

SHOW - Style Guide and Quality Assurance Standards

0 Metadata

Name	Scheme	Content
DCTERMS.audience		Public
DC.creator		SHOW team
DC.Date.Created	W3CDTF	2003-05-28
DC.Date.Modified	W3CDTF	2003-05-28
DC.Date.Issued	W3CDTF	
DC.Description		Guidelines for NHSScotland website authors on the standard for website interfaces. Guidance on best practice for web authoring
DC.Identifier	SHOW	No document reference
DC.Identifier	URI	
DC.Language	ISO 639-2/B	eng
DC.Publisher		Scottish Health On the Web (SHOW) mailto:show@isd.csa.scot.nhs.uk
eGMS.Status		v2.21 - published recommendation
DC.Rights.Copyright		Crown Copyright 2003
eGMS.Subject.Category	GCL	Information and communication technology
eGMS.Subject.Category	MESH	Information Management (L01.399)
eGMS.Subject.Keyword		NHSScotland, SHOW, Corporate, Identity, standard, guidelines, style, guide, quality, assurance, best, practice
DC.Title		Style Guide and Quality Assurance Standards

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2 Executive Summary

The visual appearance of NHSScotland websites is governed primarily by the NHSScotland Corporate Identity, although some requirements of an NHSScotland website interface are set by Scottish Health on the Web. This document clarifies the standard for an NHSScotland website, and contains recommendations and quality criteria for quality assurance.

Guidelines included cover naming conventions, QA and sign-off procedures, document structuring and stylistic conventions. Where appropriate, references to standards documents and other authoritative sources of information are made. Guidelines cover the structure and presentation of individual web pages and how pages should be structured to form complete websites.

2.1 Comments and changes to this document.

This represents the first release of a document which, it is hoped, will be continuously revised and updated in the light of developments in WWW technology, in response to the e-government guidelines and SHOW user comments. Its ultimate goal is to document a consensus among SHOW participants on best practice in WWW development. User comments are actively sought and will form the basis for future amendments and revisions of this document. Comments should be sent to the SHOW team at:

show@isd.csa.scot.nhs.uk

It is expected that local standards and procedures will be developed to undertake the management of material on SHOW sites. Where this is done, it is requested that a copy be sent to the SHOW team to allow these to be incorporated into this document where appropriate.

3 Glossary and Abbreviations

Browser

A software application which is used to view information on the world wide web. Typically a browser will make requests to an HTTP server for HTML files and display the results on screen. Many browsers also allow graphics, audio and video files to be viewed and support a variety of other protocols in addition to HTTP e.g. FTP and GOPHER.

CM

Configuration Management

CGI

Common-gateway Interface. This is a universally supported interface between an HTTP server (web server) and add-on software applications.

CSS

Cascading style sheets. Style sheets provide a mechanism for controlling the appearance of HTML marked-up documents.

DTD

Document Type Definition. A DTD is the formal means of specifying the HTML 'language'

FTP

File Transfer Protocol

HCI

Human Computer Interaction

HTTP

HyperText Transfer Protocol

HTML

HyperText Mark-up Language

Tags

Mark-up languages such as HTML use a system of tags to present information on that structures documents. Typically, tags are expressed as start tags which take the form `<element attributeName="value">` and end tags which take the form `</element>`.

WAI

Web Accessibility Initiative

WWW

World wide web

4 Introduction

4.1 Web based information services

It is useful to think of two distinct types of material/information service being made available over WWW, namely Websites and Publications.

Websites are collections of resources and services that are continually under development (with change control potentially being on a page by page basis). A website is the main access point to the information being made available by an organisation. It contains collections of assets in various formats, e.g. text, images, audio, video. The information it holds might encompass news items, press releases, "leaflet" type information, DB query interfaces, and collections of the publications produced by an organisation.

Whereas websites are collections of resources, publications are "atomic" entities in their own right (with version/edition numbers covering the document as a whole). Making publications available on the WWW will normally involve developing a website to contain and index them.

Providing information resources on the WWW will involve two important steps:

1. Defining what information is going to be made available and how it will be arranged. This is the starting point in developing a website
2. Integrating HTML (or other Web format) authoring into the existing publication lifecycle.

Developing this process ensures that publication of new content can become a natural part of existing information flows.

It is important to bear in mind that as a container of resources, a website is never really a "finished" thing. In a successful site, new publications, links and pages are continually being added and old, no longer relevant material, being removed. As such, a firm recommendation for SHOW sites is that they go live as early as possible, if necessary with parts of the site comparatively unpopulated with information. This has the advantage that as the site develops, it appears to be a "live" service to its users since new material is added on a regular basis. Delaying launch until everything is fully polished risks going live with information that is already out of date.

4.2 How this document is structured.

Aside from this introduction, the document is divided into three main parts.

The first part contains guidelines on the production of the individual web pages which make up a website or publication. These guidelines cover:

- the structure of pages,
- guidelines on the user interface format of SHOW sites
- recommendations for ensuring that pages are viewable by anyone regardless of physical ability or their choice of browser
- recommendations for ensuring that pages comply with basic HCI usability guidelines for the user interface

The second part contains guidelines on the structure of SHOW Websites. It covers:

- specific guidance on the structuring of specific types of common SHOW sites, namely hospitals/trusts, health boards and general practices.

The third part of the document outlines a strategy for the basic quality assurance of information included on a SHOW site.

5 Guidelines for Web Pages

This section includes definitions and guidelines for the creation of SHOW compliant HTML pages. The recommended HTML version for SHOW pages is either HTML 4.01 or XHTML 1.0 and DTDs can be referred to at:

HTML 4.01:

<http://www.w3.org/TR/html401/struct/global.html#h-7.2>

XHTML:

<http://www.w3.org/TR/xhtml1/#strict>

The appropriate document type definitions which should appear at the head of each document are:

HTML 4.01:

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01//EN"  
  "http://www.w3.org/TR/html4/strict.dtd">
```

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN"  
  "http://www.w3.org/TR/html4/loose.dtd">
```

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Frameset//EN"  
  "http://www.w3.org/TR/html4/frameset.dtd">
```

(Note - A rather obscure peculiarity of Netscape 6 causes the browser to add extra space between table cells in some instances, which can break page formatting for pages that use tables to define page layout. This can be remedied by using the following !DOCTYPE definition for the web page)

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN"  
  "http://www.w3.org/TR/1999/REC-html401-19991224/loose.dtd">
```

XHTML:

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN"  
  "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">
```

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"  
  "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
```

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Frameset//EN"  
  "http://www.w3.org/TR/xhtml1/DTD/xhtml1-frameset.dtd">
```

In general the strict and frameset DTDs should be used. Only pages which define framesets will require the Frameset DTD.

5.1 Standard Document Structure

The majority of HTML documents have many elements in common. All, for example, should have a title, a document head and a document body. Using a default ordering for these features will make documents easier to manage and will make it easier, for example, to develop search applications which are compatible with SHOW documents as a whole. In some cases, web editing software may have its own ideas as to where tags should be placed Hot Metal, for example, likes to have client side image maps in the <body> of a document. Wherever practicable, however, the default style should be used.

The following ordering is proposed:

Doc Type Declaration (e.g. <!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01//EN" "http://www.w3.org/TR/html4/strict.dtd">)

Head

Title

MetaTags (see Document Meta-Information below) **http-equiv** type meta tags should precede **name**, **content** type meta tags.

Style Information (in line styles should be used sparingly - linking to a style sheet is preferred e.g.

```
<link rel="stylesheet" href="stylesheet.css" type="text/css" media="screen">
```

JavaScript, ASP functions etc (except of course for inline JavaScript)

Client Side Image Maps

End Head

Body

Main Page content - The XHTML 1.0 DTDs should be used as standard on SHOW web sites.

Default Footer Information

Text list of main sections of site centred and separated by |
character e.g. Section1 | Section2 | Section 3

End of Default Footer Information

End Body

End HTML

5.1.1 Document Meta-Information

Meta information is information which describes a document in some way. It should be included as part of all HTML documents, embedded as <meta> tags in the document <head> section. Two types of information should be included,

- 1) e-GMS meta information (mandatory meta data, required by the **e-Government Metadata Standard**)
- 2) information to support indexing by internet search engines.

An additional content type **meta** tag may also be included, as well as any other **http-equiv** type meta tags:

```
<meta http-equiv="Content-Type" content="text/html; charset=iso-8859-1">
```

If included, **http-equiv** type should be the first **meta** tags in a document.

5.1.1.1 e-GMS meta information

The Office of the e-Envoy (OeE) has issued the e-Government Metadata Standard (e-GMS) which sets out guidance on metadata that government websites must follow. It is part of the e-Government Interoperability Framework (e-GIF) which is **mandated** across all government information systems. Therefore, eGMS meta information must be included on all SHOW websites.

It is not possible to provide a detailed explanation of the e-GMS within this document, however you should ensure that you fully familiarise yourself with the standard by referencing it at:

http://www.govtalk.gov.uk/schemasstandards/metadata_document.asp?docnum=763.

SHOW has identified a particular subset of e-GMS meta information that is appropriate for use by SHOW websites, and within this subset, a particular meta tag can be mandatory, mandatory if applicable, recommended, or optional, according to the e-GMS. There is therefore a minimum set of required e-GMS metadata that **must** be present on all SHOW websites.

The following information provides examples of how the minimum set of mandatory e-GMS metadata can be included on a web page. Including meta information on a web page is done by including “meta” tags, in the form:

```
<meta name="property of document being described"  
      scheme="formal scheme that valid values for this  
            property can be chosen from"
```

```
content="value for this property of the document" />
```

(Note – many of the meta tags required by the e-GMS are taken from the Dublin Core, or ‘DC’ vocabulary for meta information. The Dublin Core is effectively the worldwide standard for meta information. Therefore the meta tags often describe a ‘DC standard’ property e.g. <meta name=“DC.someDCElement”... >)

accessibility meta tag

Indicates the resource’s availability and usability to specific groups. This should consist of both an assessed measure of the level of accessibility of the site by special-needs users and content-rating information indicating the levels of particular types of controversial content (eg sex, vulgar language)

Accessibility for special needs users

```
<meta name="e-GMS.accessibility" scheme="WCAG" content="Double-A" />
```

This would indicate that the level of accessibility of the page is ‘Double-A’ according to the Web Content Accessibility Guidelines scheme (WCAG) produced by the international web standards body, the w3c (World Wide Web Consortium). For a full explanation of accessibility requirements for websites, including the Web Content Accessibility Guidelines and what different ratings mean, please see:

Web Content Accessibility Guidelines 1.0 - <http://www.w3.org/TR/WCAG10/>

Content rating

Indicates the level of particular types of controversial content (eg sex, vulgar language)

```
<meta name="e-GMS.accessibility" content="(pics-1.1
"http://www.icra.org/ratingsv02.html" l gen true for
"http://www.show.scot.nhs.uk/mySite" r (cz 1 lz 1 nz 1 oz 1 vz 1)
"http://www.rsac.org/ratingsv01.html" l gen true for
"http://www.show.scot.nhs.uk/mySite" r (n 0 s 0 v 0 l 0))" />
```

This document is unable to provide a full explanation of the content rating meta tag, however it is useful to fully understand its syntax by referring to the Internet Content Rating Association (ICRA) website at:

<http://www.icra.org/>

You do not necessarily need to understand the syntax of the content rating meta tag in order to add one to your web site. ICRA provides an “ICRA label and meta data generator” that you can use to automatically produce a content rating meta tag for use on your web pages:

http://www.icra.org/_en/label/extended/

creator meta tag

An entity primarily responsible for making the content of the resource.

Try to give generic names (e.g. “my organisation Web Team”) as well as individual names in case the creator has moved on. Use as much detail as possible, such as address, telephone and email.

```
<meta name="DC.creator" content="Page author, my organisation Web Team, my organisation address, mailto:myOrganisation@somewhere.scot.nhs.uk" />
```

date.created meta tag

Use this for the date the resource was originally created. Do not confuse with Date.Issued (an optional e-GMS meta tag, not described here)

```
<meta name="DC.date.created" scheme="ISO6801" content="2003-05-30" />
```

The ‘ISO6801’ scheme requires that dates be given in the format “yyyy-mm-dd”.

identifier meta tag

A universally unambiguous reference to the resource.

```
<meta name="DC.identifier" scheme="URI" content="http://www.show.scot.nhs.uk/mysite/index.htm" />
```

This will normally be a URI (Uniform Resource Identifier – a piece of text written in a particular format that uniquely identifies the resource, similar and in many cases identical to a web address), but may be an ISBN or internal reference number.

publisher meta tag

An entity responsible for making the resource available.

```
<meta name="DC.publisher" content="Name of my organisation, address, email, telephone" />
```

Provide a name, address, email and telephone of the organisation responsible for putting the information on SHOW.

rights.copyright meta tag

The copyright of the resource (usually Crown Copyright). This is not strictly required by the e-GMS standard, however it is required by SHOW.

```
<meta name="DC.rights.copyright" content="Crown Copyright year(s) of  
copyright eg 2000-2003" />
```

subject.category meta tag

A defined topic of the content of the resource.

```
<meta name="eGMS.Subject.Category" scheme="GCL" content="NHS Performance"  
/>  
<meta name="eGMS.Subject.Category" scheme="MESH" content="C14.280.647.500"  
/>
```

There **must** be at least one subject category from the Government Category List (GCL) at:

<http://195.224.227.150/gcl/content/default.asp>

It is recommended that Medical Subject Heading (MeSH) term(s) be provided as well.
See:

<http://www.nlm.nih.gov/mesh/MBrowser.html>

Distinguish between these classification schemes using the 'scheme' attribute.
SHOW will be providing lookup tools for help in classification of resources.

title meta tag

A name given to the resource.

```
<meta name="DC.title" content="title of web page" />
```

The title should correspond to the HTML <title> tag. It should not replace the <title> tag, but re-iterates it in a form that can be independently understood as the 'title' according to the specific DC definition of a 'title'. It should be brief and meaningful, and oriented towards the public.

Summary of strictly required e-GMS meta information

The following block of meta information provides an example of the minimum required set of e-GMS metadata required on every relevant page of a SHOW website, including SHOW's minimum recommendations:

```
<meta name="e-GMS.accessibility" scheme="WCAG" content="Double-A" />
<meta name="e-GMS.accessibility" content="(pics-1.1
"http://www.icra.org/ratingsv02.html" l gen true for
"http://www.show.scot.nhs.uk/mySite" r (cz 1 lz 1 nz 1 oz 1 vz 1)
"http://www.rsac.org/ratingsv01.html" l gen true for
"http://www.show.scot.nhs.uk/mySite" r (n 0 s 0 v 0 l 0))" />
<meta name="DC.creator" content="Page author, my organisation Web Team,
my organisation address, mailto:myOrganisation@somewhere.scot.nhs.uk" />
<meta name="DC.date.created" scheme="ISO6801" content="2003-05-30" />
<meta name="DC.identifier" scheme="URI"
content="http://www.show.scot.nhs.uk/mysite/index.htm" />
<meta name="DC.publisher" content="Name of my organisation, address,
email, telephone" />
<meta name="DC.rights.copyright" content="Crown Copyright year(s) of
copyright eg 2000-2003" />
<meta name="eGMS.Subject.Category" scheme="GCL" content="NHS Performance"
/>
<meta name="eGMS.Subject.Category" scheme="MESH"
content="C14.280.647.500" />
<meta name="DC.title" content="title of web page" />
```

5.1.1.2 Support for Indexing

The minimum set of meta tags which should be included to support document indexing are the "keywords" and "description" meta-tags. These are relatively self explanatory and are a key means of assisting the main web search engines in listing a website. The tags should be used "honestly" i.e. their content should not be tailored solely to attempt to manipulate listings on search engines, for example, by repeating the same keyword multiple times (some tweaking is acceptable). Many search engines can detect this and will ignore such pages as a result.

The following examples show possible keyword and description tags for SHOW. Although the description content makes sense it does not read particularly "naturally" this is because key terms are used repeatedly to "tweak" search engine ratings.

```
<meta name="keywords" content="SHOW, scottish health on the web, health information, medical
information, medical guidance, health care information services, scottish health, NHS, scotland, nhsscotland,
internet health information, clinical information, public health information">
```

```
<meta name="description" content="This is the front page of the SHOW health information index for
Scotland. The page provides an index to a variety of health information accessible to Scottish citizens
including resources for health professionals , the general public and users of Scottish health services. SHOW
```

is a federated service which links to Scottish NHS Boards, National Health Trusts, Scottish General Practitioners and related professional and health care related organisations">

5.1.2 Stylesheets

In structural document mark-up languages (of which HTML is one), a distinction is made between the structure of a document and the way that structured is presented (or *rendered*). In HTML, this distinction has become somewhat blurred with some tags that control rendition (e.g. , <u>,) and others which describe the structure of a document (e.g.<p>, <table>, <h1>,). For example, the tag pair <p> </p>, enclose a paragraph and as such describe how the document is structured but not how it should appear on screen. In contrast, the tag pair (which specify bold text) control how text should look. However, separating the two elements of a document is desirable for a number of reasons: -

- If pages link to a single stylesheet, it is easy to change the appearance of the whole site by simply changing one file
- Separating the structure from the content of a document allows a simpler set of HTML to be used in documents - this has positive implications when it comes to accessibility and compatibility with different browsers
- Separate stylesheets can be used for different rendition media, e.g. Braille-readers, audio browsers and printed pages.

The mechanism by which this is done is through cascading stylesheets (CSS). A detailed introduction to and discussion of CSS is given at the WWW Consortium site (<http://www.w3.org/Style/CSS/>).

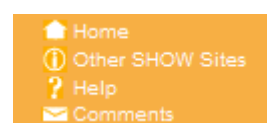
5.2 SHOW Page Layout

A common style for NHSScotland websites is defined by the NHSScotland corporate identity:

<http://www.show.scot.nhs.uk/nhsscotlandci/>

In addition to the guidelines specified in the corporate identity, SHOW specifies additional requirements for websites:

Inclusion of the SHOW toolbar on web pages



The SHOW toolbar (pictured left), should be included at the top left corner of each web page. This consists of a 'home' button, an 'other SHOW sites' button, a help button and a comments button.

The '*HOME*' button returns to the first page of the current site (generally home.htm).

The '*other SHOW sites*' button provides a link to the first page of the SHOW index site (<http://www.show.scot.nhs.uk>).

The '*HELP*' button links to pages which give user guidance on how to operate various features of the site. SHOW has a help page that may be appropriate to use as the page that this button links to, at <http://www.show.scot.nhs.uk/help/showhelp1a.htm>.

The '*COMMENTS*' button allows users to direct email comments to those responsible for a site.

The Navigation Bar

The NHSScotland corporate identity indicates that links to the main sections of a site can be placed either within the 'caring device' (the 'curve' that forms part of the page banner), or down the left hand side of the screen. However links to the main sections of a site should be placed in a navigation bar that occupies the left hand side of the screen. If a 'search' box is included on the home page, then it should be placed directly under the links to the main site sections. At the bottom of a navigation bar that occupies the left hand side of the screen, a message listing the date of the last update to the website may be shown.

Main document body

Users can implement their own design styles in this part of the screen and can include whatever features they wish to support such as JavaScript or Java applications, CGI programmes and clickable maps. Reference should be made to the following sections for guidance on the design of pages for the main document body.

The main document body is implemented in the "home" frame of a SHOW frameset. These are independent HTML documents in their own right meaning that they can easily be included in a non-frames based version of the site with little additional work required.

If the website is implemented using frames, then to allow easy support for non-frames based browsers, the content part of the page should contain redundant links to the main sections of the site in a page footer area (see Standard Document Structure). The footer may be positioned not to be visible without scrolling at the target screen resolution (800 x 600) if it interferes with the preferred design of the page. Authors should also include a <noframes> element at the end of each <frameset>

5.3 Accessibility

The fundamental aim of SHOW is to make Scottish health information as widely available to its target audience as possible. This means that site producers should be aware of and

cater to users with disabilities and make their sites as accessible as possible to users who may be unable to use "standard" web browsers. The web accessibility initiative (WAI) has produced draft guidelines on accessibility (<http://www.w3c.org/WAI/>) that form the basis for the SHOW accessibility policy and which should be adhered to wherever practically possible. The e-government framework also makes a number of recommendations regarding content and accessibility (see specifically: [http://www.e-envoy.gov.uk/oeo/oeo.nsf/sections/frameworks-egif5/\\$file/e-GIF_v5_part2.pdf](http://www.e-envoy.gov.uk/oeo/oeo.nsf/sections/frameworks-egif5/$file/e-GIF_v5_part2.pdf), p.17, table 5). Testing and QA should take these accessibility issues into account (see section 7).

From the HTML author's point of view the main recommendations for compatibility are as follows:

- 1) Use style sheets wherever possible for formatting pages. HTML tags should be used mainly for describing the structure of a document and the use of tags which control the appearance of a document (e.g. , and <u> tags, etc.) should be avoided. This allows the HTML mark-up of a document to be simplified, makes them more portable and gives the user more control over how material is rendered. For a discussion of the issues involved see, for example <http://www.w3c.org/Press/1998/CSS2-REC-fact>
- 2) Some users do not or cannot view graphics, so ensure that any images include an **alt** attribute which describes the image. 'alt' text must sufficiently replace the information supplied by the graphics used. Where images are used as bullets in a list, a suitable **alt** attribute is "o" or "-". For example, an image of the chief executive of a trust might be . Text-based browsers which cannot show the image will show the **alt** text instead. Where a longer description of an image is required, the **longdesc** attribute should be used.
- 3) Imagemap navigation methods should be used sparingly, and a text alternative must be supplied. Images maps should always be client side (W3C WAI guidelines checkpoint 9.1).
- 4) Avoid the use of JavaScript mouse and roll overs for the provision of core information
- 5) Where possible avoid the use of tables for page layout – use stylesheet positioning instead.
- 6) Provide a more detailed plain text description of graphics which present important information (e.g. charts, tables, and diagrams)¹
- 7) Use the *title* attribute of the <a> element to provide more information about images used as links. For example:

¹ The new *longdesc* attribute of images is one possibility for this.

```
<a href="HEBS.htm" title="Search HEBSWeb Web Links Database">
</a>
```

- 8) Ensure that pages are readable and usable without frames. Authors should include a `<noframes>` element at the end of each `<frameset>` - this should provide a link to the "home" frame of the `<frameset>`.
- 9) Give each frame a title - again this recommendation is helpful both for accessibility and for search engines. Using titles for each frame will allow those using audio browsers to navigate the screen more easily.

A more extensive list of recommendation is available at the W3C site and where practicable, these should also be followed.

5.4 Browser Compatibility

Although HTML itself is relatively well standardised (see <http://www.w3.org/MarkUp/>), there are wide differences in the functions and capabilities of the different web browsers available. It is clearly desirable to use as rich a set of features as possible in developing a website to provide a pleasant and powerful user interface. However, this might lead to features appearing on a website which are inaccessible other to browsers (or worse, features which cause them to crash). Appendix D: Browser Types, gives links to statistics on the variety of browsers currently available and in use. It is safe to assume that the majority of users will be using Microsoft Internet Explorer, and a minority will be using Netscape Navigator to view documents, hence a justifiable policy might be to use only features which are supported by both browsers. However, there are substantial differences in the features supported by these browsers and substantial differences between different versions of a particular browser, making even this level of common support a non-trivial task.

It is technically possible to deliver a web page to a site visitor by 'detecting' which browser the visitor is using. However a decision must be made about the extent to which duplicate pages are developed to ensure browser compatibility and accessibility. Creating two or more duplicated sets of information for an entire site will require more effort to maintain and develop and in the long run is probably not justifiable.

On the SHOW index site, the following policy has been adopted:

- offer two versions of the front page only and use multi-purpose pages for the remainder of the site. This allows more of the capabilities of the most popular browsers to be used, making for a more attractive first impression of the site, while ensuring that users of less capable browsers can still access the information.
- Use stylesheets (see above) to allow a simpler set of HTML to be used which is more compatible with HTML 3.0 (and below) capable browsers.
- Create a set of mainly text index pages to link to the other parts of SHOW. These adhere as closely as possible to WAI guidelines and contain a basic subset of HTML which will

allow the great majority of browsers to access them without problems. These will present a basic "vanilla" interface to SHOW information. Additional, more sophisticated navigation capabilities can then be offered for more capable browsers.

- Where more sophisticated features are used (e.g. JavaScript, in-line CSS) their tags will be enclosed in HTML comments tags `<!-- multi-line CSS code or JavaScript -->` so that they will be ignored by other browsers.

For JavaScript, a basic reference on JavaScript (see section References and further reading) should be used and more sophisticated DHTML features added as browsers standardise on the W3C document object model.

5.5 Usability

Although there is a defined NHSScotland/SHOW interface style (see SHOW Page Layout), this is comparatively permissive and does not attempt to define the contents of the main page area in detail. In developing content for a web site it is important to bear in mind the general concepts of usability and human computer interaction (HCI). This is a wide subject area in its own right but particular issues to be considered are:

- site structure and navigation (see section Site Structuring)
- page layout (see also section SHOW Page Layout)
- use of colour
- typefaces and legibility of information
- response times

5.5.1 Page layout

Try to minimise the amount of scrolling that the user has to do to get to the information you wish to show. This can mean breaking down information into smaller chunks so that a whole "piece" of information can be viewed on one screen. This is more important at the higher levels of a website. In some circumstances, however, you may wish to make redundant information (e.g. text links to sections of a site provided in addition to graphical navigation) only viewable through the use of scrolling.

Where multiple screens are used to present a single document, it may be worthwhile making a single file copy of that document available to facilitate the downloading and printing of the document. (Adobe Acrobat files are a good means of doing this).

The following guidelines on page layout are extracted from the Yale Guide (see References):

"Graphic embellishments such as horizontal rules, large graphic bullets, icons, and other visual markers should be used sparingly (if at all) to avoid a patchy and confusing layout. The same applies for the larger sizes of type on Web

pages. One reason professional graphic designers are so impatient with HTML is the grotesquely large type sizes displayed by most Web browsers when using the "H1" and "H2" header tags. The tools of graphic emphasis are powerful, and should be used only in small doses for maximum effect. Overuse of graphic emphasis leads to a "clown's pants" effect where everything is garish and nothing is really emphasised.

Establish a layout grid and a style for handling your text and graphics, then stick with it to build a consistent rhythm and unity across all the pages of your site. Repetition is not boring; it gives your site a consistent graphic identity that reinforces a distinct sense of "place," and that makes your site more memorable. A consistent approach to layout and navigation allows readers to quickly adapt to your design, and to confidently predict the location of information and navigation controls across the pages of your site.

If you choose a graphic theme, use it throughout your site."

5.5.2 Use of colours

Avoid the use of highly saturated colours (e.g. bright red, bright blue) as backgrounds as this can cause visual fatigue for users and will require equally saturated foreground colours to maintain legibility. Where darker backgrounds are desired for a main page body, "muddier" colours should be used to minimise eye-strain.

Lighter backgrounds with darker text are more suited to body text, with dark backgrounds and lighter text best reserved for headings². Use of dark backgrounds and light text should be kept to a minimum (e.g. only used on the front page of a site for decorative effect).

The greater the contrast between light and dark, the more legible the text - hence black on white or pale yellow is more legible than yellow on white. Different colours also focus at different depths in the eye hence use of red and blue in combination should be avoided.

The 216 color Web palette should be used wherever possible, in particular for hyperlinks and text and background colours. If possible original graphics should also be created using the Web palette.

Consider the effects of colour blindness in users and avoid the use of colour as the only means of coding important information. (~8% of males are red-green colour blind.)

5.5.3 Typefaces and font selection

Although both of the most common browsers (Internet Explorer and Netscape) and the recommendations for CSS2 offer means for downloading of fonts these schemes are not

² source: Smith & Mosier, Yale Web Style Manual -
<http://www.webstyleguide.com/index.html?/contents.html>

mutually compatible and hence their use is not recommended at the moment. It is important to bear in mind, therefore, that unless the user already has a font installed on their client system, they will not be able to view it. Fonts which it can be safely be assumed most users will have installed are: Arial, Helvetica, Times New Roman, Times, Times Roman. Usually, the browser will substitute the user defined default font (usually a Times Roman variant) if the specified font is not available but to get round this, you can use a list of fonts (e.g. font-family: Arial, Helvetica, san-serif). The browser will first attempt to use the left most font on the list and carry on down the list until it finds one of the fonts specified.

The font classes *serif* and *sans-serif* can be used as catch-alls in a list to specify any available font of that type.

The other main issue with typefaces is legibility. In order to make it easier for users to read on-screen information a number of factors should be considered:

1. For a nominal viewing distance of 18 inches, the minimum recommended size for a font is 0.08 inch (just slightly less than 1/16th of an inch)³.
2. In contrast to printed media, at small font sizes sans-serif fonts are more legible.
3. Avoid using "fancy" type faces to convey important information (e.g. those that have extended serifs, are stencilled, shadowed or 3-dimensional, appear like hand written script or like Old English script, or are distorted to look tall and thin or wide and fat). However, these effects and styles may be used sparingly for decorative purposes. All-caps and over-use of italics should be avoided.
4. The font colour should be in contrast to the background color, to aid readability

5.5.4 Response Times

Response times in WWW sites are governed by the time it takes for the different files making up a web page to travel across an internet between HTTP server and browser. The larger these files, the more time it will take them to download and hence the slower the response to user actions. Many users will still be using 28.8K modems (or slower), and files which download in an acceptable time over a LAN might take minutes (or more) to download over such a modem.

Many of the vagaries of network travel are beyond the control of the site provider. What can be controlled, however, is the size of files which users are asked to download. The basic rule is to keep file sizes to a minimum. Text files are not usually a problem since they do not generally take up much space and even very large documents will usually be shown in part as they download, giving the user an acceptable response. Graphic, audio and video files, however, require more care to keep their relative sizes down. Where larger images are needed, warning and file sizes must be displayed, and preferably, a thumbnail image

³ source: Code 522 Documentation. Software and Automation Systems Branch, Data Systems Technology Division (DSTD) Mission Ops. & Data Systems Directorate (MO&DSD) at the Goddard Space Flight Center (GSFC)

used. Size limits are particularly important on the front page of a website - if an image takes too long to download, the user is likely to leave the site altogether.

In general a homepage total file size should not exceed 30-40k. Other, informational pages should be as efficient as possible.

6 Site Structuring

In developing a website one of the critical first steps is to decide what information should be presented and how it should be arranged. The main sections of the site should be outlined and a navigation hierarchy designed. Multiple possible navigation routes can be implemented on a site but you should have one main information structure in mind. The top level sections will be linked to via the main navigation links on the home page.

SHOW has developed a set of common top level section headings for specific types of site, namely NHS Boards, Trusts and General Practices. It is expected that all NHS Board areas will aim towards one central website that embodies all information previously contained within separate Board and Trust websites (if they have not already done so). However, the following suggestions for the top level headings of board and trust websites may be useful for you to draw upon for use in your website (whatever it may be), in order to ensure a degree of consistency across different SHOW websites. General practice websites are likely to continue to be developed on a somewhat autonomous basis, and the suggested section headings for a GP website may provide a useful complete model.

6.1 Hospitals and Trusts

For the patient / visitor.

This area covers basic patient leaflet material. Site maps, directions to the site admission procedures, general (non-clinical) facilities available such as shops and catering and visiting times for wards could be covered here.

Clinical services.

This section provides an area for information on the clinical services and facilities available in the hospital. Typically this would be the entry point to sub-sites maintained by a trust's different clinical departments. Descriptions of services available, times and locations of clinics and departmental contact details would be typical contents of this section. Specific publications produced by departments (e.g. Laboratory Handbooks) and local guidelines would also sit beneath this heading.

Rights/Comments/Complaints

This section contains information on complaints procedures including who to contact. Much of the information contained here will be common across hospitals and is mainly aimed at members of the general public.

Who works where

This section contains personnel contact details for Hospital Employees. Currently, Data Protection issues are still to be addressed and as a result, it is recommended that these details be confined to NHSNet until the situation is clarified.

Workload and statistics

This contains information on the performance and activities of a hospital. The exact contents of this section will be at the discretion of participants.

About the Trust

This section is for information about the organisational structure of the hospital. its management, its goals and mission statements, annuals reports and key contacts. This section is also appropriate as an entry point to sub-sites of non-clinical departments (finance, estates etc.).

News

This section will provide current information on the hospital including press releases, staff newsletters and employment vacancies.

6.2 General Practitioners

The following sections have been defined for general practices:

Consulting Times.

This section contains details of the practice's hours of business, consulting times and out-of-hours contact details.

Seeing your doctor

Information in this section covers procedures for registering with a practice, procedures for arranging appointments, repeat prescriptions, etc.

Special Clinics and other Services

This section provides details of specific clinics and services provided by a practice. Typical among the items of information on these services are:

- An overview of the clinic,
- Details of the type of staff operating the clinic (including links to details of the practice team).
- Times and means of making an appointment.
- Links to other relevant information as defined by the practice.
- Links to relevant health education resources.

The Practice Team

This section contains details of the staff working at the practice. Information on the practice doctors (including details of qualifying year and institution), nursing and auxiliary staff are included here. This will typically be interlinked with the details of services provided.

About the Practice

This section contains details about the on-going operation of the practice. Practice business plans, equipment levels, prescribing policies, details of links to other health providing institutions are appropriate here.

Links

This section covers information on other organisations with which the practice has links - this might include contact details for local hospitals to which referrals are commonly made. In addition, links to information resources from other sources which do not directly relate to clinics and services offered may be contained in this section. Health education resources or simple medical advice might also be included in this section.

6.3 NHS Board Templates

Areas identified for NHS Boards are:

About the Board - This presents information on the authority, its role, its goals, organisation, key contacts, and key contracts for the authority.

Patients Charter - This section is peculiar to UK and provides a statement of the agreed levels of care provided by the health authority through its contracting organisations.

Rights comments and complaints - This covers the complaints procedures operating within the region and means by which the public can take a role in the development of their medical services.

Services - This section provides an index to the different hospitals and services with whom the authority contracts to provide care and services to the community. It also contains

information on the services provided by the authority itself, e.g. public health medicine and health promotion.

Health and Disease - This category provides health demographic information for the region.

Publications - This area acts as a repository for the main public reports produced by the authority.

News - This section acts as the container for press releases, organisation news, and current vacancies.

A further category is being mooted for Clinical Audit and may be added in due course.

7 QA and Sign-off procedures

The SHOW publication model is based on the idea of delegating authority over site content to the organisation responsible for producing it. Within each organisation, two roles provide the interface to the central SHOW service:

- a single point of contact is defined that is responsible for passing updated material to SHOW for publication on the server;
- a named individual is responsible for editorial sign-off of the site. Although this responsibility may (indeed should) be devolved as far as possible to the information producers internally, the original "editor-in-chief" retains responsibility with respect to the outside world.

Editorial sign-off represents the formal acceptance of legal and ethical responsibility and liability for the information content of a site by the organisation represented by the sign-off person. It is a statement that the information contained adheres to any legal or ethical constraints that may be deemed appropriate. It is important, therefore, that any contributing organisation undertakes a proper process of internal review prior to publishing material. The following sections outline a sensible process for carrying out such a review and reflect the steps undertaken for SHOW team centrally developed sites. Although these steps are part of a review procedure, common sense dictates that many of these criteria should be assessed prior to or during the actual design/implementation process.

7.1 Review content

Content should be reviewed by the authors/editors for correctness, completeness and fitness for purpose. Where clinical information or advice is contained, pages should be reviewed by clinically qualified personnel. The annotated guidelines for the HON code (see Appendix B HON Code Principles (annotated)) should be used as a reference. The utility of information presented should also be assessed.

7.2 Review accessibility / compatibility / usability

The site should be reviewed to ensure that it is accessible (or at least usable) by its target group. As SHOW sites are aimed at the public at large, a wide range of user and browser capabilities must be catered for.

The review should verify:

- that users of the main target browsers (Internet Explorer and Netscape) can freely navigate to and view the facilities of the site.
- that users of other browsers (particularly Internet Explorer 5.x and Netscape 4.x) can navigate satisfactorily through the site
- that users of other (particularly text based) browsers can satisfactorily view information
- that users with disabilities can access information satisfactorily (given the right supporting client software).
- that information presented is legible and aesthetically acceptable.
- that pages download at an acceptable rate over a 56K modem.

7.3 Review compliance

Although very few of these guidelines outlined in this document are mandatory in the sense that not following them will result in denial of "SHOW status" they should not be disregarded without a specific (and documented) justification.

The following are mandatory features of a compliant SHOW website.

Mandatory for all sites:

- conformance with the NHSScotland corporate identity
- inclusion of the SHOW toolbar at the top left corner of each web page
- date of last modification to the site on the front page (preferably at the bottom of the site's navigation bar).
- provision of document meta information, including the required e-GMS meta data

Not mandatory but strongly recommended:

- use of HTML 4.x or XHTML 1.0 DTDs (see www.W3C.org)
- provision of redundant text links to the main site sections at the bottom of each page
- use of CSS for controlling page appearance

7.4 Review maintenance and update plans.

It is important to assign responsible web authors and content providers and implement a process by which new content can be added to the web site as it becomes available. Ideally this should become an integral part of the information publication process. A brief review of current plans for developing the site is recommended as part of the pre-launch assessment.

7.5 Perform Minimum Test Procedure

The test suite should include:

- a text-only browser such as Lynx or a Lynx emulator e.g. Lynx Viewer (<http://www.delorie.com/web/lynxview.html>) or Lynx-me (<http://ugweb.cs.ualberta.ca/~gerald/lynx-me.cgi>)
- multiple graphic browsers, with:
 - sounds and graphics loaded,
 - graphics not loaded,
 - sounds not loaded,

It may also be helpful to test a site with a self-voicing browser (such as MultiWeb - <http://www.deakin.edu.au/mis/multiweb/download32.htm>)

The HTML content of pages can be validated with tools such as: Bobby <http://www.cast.org/bobby> or the W3C HTML Validation Service <http://validator.w3.org>.
Macromedia Dreamweaver MX also allows validation of HTML used.

Site presentation should be tested at screen resolutions of 640x480, 800x600 and 1024x768.

The site should be tested at several colour depths - 16 colours, plus 32-bit depth (maximum colour power), or if unavailable, 24-bit (16 million colours) or 16 bit (65,000 colours) on several browsers.

Download speed should be tested over a 56K modem connection.

Test that all links on your pages function correctly and go where they say they are going. Links to external sites outwith the producers' control should be added with caution as they may change without notice. Links to other SHOW sites should be noted and passed to the SHOW team for co-ordination with the providers of the linked-to site to ensure that notice of changes is given.

7.6 Editorial Sign-off

Editorial sign-off represents the formal assumption of responsibility for site content by a participating organisation. For a site to go live on SHOW, a sign-off form must be completed and signed by the person within the organisation who has overall responsibility for the site content. Assumption of editorial responsibility by an organisation means that it assumes full legal and ethical responsibility and liability for the information accessible on their site (see above). SHOW reserves the right to remove or alter sites which contain material which has been brought to our attention as containing offensive, illegal or indecent material and to alter sites which do not comply with SHOW guidelines as published on the site to the extent that they are brought into compliance.

Having signed off a site as "live", authority to make updates to the site available to the SHOW central service may be delegated to a suitable person - that person may then give permission for SHOW to add new material to the organisation's site

A previously agreed substitute may sign this form when the main contact is unavailable (on leave, sick etc.)

7.6.1 Advertising on SHOW

The use of SHOW sites for the purposes of advertising by commercial organisations is prohibited. SHOW reserves the right to remove or alter offending sites to enforce compliance with this policy.

8 References and further reading

8.1 HTML references and tutorials

The following style and html references provide more detail on good practice for Web design.

Yale Web Style Guide	http://www.webstyleguide.com/index.html?/contents.html
Style Guide for on-line hypertext (w3)	http://www.w3.org/hypertext/WWW/Provider/Style/Overview.html
<i>JavaScript – The Definitive Guide</i>	O'Reilly UK; ISBN: 0596000480

8.2 Accessibility and Guidelines

Web Content Accessibility Guidelines 1.0 W3C Recommendation 5-May-1999	http://www.w3.org/TR/WAI-WEBCONTENT/
Bobby Accessibility Validator	http://www.cast.org/bobby/
BT website – Safe web colours	http://innovate.bt.com/people/rigden/colours/

for colour-deficient vision

8.3 Usability Information, Layout, typography and use of colour

<i>Layout: The design of the printed page</i>	Hurlburt, A. 1977.. New York: Watson-Guptill.
<i>Type and image: The language of graphic design.</i>	Meggs, P. B. 1989. New York: Van Nostrand Reinhold.
<i>Envisioning information.</i>	Tufte, E. R. 1990. Cheshire, CT: Graphics Press.
<i>Designing business: multiple media, multiple disciplines.</i>	Mok, C. 1996. San Jose: Adobe Press.
<i>Stop stealing sheep & find out how type works</i>	Spiekermann, E., and E. M. Ginger. 1993, Mountain View, CA: Adobe Press.
<i>Collier's Rules for Desktop Design</i>	David Collier Addison Wesley, 1990

9 Appendix B HON Code Principles (annotated)

HON Code Principle

Notes for SHOW

Principle 1

Any medical/health advice provided and hosted on this site will only be given by medically/health trained and qualified professionals unless a clear statement is made that a piece of advice offered is from a non-medically/health qualified individual/organisation.

Principle 2

The information provided on this site is designed to support, not replace, the relationship that exists between a patient/site visitor and his/her existing physician.

Principle 3

Confidentiality of data relating to individual patients and visitors to a medical/health website, including their identity, is respected by this Website. The Website owners undertake to honour or exceed the legal requirements of medical/health information privacy that apply in the country and state where the Website and mirror sites are located.

In practice this means that **NO** patient identifiable data should be made available over the Internet. Appropriate guidance should be sought before considering making such information available via intranet.

Principle 4

Where appropriate, information contained on this site will be supported by clear references to source data and, where possible, have specific HTML links to that data. The date

In addition, the last update date should appear on the home page of the SHOW site.

when a clinical page was last modified will be clearly displayed (e.g. at the bottom of the page).

Principle 5

Any claims relating to the benefits/performance of a specific treatment, commercial product or service will be supported by appropriate, balanced evidence in the manner outlined in Principle 4. above.

Currently, SHOW policy prohibits the use of SHOW sites for the purposes of commercial advertising.

Principle 6

The designers of this Website will seek to provide information in the clearest possible manner and provide contact addresses for visitors that seek further information or support. The Webmaster will display his/her E-mail address clearly throughout the Website.

Principle 7

Support for this website will be clearly identified, including the identities of commercial and non-commercial organisations that have contributed funding, services or material for the site.

Where support and funding come from a commercial organisation, care should be taken not to imply endorsement of their products.

Principle 8

If advertising is a source of funding it will be clearly stated. A brief description of the advertising policy adopted by the website owners will be displayed on the site. Advertising and other promotional material will be presented to viewers in a manner and context that facilitates differentiation between it and the original material created by the institution operating the site.

Currently, SHOW policy prohibits the use of SHOW sites for the purposes of commercial advertising.

10 Appendix D: Browser Types

Links are presented here to help web authors to assess the range and spread of different types of WWW browser. The statistics provided should not necessarily be thought of as representative of SHOW target audience, nevertheless, it is useful to consider the potential range of browsers when deciding on a policy for compatibility. Information about browser types is extracted from the HTTP Request header provided by nearly all browsers.

[Browser statistics](#) :

<http://www.upsdell.com/BrowserNews/stat.htm>

http://www.w3schools.com/browsers/browsers_stats.asp

11 Appendix E - HTML code sample

11.1 Sample Frameset

```
<html>
<head>
<title>SHOW Compliant Website</title>
```

```
<meta http-equiv="Content-Type" content="text/html; charset=iso-8859-1">
<meta name="e-GMS.accessibility" scheme="WCAG" content="Double-A" />
<meta name="e-GMS.accessibility" content="(pics-1.1
"http://www.icra.org/ratingsv02.html" l gen true for
"http://www.show.scot.nhs.uk/mySite" r (cz 1 lz 1 nz 1 oz 1 vz 1)
"http://www.rsac.org/ratingsv01.html" l gen true for
"http://www.show.scot.nhs.uk/mySite" r (n 0 s 0 v 0 l 0))" />
<meta name="DC.creator" content="Page author, my organisation Web Team,
my organisation address, mailto:myOrganisation@somewhere.scot.nhs.uk" />
<meta name="DC.date.created" scheme="ISO6801" content="2003-05-30" />
<meta name="DC.identifier" scheme="URI"
content="http://www.show.scot.nhs.uk/mysite/index.htm" />
<meta name="DC.publisher" content="Name of my organisation, address,
email, telephone" />
<meta name="DC.rights.copyright" content="Crown Copyright year(s) of
copyright eg 2000-2003" />
<meta name="eGMS.Subject.Category" scheme="GCL" content="NHS Performance"
/>
<meta name="eGMS.Subject.Category" scheme="MESH"
content="C14.280.647.500" />
<meta name="DC.title" content="title of web page" />
<meta name="description" content="The content of this tag has as many
relevant keywords about Health and Health care information and medicine
medical information and clinical information for the public and health
care professionals as possible, so that it can be indexed easily by web
search engines">
<meta name="keywords" content="Health, Medicine, Health care information,
clinical information, medicine, public health education, clinical
guidelines, clinical decision support, health services administration,
information, medical, health">
<link rel="StyleSheet" href="showscreenstyle.css" type="text/css"
media="screen">
<link rel="StyleSheet" href="showprintstyle.css" type="text/css"
media="print, braille">
</head>

<!-- the pixel value 147, below, represents the width of the navigation
bar - set it to whatever value necessary -->
<frameset cols="147,*" frameborder="no" framespacing="0" border="0">

<noframes>
<body>
<p>This page is the Homepage of the xxxxxxxxxx website. It contains
xxxxxxx</p>
<p>By the way, if you are seeing this text it is because the browser you
are using doesn't support frames - you can link to a <a href="home.htm">
version of the site that doesn't use frames</a>
</span>
</body>
</noframes>

<frame src="navigate.htm" name="navigate" noresize frameborder="0">
```

```
<frame src="home.htm" name="home">  
</frameset>  
</html>
```

Document History

Version	Author(s)	Reason for Change
2	CH	First draft of revised document (revision from v1.22)
2.01	CH	Minor corrections
2.1	CH	Added qualification to the recommendation on information sets for trusts and health boards