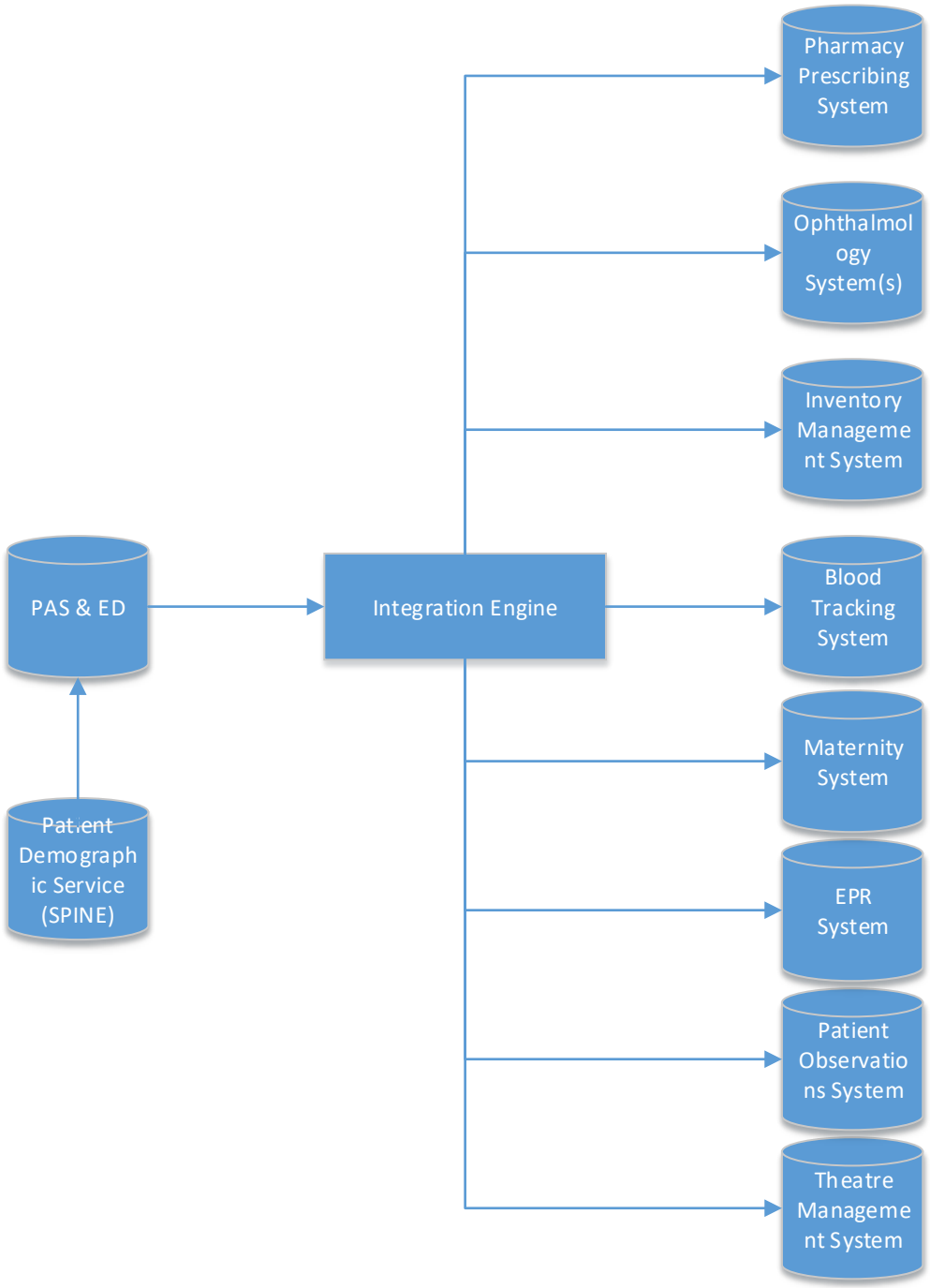


5.5 Baby Identity Band – More Than One Baby

The patient is the one day old second baby of male triplets and has been registered with NN4B and therefore has a valid and verified NHS Number. The Trust wishes to include local hospital information extracted directly from the PAS and the Trust's GS1 Unique Organisation Prefix.



Appendix G - patient identity systems architecture



Appendix H - Example project plan

	Resource Key: S: Supplier, S4S: Scan4Safety Team, PMIT: Project Manager IT, 3PST: 3rd Party Software Integration Team, GS1: GS1 UK Team, IAO: Information Asset Owner, COO: Chief Operating Office, WL: Workstream Lead, CL: Clinical Lead, IMST: Inventory Management System Team			**Indicative Working Day (s)**	
	Task	**Timescale**	**Resource Required**	**Day Start**	**Day Finish**
1	Start Workstream	2 Weeks	PMIT, WL, CL	Day 1	Day 14
2	Liaise with printer company, patient identity band supplier and patient system supplier for output on patient identity band	3 Months	S, S4S, PMIT	Day 14	Day 104
3	Submit a Request For Change for upgrade to training / testing environments	7 Days Prior	PMIT	Day 104	Day 111
4	Roll out change into Testing / Training system	Following 2	PMIT	Day 111	Day 111
5	Print patient identity band for Adult, Child, Neo Natal	Following 2	PMIT	Day 111	Day 111
6	Test patient identity band produces desired output	Following 2	PMIT	Day 111	Day 111
7	Test patient identity band with 3rd party supplier software produces the desired interaction and output	Following 2	PMIT, 3PST	Day 111	Day 111
8	Test Neo Natal patient identity band with the Neo Natal team	Following 2	PMIT, 3PST	Day 111	Day 111
9	Send Adult, Child and Neo Natal patient identity bands to GS1 for testing	Following 2	PMIT	Day 111	Day 118
10	Pass desired output	Following 2	GS1	Day 118	Day 125
11	Pass the 3rd party supplier interaction	Following 2	PMIT	Day 118	Day 125
12	Pass the neo natal test with the neo natal team	Following 2	PMIT	Day 118	Day 125
13	Arrange time when best to take down the ability to print patient identity band	Following 11	PMIT	Day 126	Day 127
14	Liaise with patient system supplier, patient identity band supplier and 3rd party software user team for best time to roll out	Following 12	PMIT, S, S4S, 3PST	Day 126	Day 127
15	Agree roll out times	Prior to submitting RFC	PMIT, IAO, COO, S, S4S, 3PST	Day 126	Day 127
16	Submit Request For Change	7 Days Prior	PMIT	Day 126	Day 126
17	Arrange engineers to be onsite in case any issues arise	Prior to roll out	PMIT	Day 126	Day 130
18	Patient system supplier to stop the ability to print patient identity band from the software	On Roll Out	3PST, PMIT	Day 133	Day 133
19	Notice of change to go out to all users	5 Days Prior	PMIT	Day 128	Day 133
20	Request For Change approved	5 Days Prior	RFC Board	Day 126	Day 126
21	Communicate change to all staff	Refer to communication plan	S4S	Day 128	Day 128
21	Roll out change into Live	Go Live	S, S4S, PMIT	Day 133	Day 133
22	Print patient identity band for Adult, Child, Neo Natal	Following 20	PMIT	Day 133	Day 133
23	Test patient identity band produces desired output	Following 20	PMIT	Day 133	Day 133
24	Test patient identity band with 3rd party supplier software produces the desired interaction and output	Following 20	PMIT, 3PST	Day 133	Day 133
25	Test Neo Natal patient identity band with the Neo Natal team	Following 20	PMIT, 3PST	Day 133	Day 133
26	Submit Adult, Child and Neo Natal patient identity bands to GS1 for LIVE compliance testing	Following 20	PMIT	Day 133	Day 140
27	Pass desired output	Following 20	GS1	Day 133	Day 133
28	Pass the 3rd party supplier interaction	Following 20	PMIT	Day 133	Day 133
29	Pass the neo natal test with the neo natal team	Following 20	PMIT	Day 133	Day 133
30	Audit Patient Identity Bands	Following 20	S4S	Day 133	BAU
31	Ordering of Consumables	Following 20	IMST	Day 147	BAU
32	Review of Clinical and Business Systems	Following 30	S4S, PMIT	Day 147	BAU

33	Identify Implantable Devices	Following 30	IMST	Day 147	BAU
34	Update Policies and Procedures	Following 30	S4S	Day 147	Ongoing
35	Capture Product Details	Following 30	S4S	Day 147	BAU
36	Plan upgrades to patient systems	Following 30	PMIT	Day 147	Ongoing
37	Products Recorded against Patients	Following 30	S4S	Day 147	BAU

Appendix I - Example patient identity policy

Below is an example patient identity Policy for use by a Trust. It is meant as a guide and can be altered to suit each specific organisation.

20170530 - Positive Patient Identifaction

Appendix J - Example training register

User	Job Role	Involvement in location identity	Relevant SOPs	Method of Training	Trainer	Training Date	Signed