Design Guidance

Patient Banner

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Prepared by
Microsoft

Microsoft

PREFACE

Documents replaced by this document

Document Title	Version
Design Guidance – Patient Banner	3.0.0.0
Design Guidance – Patient Banner	2.0.0.0

Documents to be read in conjunction with this document

Document Title	Version
Design Guidance – Date Display	3.0.0.0
Design Guidance – Time Display	3.0.0.0
Design Guidance – Address Input and Display	2.0.0.0
Design Guidance – Sex and Current Gender Input and Display	2.0.0.0
Design Guidance – Patient Identification Number Input and Display	2.0.0.0
Design Guidance – Telephone Number Input and Display	2.0.0.0
Design Guidance – Accessibility Checklist	1.0.0.0
Design Guidance – Accessibility Principles	1.0.0.0

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1 INTRODUCTION

This document describes the design guidance for Patient Banner. It describes the area of focus, provides guidance and recommendations, and explains the rationale behind the guidance and recommendations.

A patient banner is an area within a clinical user interface (UI) that provides key information in a consistent and unambiguous manner, allowing patients to be accurately identified and matched with their associated records.

This document is intended for the use of anyone whose role includes screen design, implementation, or assessment of a clinical application. This document can be used as guidance for the:

- Specification of a patient banner in a user interface
- Implementation of a patient banner within an application
- Assessment of a patient banner in a clinical application user interface

Table 1 describes the changes made since the previous version of this guidance (Baseline version 3.0.0.0 dated 24-Jan-2008):

Change	IDs	Change Description
Deleted		None
Modified		Including text relating to display styles (section 1.2.2)
		Enhanced context setting for out of scope text (section 1.2.2)
		Including Patient Safety Assessment (section 2)
		Correcting field length descriptor for Last Name (2.2.3 Note)
	PAB-0016	Modification to wording
Added	PAB-0073	Mandatory use of Zone 1
	PAB-0074	Recommended use of Zone 2
	PAB-0075	Zone 2 expand and collapse capability
	PAB-0076	Tabbing order within displayed information

Table 1: Changes Since the Last Baseline Version

1.1 Customer Need

1.1.1 Overview

The term “patient banner” refers to the area of the user interface that contains header information for a patient record. The patient banner is the area within the user interface that is most often used to match records with patients and contains key information for identifying patients, such as name, address and date of birth. This information may be matched with that provided by the patient (or a third party, such as a parent), usually in their presence or over the telephone. Information in the patient banner may also be matched with that in any of the patient’s associated artefacts, such as samples, letters, specimens, wristbands and X-rays.

Although there are no accurate figures on the frequency or cost of mismatching errors, they form a significant part of the whole range of errors in health care. However, there is considerable variation in the layout of a patient banner across clinical applications.

The aims of the Patient Banner described in this guidance are to:

- Ensure patients are correctly identified and matched with their patient record by displaying data items consistently
- Allow quick access to and display of other summary information, such as contact details and allergies, for a patient
- Reduce and, where possible, eliminate errors in the matching of patients with their care

When errors do occur, they are typically one of three main types (as reported by the UK National Health Service (NHS) National Patient Safety Agency (NPSA) in *Right Patient, Right Care* **{R1}**):

1. The patient is given the wrong treatment as a result of a failure to identify the patient correctly
2. The patient is given the wrong treatment as a result of a failure to match the patient correctly with their artefacts (samples, letters, specimens, X-rays, and so on)
3. The patient is given the wrong treatment as a result of a failure in communication between staff, or staff not performing checking procedures correctly

This guidance is concerned with each of the errors identified above, but particularly 1) and 2).

1.1.2 Eliminating Inconsistencies Across Systems

Significant inconsistencies exist across patient banners in many clinical applications. This has a large but probably unquantifiable cost in terms of incorrect identification of patients, leading to safety issues and, potentially, additional staff training. Reduction of inconsistency is therefore an important goal in itself – and the primary aim of this guidance.

1.1.3 Simplified UI Design and Development

Having a consistent, agreed layout for patient banners in clinical systems, potentially makes the design and development of such systems easier and quicker.

1.2 Scope

1.2.1 In Scope

This guidance is applicable to user interfaces displayed on desktop or laptop computers. It is assumed that, at a minimum, these computers are capable of operating at a minimum display resolution of 1024 x 768, and have a keyboard and pointing device. The following items are in scope:

- **Defining the minimum items of information that must be contained in a Patient Banner in order to identify the patient**, such as, but not limited to:
  - Patient name (family name, given name and title)
  - Patient address
  - Date of birth
  - Patient age
  - Date of death (displayed to aid the identification of deceased patients)
  - Gender
  - Patient Identification number

- **Grouping and layout of this information**, including:
  - Which data items should be grouped together
  - Which data items should be given the most prominence
  - Whether and where controls (such as expandable/collapsible panels) should be used
- **Labelling of information**, including:
  - Which items of information in the Patient Banner are to be labelled
  - How items of information are to be labelled; this will cover the label text, positioning and any elements of styling required to differentiate labels visually from data
- **Location and shape of the Patient Banner**, in order to achieve:
  - Optimal visibility of the key information needed for patient identification
  - Easy recognition of the Patient Banner in the context of the wider clinical application
- **Size of the Patient Banner**. This must be a balance between the minimum required for suitable layout of the content, and the maximum that can be used at the expense of screen space left for the clinical application to use

1.2.2 Out of Scope

This section defines areas that are not covered in this guidance. Although there may be specific risks associated with these areas that are not addressed in this guidance, it is likely that the principles in this guidance will extend to aspects of the Patient Banner in many of the areas listed below.

The following items are out of scope:

- **Reduced-size form factors** – This guidance does not cover reduced-size form factors, such as personal digital assistants (PDAs) and such other small mobile devices
- **Input of information** – This guidance does not cover the entering of information into the patient record
- **Display styles** – This guidance does not cover the choice of display features such as font size, background and foreground text colour
- **Data storage** – This guidance does not prescribe the format for storing data displayed in the Patient Banner

> **Note**
>
> Listing an item as out of scope does not classify it as unimportant. Project time and resource constraints inevitably restrict what can be in scope for a particular release. It is possible that items out of scope for this release may be considered for a future release.

1.2.3 Dependencies and Assumptions

Compliance with other guidance is required as follows:

- The display of dates must conform to guidance for Date Display **{R2}**
- The display of age must conform to guidance for Time Display **{R3}**
- The display of gender must conform to guidance for Sex and Current Gender Display **{R4}**
- The display of patient identification number must conform to guidance for Patient Identification Number Display **{R5}**
- The display of addresses must conform to guidance for Address Display **{R6}**

- The display of phone numbers must conform to guidance for Telephone Number Display **{R7}**
- The design of clinical applications must conform to the Accessibility Checklist **{R8}** and the Accessibility Principles **{R9}**

> **Important**
>
> The diagrams, mock screenshots and icons in this document are purely illustrative.

1.3 Key Principles

The following key principles have shaped the guidance in this document:

- Reliable and accurate identification of an individual patient record
- Matching a patient record with:
  - The correct patient, whether present in person or by phone
  - Other artefacts associated with the patient, for example, samples, letters, or wristbands
- Displaying core information according to existing standards and guidance and using a minimum data set available to clinical applications
- Promoting consistency across the mix of users, clinical applications and care settings
- Displaying minimum supplementary information to support patient identification or enhance patient care
- Minimising opportunities where patient-clinician confidentiality and patient privacy may be compromised
- Minimising opportunities for human error

2 Recommendation and Guidance

The guidance provided throughout this document is based upon a programme of user research, including:

- A Web based survey of 65 clinicians covering a range of patient identification issues
- A Web based survey of 158 healthcare administrative staff and healthcare professionals, including clinicians
- 12 one-to-one interviews with a range of healthcare professionals
- Patient safety assessment

2.1 Structure and Composition

This section introduces the structure of the Patient Banner and the terminology used to describe its constituent parts. The Patient Banner consists of two zones, Zone 1 and Zone 2, as shown in the example given in Figure 1 taken from the UK National Health Service. This is the default display, with Zone 2 collapsed. Zone 2, which consists of five sections, can be expanded to reveal additional information, as shown in the example given in Figure 2 taken from the UK National Health Service.

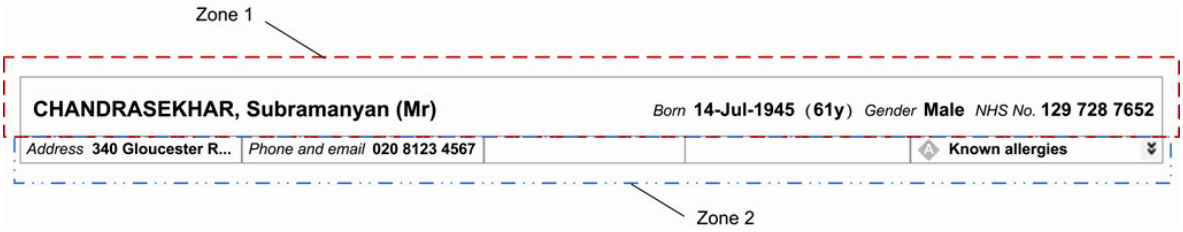

Figure 1: Example of a Patient Banner in the Default Collapsed State: Zone 1 and Zone 2

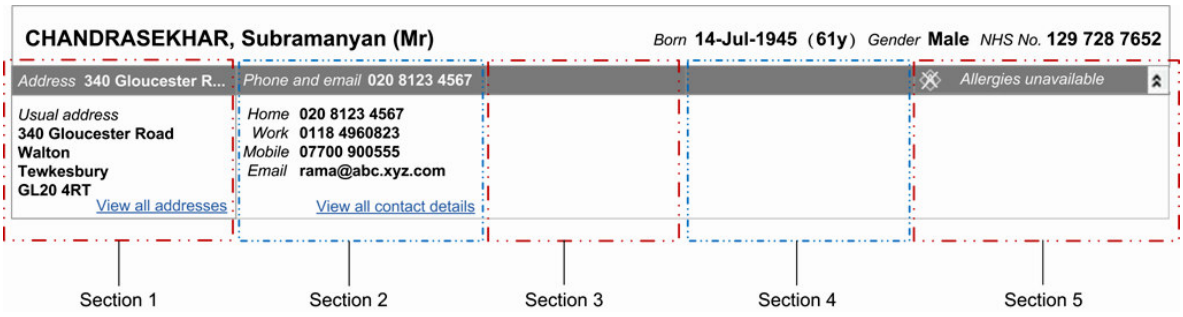

Figure 2: Example of a Patient Banner With Zone 2 Expanded

2.1.1 Guidance

ID	Guideline	Status
PAB-0001	The Patient Banner should consist of two zones, Zone 1 and Zone 2	Recommended
PAB-0073	The Patient Banner must include Zone 1	Mandatory
PAB-0002	Display information that facilitates patient identification in Zone 1	Mandatory
PAB-0074	The Patient Banner should include Zone 2	Recommended
PAB-0003	Display supplementary information that either supports patient identification or assists patient care in Zone 2	Mandatory

ID	Guideline	Status
PAB-0004	Where Zone 2 is used, in the default display of the Patient Banner, show Zone 1 and Zone 2, with Zone 2 in the collapsed state	Mandatory
PAB-0005	Zone 2 consists of five sections	Mandatory
PAB-0075	Zone 2 must have expand and collapse capability	Mandatory
PAB-0006	All five sections in Zone 2 expand and collapse together	Mandatory
PAB-0007	Display a tooltip when the mouse is positioned over Zone 2 while Zone 2 is collapsed, stating that Zone 2 can be expanded	Mandatory
PAB-0008	The Patient Banner adheres to role-based access control, for example, do not display clinical information, such as allergy propensities, to non-clinical users	Mandatory

Table 2: Guidance – Patient Banner Structure and Composition

2.1.2 Rationale

This guidance illustrates and supports:

- Enhanced patient care by providing supplementary information such as the patient's contact details and propensity to allergies, in Zone 2, and by making Zone 2 fully expandable
- Display of information appropriate to the user's role. The issue of role-based display can be addressed by using Zone 2 to display information which only certain types of users would be permitted to view

2.2 Application Context and Patient Banner Positioning

The Patient Banner is used only when a patient record has been selected and opened. The Patient Banner also has the potential to support other tasks and requirements beyond those of patient identification.

The Patient Banner must reside within the context of an overall clinical application that provides access to items such as:

- Patient records and information
- Medications information
- Search and find functions
- Other "patient-centric" information, such as clinical notes, demographics and histories

An example screen layout that contains a Patient Banner is illustrated in Figure 3.

The primary focus of the guidance in this document is the selection, display and manipulation of information within the Patient Banner area (indicated by the dotted line in Figure 3), although some of the features may also be related to controls or information outside this area.

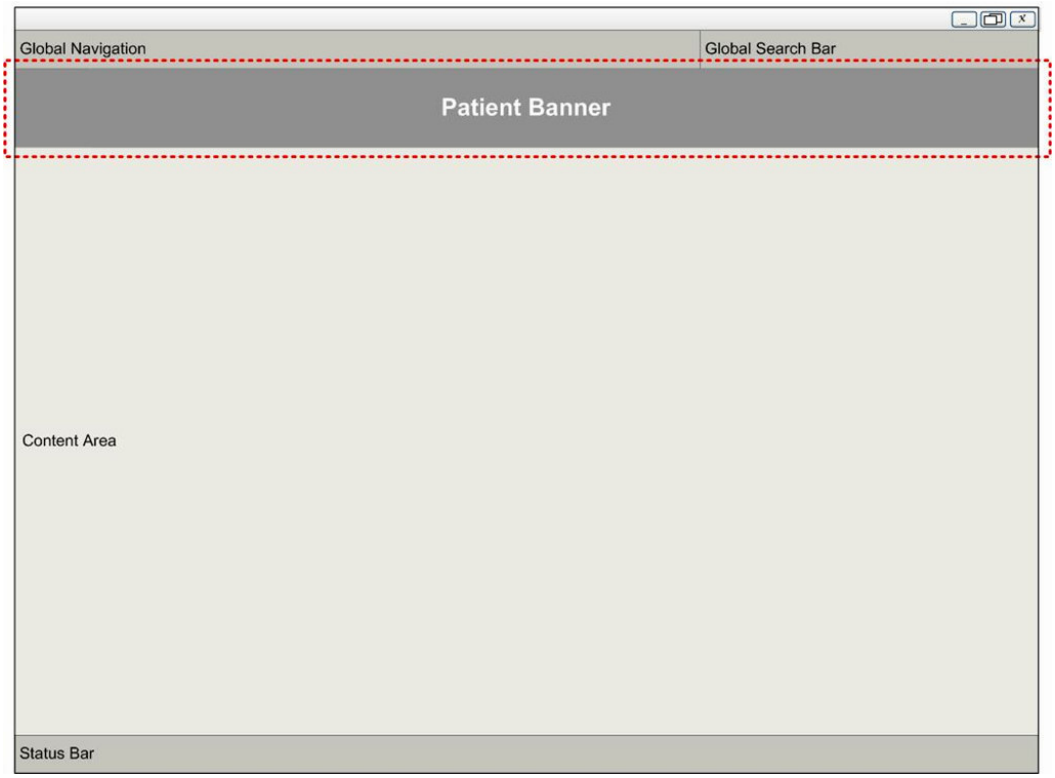

Figure 3: Notional Clinical Application Context for Display of the Patient Banner

2.2.1 Guidance

ID	Guideline	Status
PAB-0009	Display the Patient Banner at the top of the application window	Mandatory
PAB-0010	Display the Patient Banner across the width of the screen rather than vertically	Mandatory
PAB-0011	Display the Patient Banner in a fixed position, unmovable by the user	Mandatory
PAB-0012	Display the Patient Banner so that it occupies the full width of the application window	Mandatory
PAB-0013	Do not obscure the Patient Banner with other elements of the screen	Recommended
PAB-0014	Apply visual styling such as a thick border or distinguishing background colour, to the Patient Banner in contrast to other elements of the application's user interface	Mandatory
PAB-0015	Do not display the Patient Banner on screens that contain information relating to more than one patient	Recommended

Table 3: Guidance – Application Context and Patient Banner Positioning

2.2.2 Examples of Correct and Incorrect Usage

In Figure 4 and Figure 5, the options on the left shows correct usage in conformance with this guidance; those on the right show incorrect usage.

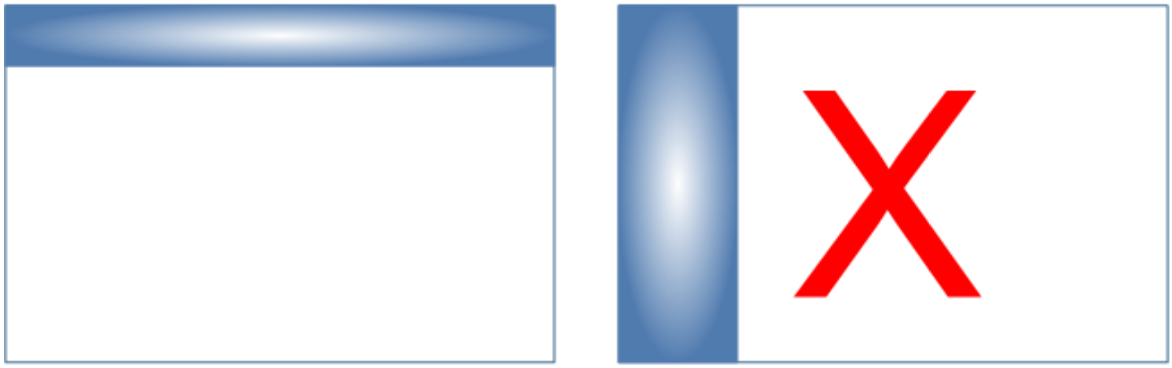

Figure 4: Horizontal Versus Vertical Display in the Patient Banner

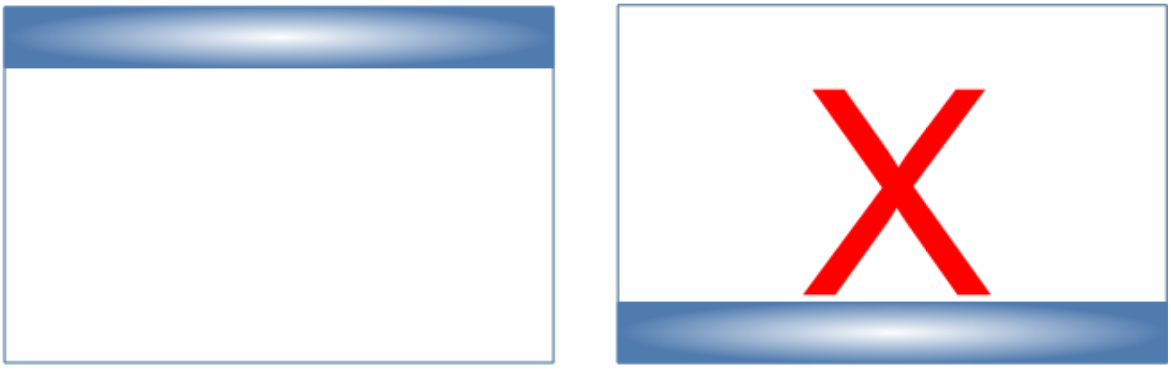

Figure 5: Top Versus Bottom Display in the Patient Banner

The examples given in Figure 6 and Figure 7, taken from the UK National Health Service, show how the Patient Banner can be emphasised with a thick border to set it apart from the host application.

Figure 6: Example of an Emphasised Patient Banner in Default Collapsed State

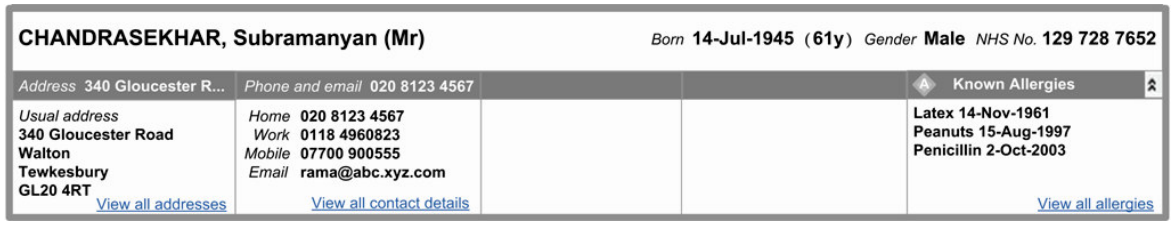

Figure 7: Example of an Emphasised Patient Banner With Zone 2 Expanded

2.2.3 Rationale

The primary purpose of the Patient Banner is to ensure the user has sufficient information to confirm the patient's identity ("right patient") and that the correct record is open ("right care"). This guidance accounts for the application context and achieves:

- Careful placement of the Patient Banner in a permanent and prominent part of the screen in order to optimise visibility of the key information needed for patient identification
- Easy recognition of the Patient Banner in the wider context of the application, by the use of a thick border to differentiate the banner from other items displayed on the screen

The optimal positioning of the Patient Banner is important as patient identification is a frequent and critical task. This guidance:

- Enables users to find the information required for patient identification quickly and repeatedly, by ensuring the Patient Banner is in a fixed position at the top of the screen **{R10}**
- Ensures patient identification is accurate by displaying the Patient Banner only when information for a single patient is displayed; this prevents the Patient Banner from being associated with the records for another patient if a screen is displaying information for more than one patient
- Supports users' natural reading pattern; users of clinical applications in England have a cultural disposition to read from top-to-bottom and left-to-right, whether reading a printed page or a computer screen **{R10}**
- Allows efficient use to be made of the screen by using a horizontal Patient Banner

> **Note**
>
> A vertical patient banner would lead to wasted space. For example, the *NHS Data Model and Dictionary*[1] requires a field display up to a maximum of 35 characters for patient's last name. To avoid text wrapping over multiple lines, the vertical banner would have to be very wide. Accordingly, a horizontal banner must be used.

2.3 The Minimum Data Set

This section defines the key data items that must be displayed in all Patient Banners, and represents the minimum information that is necessary and sufficient to support patient identification. The minimum data set varies depending on whether the patient is alive or deceased, as defined in Table 3. The placement of items from the minimum data set in Zones 1 and 2 is defined elsewhere in this guidance, as is the labelling of these items.

2.3.1 Guidance

ID	Guideline	Status
PAB-0016	Always display the patient's name (family name, given name and title), date of birth, gender and patient identification number in this order within the Patient Banner	Mandatory
PAB-0076	Enable a user to tab between the patient identification data in the same order as the displayed information as follows: the patient's name (family name, given name and title), date of birth, gender and patient identification number	Mandatory
PAB-0017	For a patient who is alive, the Patient Banner additionally displays contact details (comprising the address and phone numbers) and the patient's age	Mandatory

[1] NHS Data Model and Dictionary **{R11}**: http://www.datadictionary.nhs.uk/

ID	Guideline	Status
PAB-0018	For a deceased patient, the Patient Banner additionally displays the last known contact details (comprising the address and phone numbers), date of death and age at death	Mandatory
PAB-0019	If an individual data item is not known, or is otherwise unavailable, a blank string or appropriate self explanatory text (such as "Not Known", but not a "?") is to be displayed immediately after the corresponding data label	Mandatory
PAB-0020	Display the preferred name if available	Recommended
PAB-0021	Do not display the patient's photograph in the Patient Banner	Recommended

Table 4: Guidance – Minimum Data Set

2.3.2 Rationale

Displaying and using a minimum data set will:

- Improve patient safety by ensuring that the process of identifying patients and associating them with their respective records is based upon a consistent set of data that is common to all clinical applications
- Facilitate clinical effectiveness by providing a consistent set of data that is displayed in a standardised manner across all clinical applications; users will spend less time scanning the interface for key data items and more time using that data effectively **{R12}**
- At least partially mitigate the risk associated with using out-of-date images by not including a photo of the patient; user feedback indicated that photographs are not critical for patient identification, and currently have more logistical drawbacks than patient safety benefits

The following requirements are met in full or in part:

- The user can clearly confirm that the correct patient record is open when the patient is present in person and able to answer questions
- The user can clearly confirm that the correct patient record is open when identifying the patient over the phone
- The user can clearly confirm that the correct patient record is open using another set of information about the patient. This other set of information may be held in the user's memory or as an external source, such as written correspondence, paper records, or other artefacts such as wristbands **{R13}** and specimen bottle labels. The information may be machine-readable, such as bar codes or Radio Frequency Identification (RFID) tags
- The user can identify an individual patient record with the highest degree of accuracy possible as the minimum data set is the necessary and sufficient set of information required for accurate patient identification
- The user can see when any part of key patient identification information, namely the minimum data set, is missing from the system
- The information represented in the Patient Banner conforms to information display standards applicable to computer systems (for example, date display)
- The attributes displayed in the Patient Banner are those that are most likely to be known for all patients

The minimum dataset for living and deceased patients is supported by user feedback from a range of clinical and non-clinical roles.

This user feedback found that using abbreviations in the Patient Banner, such as "?" or "-", to indicate the absence of key data was confusing to a large number of users.

User feedback showed strong support for displaying a patient's preferred name if this is different from the first name (such as a nick name) and it is recorded in the system. This facilitates less formal patient-clinician interactions and could be used by, for example, nurses to enhance patient care. Additionally, it provides supplementary information to support patient identification. It is intended that only the given name portion of the preferred name is displayed in the Patient Banner.

> **Note**
>
> While it is recognised that a photograph of the patient may be helpful, its inclusion would compound the significant space constraints that already impact the Patient Banner. Additionally, business processes and systems may need to be established to accommodate the handling of photographs if they are not already in place. For these reasons, inclusion of a photograph has not been mandated in this guidance.

2.4 Information Groupings

This section defines how the data items on the Patient Banner should be logically and visually grouped together. The core information used for patient identification is displayed in Zone 1 which must be displayed at all times when a single patient's record is open. Zone 2 consists of five sections in an expandable panel that provides access to supplementary information.

2.4.1 Guidance

ID	Guideline	Status
PAB-0022	Display the elements of the patient name, date of birth, gender and patient identification number in Zone 1	Mandatory
PAB-0023	Display the age of a living patient in Zone 1	Mandatory
PAB-0024	For a deceased patient, display the date of death and the age at death in Zone 1	Mandatory
PAB-0025	Display as much of the address as possible in a single line, in the title of the first section in Zone 2, displaying an ellipsis to show incomplete display of the address	Mandatory
PAB-0026	Display the full address including the postcode, in the first section of the expanded Zone 2	Mandatory
PAB-0027	Precede the full address with the label "Usual address" or "Temporary address" as appropriate	Mandatory
PAB-0028	Display as much of a single phone number as possible in a single line, in the title of the second section on Zone 2, displaying an ellipsis to show incomplete display of the phone number	Mandatory
PAB-0029	Display contact numbers and email addresses in the second section of the expanded Zone 2, in the following order: Home, Work, Mobile, Email	Mandatory
PAB-0030	Precede each contact number and email address with the label "Home", "Work", "Mobile", or "Email", as appropriate	Mandatory
PAB-0031	Optionally, display allergy propensity information in Zone 2 of the Patient Banner	Recommended
PAB-0032	Reserve the fifth section of Zone 2 for the display of optional allergy propensity information	Mandatory

Table 5: Guidance – Information Groupings

2.4.2 Rationale

This guidance increases patient safety by:

- Ensuring that the process of identifying patients and associating them with their respective records is based upon a set of data that is organised according to a consistent and logical set of principles
- Displaying information in consistent zones, so the user is able to quickly recognise and distinguish between key data items

- Displaying information in a consistent order, so the user is better able to interpret the text field values and correlate them with other patient information screens
- Reflecting the order of information used by most clinicians in patient identification and verification; by displaying the patient name, the most important data item is emphasised
- Enabling detailed information to be revealed in expandable sections, for example, full address and allergy propensities

User feedback indicated that allergy propensity was the most important set of supplementary information that should be displayed in the Patient Banner as this information is not necessary for patient identification but should be known by staff dealing with a patient.

2.5 Data Labels and Values

This section defines the labels that must be used alongside each data item in the Patient Banner, and the titles that must be used for the sections in Zone 2. Additionally, the visual rendering of the labels and the corresponding data items is described. The aim of this guidance is to ensure that users see a Patient Banner that is labelled, styled and formatted consistently across all applications that need to display a Patient Banner.

Furthermore, it is recognised that users may want to access more information in the patient record than is displayed in the Patient Banner, for example, to check when an item was last updated. Users may also require definitions for items in the Patient Banner. This section provides guidance on both these aspects.

2.5.1 Guidance

ID	Guideline	Status
PAB-0033	Precede the date of birth with the label “Born”	Mandatory
PAB-0034	When displaying the age of a living patient, place it in parentheses immediately following the date of birth, and without a label	Mandatory
PAB-0035	Precede the gender with the label “Gender”	Mandatory
PAB-0036	Precede the patient identification number with an appropriate label, for example, “NHS No.”	Mandatory
PAB-0037	Precede the preferred name with the label “Preferred name”	Recommended
PAB-0038	Precede the date of death with the label “Died”	Mandatory
PAB-0039	Precede the age at death with the label “Age at Death”	Mandatory
PAB-0040	Precede the address displayed in the title of the first section in Zone 2, with the label “Address”	Recommended
PAB-0041	Precede the single phone number displayed in the title of the second section in Zone 2, with the label “Phone and email”	Recommended
PAB-0042	Do not add a colon after the label text	Mandatory
PAB-0043	Do not include unnecessary punctuation in a label	Recommended
PAB-0044	Display labels in the style given to label text	Mandatory
PAB-0045	Display values in the style given to data text	Mandatory
PAB-0046	Give more emphasis to the value text style relative to the label text style	Mandatory
PAB-0047	For each label in Zone 1, provide a definition and a means to access the definition, for example, by a tooltip	Recommended
PAB-0048	Provide a means to access the record for all data items in Zone 1	Recommended

Table 6: Guidance – Data Labels and Values

2.5.2 Examples of Correct Usage

Figure 8 to Figure 12 provide examples of how data labels and values could be displayed in the UK National Health Service.

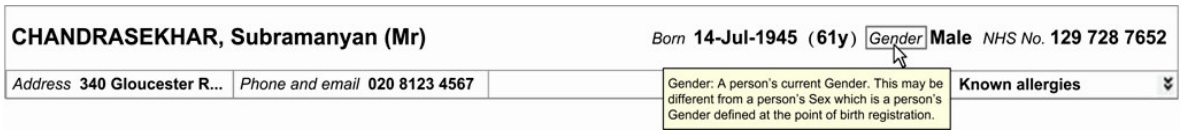

Figure 8: Example of the Display of a Definition for Gender by a Tooltip

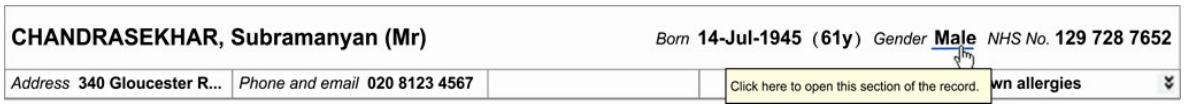

Figure 9: Example of the Display of a Means to Access the Record for Gender

Figure 10: Example of the Display of a Definition for a Patient Identification (NHS) Number by a Tooltip

Figure 11: Example of the Display of a Means to Access the Record for Patient Identification (NHS) Number

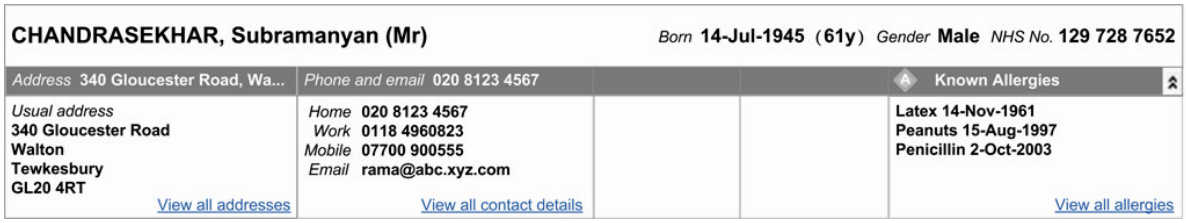

Figure 12: Example of the Display of Labels in Zone 2

2.5.3 Rationale

User feedback indicated that the labels “Born”, “Died” and “Preferred name” were seen as most suitable for the date of birth, date of death and preferred name respectively. For example, “DoB” and “DoD” were determined to be hard to differentiate, especially, as some screen readers read aloud “DoB” as “dob”.

To guide the user’s eye to relevant information, the font size and weight must be chosen so more visual emphasis is given to data values than to their corresponding labels. Data values may, therefore, be rendered in, for example, a larger font size or with greater weight than the corresponding labels to help users locate the required information efficiently. The corresponding data text style and label text style are not specified here but are left to the designers of software applications to choose.

The label “Gender” must be displayed rather than “Sex” as, for the patient-identification task, the patient’s current gender classification is more relevant than that recorded at birth.

For a living patient, the patient’s age is displayed in parentheses and a label is not included as displaying the actual age alongside the date of birth makes the value self-explanatory. In addition, the parentheses separate the age from the other text placed nearby and give the age a unique style, helping users to identify this part of the display efficiently.

For a deceased patient, there is again a need to give the age a unique style so as to ensure users do not mistake a deceased patient for one who is alive, nor vice versa. This is achieved by doing

the converse to the case of a living patient, namely, by displaying a label with the age, which is displayed without parentheses.

The display of an age value has been considered carefully for the range of patients from babies to adults, and is summarised in Table 7, with examples in Table 8. Short, that is, abbreviated units are used to save on space in the already constrained Patient Banner. Additionally, only two units are used, a lower and an upper unit, without any intermediate units, further economising on space without compromising the displayed value. The permitted abbreviations for the units are listed in the *Design Guidance – Time Display* **{R3}**.

Age	Lower Unit	Higher Unit
< 2 hours	Minutes	Minutes
< 2 days	Hours	Hours
< 4 weeks	Days	Days
< 1 year	Weeks	Days
< 2 years	Months	Days
< 18 years	Years	Months
>= 18 years	Years	Years

Table 7: Units to be Used for Displaying a Patient's Age

Age	Lower Unit	Higher Unit	Display
1 hour 30 minutes	Minutes	Minutes	'90min'
1 day 2 hours 5 minutes	Hours	Hours	'26hrs'
3 days 17 hours 7 minutes	Days	Days	'3d'
27 days 5 hours 2 minutes	Days	Days	'27d'
28 days 5 hours 2 minutes	Weeks	Days	'4w'
29 days 5 hours 2 minutes	Weeks	Days	'4w 1d'
1 year 1 day 5 hours	Months	Days	'12m 1d'
1 year 8 days 5 hours	Months	Days	'12m 8d'
1 year 39 days 5 hours	Months	Days	'13m 8d'
4 years 39 days	Years	Months	'4y 1m'

Table 8: Examples of the Display of a Patient's Age

Labelling the information according to the above guidance confers the following benefits:

- Users can clearly differentiate between data items **{R16}**
- Users are less likely to be confused about what certain data values represent, for example, a date on its own could be a date of birth or a date of death
- The user is able to read patient identification information in an unambiguous, consistent way wherever this information might appear

This guidance supports the need for flexibility on the part of application designers by leaving open the choice of:

- Data and label text styles
- Label definitions. By way of illustration, example definitions are shown for two labels where "Gender" is used for the patient's gender and "NHS No." Is used for the patient identification number. Definitions must be provided for all labels. For example, a definition for Gender could be "*Gender: a person's current Gender. This may be different from a person's Sex which is a person's Gender defined at the point of birth registration*" **{R14}**. For example, a definition for NHS number, used in England and Wales in the UK is: "*A ten-digit number used to identify a person uniquely within the NHS in England and Wales*" **{R15}**
- Means to access the definitions and the record. By way of illustration, the figures show Tooltips, however the definitions could be displayed in any other suitable form

2.6 Displaying the Patient Name

This section provides guidance on displaying the elements that constitute the patient name.

2.6.1 Guidance

ID	Guideline	Status
PAB-0049	Display the patient name elements and the title in the following order: family name, given name, title	Mandatory
PAB-0050	Do not include labels for the patient name elements and the title	Mandatory
PAB-0051	Display a comma after the family name	Mandatory
PAB-0052	Display the title in parentheses	Mandatory
PAB-0053	Display the patient's family name in upper case and the patient's given name and title in title case	Mandatory
PAB-0054	Display the patient's preferred name, if available, immediately below the family name	Mandatory

Table 9: Guidance – Displaying the Patient Name

2.6.2 Rationale

Identifying and then interpreting the patient's name correctly is a very frequent user task and is clearly a vital requirement for patient safety. This guidance promotes task efficiency by giving the elements of the patient's name a clear and consistent emphasis. Furthermore, user feedback showed that the elements of a patient's name were always identified correctly by users, hence a label need not be provided for the elements of a patient's name.

Clinical applications must be capable of displaying all the elements of patient names, in full. The family name and the given name are both crucial for correct patient identification, and must therefore be displayed without truncation.

2.7 Patient Banner for a Deceased Patient

This section provides guidance on the composition and visual rendering of the Patient Banner of a deceased patient.

2.7.1 Guidance

ID	Guideline	Status
PAB-0055	For a deceased patient, use a background area for Zone 1 in which both the colour and the pattern are substantially different from those used for a living patient	Mandatory
PAB-0056	The choice of both background colour and pattern must be such as to differentiate the Patient Banner of a deceased patient from that of a living patient, on all display devices, including, but not limited to, desktop monitors and projected images	Mandatory
PAB-0057	Display the date of death along with its label	Mandatory
PAB-0058	Display the date of death below the date of birth	Mandatory
PAB-0059	Display the age at death, preceded by its label, immediately after the date of death	Mandatory
PAB-0060	Display the age at death without parentheses	Mandatory

Table 10: Guidance – Patient Banner for a Deceased Patient

2.7.2 Examples of Correct Usage

Figure 13, taken from the UK National Health Service, illustrates how the Patient Banner could look when displaying the record for a deceased patient.

Figure 13: Example of a Patient Banner for a Deceased Patient

> **Note**
>
> Readers are advised to view this document on a monitor as the rendering of the background shading in many figures may not be sufficiently clear in a printed document.

2.7.3 Rationale

Applying the above guidance confers the following benefits:

- Users can easily recognise when they are viewing the record of a deceased patient; the Patient Banner is substantially different from that of a living patient, and a user will not fail to recognise this even without reading the contents of the Patient Banner
- Users who are colour-blind are fully supported as the guidance requires that a pattern be used in addition to any change in background colour
- Enquiries from relatives can be dealt with more sensitively

2.8 Alignment of Information

This section describes the different ways of presenting information in the Patient Banner and focuses on the layout of the display in Zone 1. It deals particularly with when single and two-line displays should be used and how these should be aligned. In Zone 1, there is a finite set of different combinations of information that must be considered, depending on the information available in the patient record. For example, when a patient's preferred name is available, it must be displayed in a fixed position. Similarly, when a patient has died, the age at death must be displayed in a fixed position.

2.8.1 Guidance

ID	Guideline	Status
PAB-0061	Display the patient's preferred name, if available, immediately below the given name, with both items left-aligned	Mandatory
PAB-0062	When a patient's preferred name is not available, the patient's name must be centred vertically and left-aligned in Zone 1	Mandatory
PAB-0063	For a deceased patient, display the data labels and values corresponding to the date of death and age at death in that order, immediately below the label corresponding to the date of birth, with both the date labels being left-aligned	Mandatory

Table 11: Guidance – Information Alignment

2.8.2 Examples of Correct Usage

Examples of how the guidance could be used, taken from the UK National Health Service, are illustrated in Figure 14 to Figure 17.

Figure 14: Example Display For a Living Patient: Preferred Name Not Known

Figure 15: Example Display For a Living Patient: Preferred Name is Known

Figure 16: Example Display For a Deceased Patient: Preferred Name Not Known

Figure 17: Example Display For a Deceased Patient: Preferred Name is Known

2.8.3 Rationale

Information in the Patient Banner must be displayed in a uniform manner so consistency is achieved across the range of clinical applications and care settings. This will help users find information reliably, repeatedly and efficiently.

2.9 Displaying Allergy Propensities

This section provides guidance on the title and content of the fifth section of Zone 2 of the Patient Banner, namely the section devoted to the optional display of allergy propensity information.

2.9.1 Guidance

ID	Guideline	Status
PAB-0064	Use one of the following labels in the title for the Allergies section: “Known allergies”, “No known allergies”, “Allergies not recorded”, and “Allergies unavailable”	Mandatory
PAB-0065	Display each allergy propensity in the expanded section in Zone 2, along with the date when the record of that propensity was last updated	Mandatory
PAB-0066	Provide a means to enable the user to view the section of the record containing Allergy propensity information, for all instances when the section title is one of: “Known allergies”, “No known allergies”, or “Allergies not recorded”	Mandatory
PAB-0067	Emphasise the label “Known allergies” in relation to the other permitted labels	Mandatory
PAB-0068	Display the labels “Known allergies” and “No known allergies” in data text style	Mandatory
PAB-0069	Precede the label “Known allergies” with a unique icon that gives the label greater emphasis	Mandatory
PAB-0070	Precede the labels “No known allergies” and “Allergies not recorded” with a unique icon that gives the label reduced emphasis	Mandatory
PAB-0071	Display the labels “Allergies not recorded” and “Allergies unavailable” in label text style	Mandatory
PAB-0072	Precede the label “Allergies unavailable” with a unique icon that gives the label reduced emphasis and that indicates allergies are not available	Mandatory

Table 12: Guidance – Allergy Propensities

2.9.2 Examples of Correct Usage

Examples of how the guidance could be used, taken from the UK National Health Service, are given in Figure 18 to Figure 20

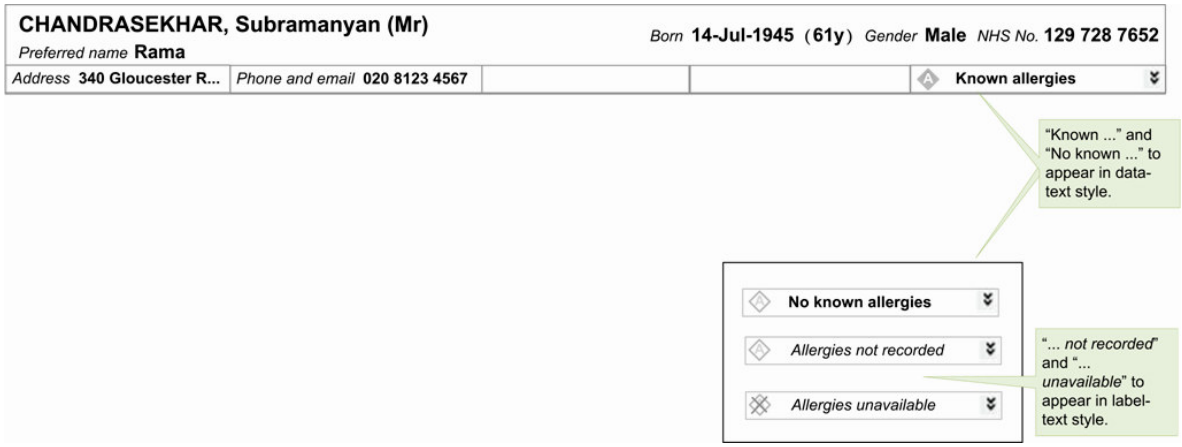

Figure 18: Example Displaying Allergy Propensity Information in the Collapsed Zone 2

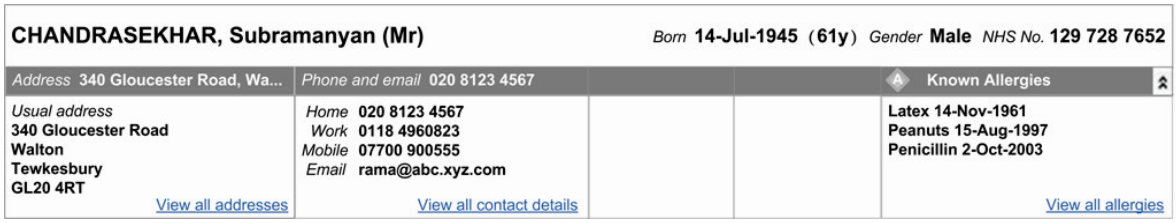

Figure 19: Example Displaying Allergy Propensities in the Expanded Zone 2

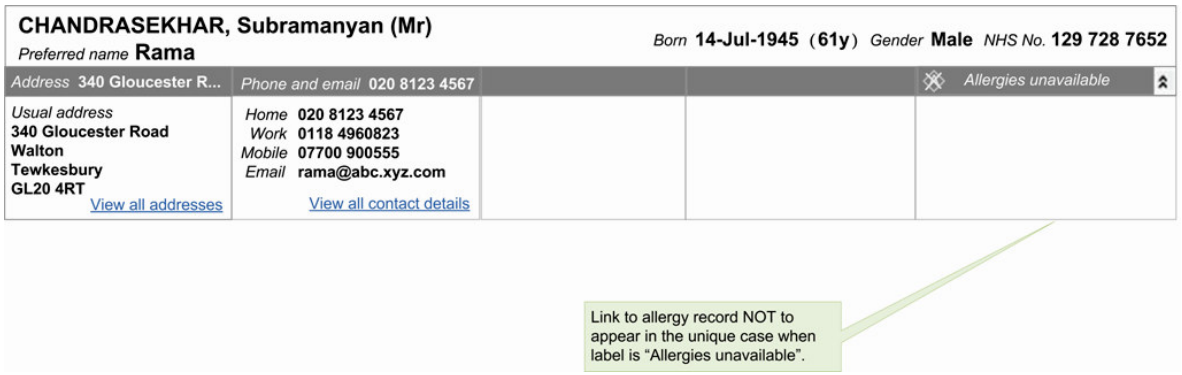

Figure 20: Example Displaying Allergy Information When None is Available

2.9.3 Rationale

The presentation of allergy information is a contentious issue. For example, clinical opinions differ on whether displaying a summary of allergy propensity improves patient safety, even though displaying an allergy summary is common practice in acute care on the paper records. Additionally, there is an issue of patient confidentiality, namely, whether such information should be displayed in the Patient Banner which is otherwise restricted to the display of non-clinical demographic data. Finally, some users may consider entirely different information categories, such as 'Risks', to be more important. This guidance reflects these concerns by:

- Demoting the display of allergy propensity information (by putting it in a less prominent position, namely in Zone 2 instead of in Zone 1)
- Specifying that access to allergy propensity information is dependent on the user's role, as per PAB-0008, (albeit it may increase the complexity which applications will have to handle)
- Enabling users who may distrust summary information to access the full record (via the link 'View all allergies' shown in Figure 19)
- Allowing clinical applications to omit the display of allergy information, (by making Guideline PAB-0031 'recommended' instead of 'mandatory')
- Leaving sections 3 and 4 of Zone 2 available for the display of other information, such as 'Risks'

The label "Allergies unavailable" is to be displayed only in those cases where a clinical application is not capable of displaying allergy information, or when it does not have access to that part of the record.

The label "Allergies not recorded" is to be displayed when, upon accessing the record, it is found that the record holds no data relating to allergy propensities.

The label "No known allergies" is to be displayed only when the patient has no known allergy propensities, that is, when the patient record contains a definitive statement by a clinician to that effect.

Finally, the label "Known allergies" indicates information on allergies that are available, and this information is displayed in the section when Zone 2 is expanded.

User feedback found that abbreviations for values such as “Allergies unavailable”, were liable to be misinterpreted and therefore abbreviations should not be used here.

User feedback also supported having a link from the allergy propensity section in Zone 2 to the section of the patient record containing fuller allergy propensity information.

As described in 2.5.3, details of the label text style and data text style are not provided in this guidance. The illustrations in Figure 18 give an indication of the relation between these text styles, and the relation between the three icons to be used with the label.

3 Document Information

3.1 Terms and Abbreviations

Abbreviation	Definition
NHS	National Health Service
NPSA	National Patient Safety Agency
PDA	Personal Digital Assistant
RFID	Radio Frequency Identification
UI	User Interface

Table 13: Terms and Abbreviations

3.2 Nomenclature

This section shows how to interpret the different styles used in this document to denote various types of information.

3.2.1 Body Text

Text	Style
Code	`Monospace`
Script	
Other markup languages	
Interface dialog names	**Bold**
Field names	
Controls	
Folder names	Title Case
File names	

Table 14: Body Text Styles

3.2.2 Cross References

Reference	Style
Current document – sections	Section number only
Current document – figures/tables	Caption number only
Other project documents	*Italics* and possibly a footnote
Publicly available documents	*Italics* with a footnote
External Web-based content	*Italics* and a hyperlinked footnote

Table 15: Cross Reference Styles

3.3 References

Reference	Document	Version
R1.	Right Patient, Right Care, NPSA http://www.npsa.nhs.uk/EasySiteWeb/GatewayLink.aspx?alId=3234	2004
R2.	Design Guidance – Date Display	3.0.0.0
R3.	Design Guidance – Time Display	3.0.0.0
R4.	Design Guidance – Sex and Current Gender Input and Display	2.0.0.0
R5.	Design Guidance – Patient Identification Number Input and Display	2.0.0.0
R6.	Design Guidance – Address Input and Display	2.0.0.0
R7.	Design Guidance – Telephone Number Input and Display	2.0.0.0
R8.	Design Guidance – Accessibility Checklist	1.0.0.0
R9.	Design Guidance – Accessibility Principles	1.0.0.0
R10.	Koyani et al, Research-Based Web Design & Usability Guidelines. U.S. Department of Health and Human Services http://www.usability.gov/pdfs/guidelines.html	2006
R11.	NHS Data Model and Dictionary http://www.datadictionary.nhs.uk/	Version 3
R12.	Tidwell J, Designing Interfaces www.designinginterfaces.com	First Edition
R13.	Standardising wristbands improves patient safety, NPSA Safer Practice Notice http://www.npsa.nhs.uk/EasySiteWeb/GatewayLink.aspx?alId=5346f	2007
R14.	UK Government Data Standards Catalogue – Person Gender Current http://www.govtalk.gov.uk/gdsc/html/noframes/PersonGenderCurrent-2-0-Release.htm	
R15.	UK Government Data Standards Catalogue – NHS Number http://www.govtalk.gov.uk/gdsc/html/noframes/NHSnumber-2-0-Release.htm	
R16.	Wright, P. C. Jansen, JC. Wyatt. How to limit clinical error in interpretation of data Lancet 352: 1539-43 http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=PubMed&cmd=Retrieve&list_uids=9820319&dopt=Citation	1998

Table 16: References