NHSx Interoperability standards registry - service map v5.0

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Stage: Creating a new standard

Step: A need for a new standard is identified

Actors: Department of health - NHS England & Improvement OR Local health organisations OR NHSx / NHS digital

Actions:
- New strategic and ministerial priorities identify a new standard requirement
- An organisation (e.g. NHS Digital) is commissioned to develop standard and produce the standard
- Local needs and priorities identification or business case funding identify new standard requirement
- A standard is developed at a local level
- The standard is adopted across a range of local services
- The standard is identified as beneficial to roll out at a national level
- User research, benefits identification or business case funding identify new standard requirement
- An organisation (e.g. NHS Digital) is commissioned to develop standard and produce the standard

Pain points:
- Standards can become irrelevant if the creation process is too top-down / detached from real life use cases
- Nationwide visibility of locally developed standards is poor - leading to duplication of effort across the NHS

Opportunities:
- We should try and ensure all standards are tagged to a relevant use case

Things to explore in Alpha and beyond:
- How might we: Help make locally developed standards more visible to all users to support their development

Step: A new standard is created

Actors: Standards owners, Standards developers, Assurance organisations

Actions:
- A new standard is developed in consultation with standards community
- The standard goes through an assurance process (optional)
- The standard is published by the standards owners on their website
- (Optional) An Information Standards Notice is published to subscribers

Pain points:
- Constantly changing governance means scrutiny has been reduced when quality assuring standards documentation
- Different standards have different levels and types of assurance
- Users aren't sure which standards are mandated and which are optional to follow
- International suppliers are frustrated with the unique nuances of UK standards implementations

Opportunities:
- We will be clear about the compliance required for each standard
- We could highlight gaps in metadata, or missing information of performance data so users have clarity on a standards

Things to explore in Alpha and beyond:
- How might we: Help ensure a consistent level of quality in standards

Step: The new standard is added to the registry

Actors: Standards owners, Standards registry team OR Standards community, Standards registry team

Actions (centrally managed process):
- The registry is updated in a centrally managed process
- The standards owners log into their own account on the registry
- They create a new standard for the registry
- They add all relevant details, documentation and metadata
- The standard goes through an approval / QA process
- The standard is published on the registry
- Notifications are sent to subscribed users

Actions (crowdsourcing process):
- The registry is updated by a crowdsourcing process
- A user spots that a standard needs to be updated
- They make a 'pull request' style suggestion to update the existing standard
- They add all relevant details, documentation and metadata
- The pull request is reviewed by the community against a set criteria
- Once accepted, the update is published on the registry
- Notifications are sent to subscribed users

Opportunities:
- We will be clear about the compliance required for each standard

Things to explore in Alpha and beyond:
- How might we: be confident standards owners keep the registry up to date?
- How might we: prevent standards going out of sync between the owners website and the registry
- How might we: be confident the community keep the standards in the registry up to date?
- How might we: help the community to keep the standards up to date

Key performance indicators and other metrics:
- Monitor regularity of updates to standards
- Gather user satisfaction / feedback
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Stage: Procuring a new service requiring interoperability standards

Step: A new digital service is required

Actors: Service owner, Procurement team, Spend controls team

Actions:
- The need for a new service is identified through policy, user research or gap analysis
- A proposal for the new service is created outlining initial requirements
- The proposal for the service goes through spend controls for approval
- The procurement team goes to identify the relevant standards to include on the opportunity
- The procurement opportunity is published

Pain points:
- Spend control teams don't know what standards should be included
- Procurement teams don't know what standards to include
- There is no single place to signpost users for a complete list of standards

Opportunities:
- We should ensure procurement guidance directs users to the standards registry to find the information they need
- We will help make it clear what standards should be applied to specific use cases

Things to explore in Alpha and beyond:
- How might we: Ensure procurement can be sure they're including the correct standards in contracts and procurement

Key performance indicators and other metrics:
- Monitor regularity of updates to standards
- Gather user satisfaction / feedback

Additional notes:
- Use cases will need to be created and maintained somehow

Step: Relevant standards information is found

Actors: Service owner, Procurement

Actions:
- A user visits the standards registry
- They navigate to the standards appropriate for their service
- They assess the different standards to understand which ones their service requires
- The required standards are included in the procurement opportunity

Pain points:
- Not all organisations have people knowledgeable in interoperability to identify required standards
- Competing demands mean that different types of standards need to be applied in tandem
- Previous procurement opportunities have included references to retired services and standards

Opportunities:
- We will provide a range of mechanisms for users to browse the standards, making use of use cases to help contextualise their
- We will provide clear, plain English descriptions of standards and their requirements

Things to explore in Alpha and beyond:
- How might we: Help procurement prioritise interoperability?

Key performance indicators and other metrics:
- Monitor web analytics (e.g. page views, click throughs, etc)
- Gather user satisfaction / feedback
- Number of procurement opportunities referencing

Additional notes:
- This will need to support both expert and users brand new to interoperability, who have significantly different knowledge on

Step: A supplier is procured to deliver a service

Actors: Supplier

Actions:
- A user is awarded the opportunity to build the service

Stage: Building a new service using interoperability standards

Step: A supplier begins to build the service

Actors: Supplier

Actions:
- They begin developing the service
- They identify need to follow certain interoperability standards from the contract
- The contract directs the user towards the standard registry for more information

Pain points:
- Some suppliers don't have interoperability expertise to implement standards
- Some suppliers don't know what standards to follow

Opportunities:
- We will provide guidance to help users understand the benefits of interoperability so they are more willing to invest in it
- We will provide relevant guidance for implementing interoperability
- We will provide clear definitions of what is meant by 'interoperability' and 'standards' so users have a shared understanding with others working in this space

Things to explore in Alpha and beyond:
- How might we: Help signpost users to the registry from the procurement process?

Key performance indicators and other metrics:
- Gather user satisfaction / feedback
- Monitor web analytics (e.g. page views, click throughs, etc)

Step: A supplier learns about the interop. standards landscape

Actors: Supplier

Actions:
- A user visits the standards registry
- They explore guidance around interoperability
- They review case studies of how others have implemented similar interoperable services
- The case studies highlight specific standards used in that implementation

Pain points:
- Implementation guidance documentation are of varying quality
- Suppliers find it hard to find and understand which standards to follow
- Suppliers can find conflicting information between different standards
- Services that cross multiple care settings aren't as clear cut about what applies to them
- Some standards can be out of date
- It's not clear where to find relevant guidance

Opportunities:
- We will develop a clear browsing taxonomy so users can understand the standards landscape and find the right standards for
- We will develop a comprehensive search that will help users direct themselves quickly towards specific items
- We will clearly display which standard versions are up to date and what compliance requirements there are
- We will use a range of navigation methods to help orientate users towards the standards they need
- We will provide cross-linking to other related standards so users know everything that's related to what they're looking at

Key performance indicators and other metrics:
- Gather user satisfaction / feedback
- Monitor web analytics (e.g. page views, click throughs, etc)

Step: A supplier learns about what available standards there are

Actors: Supplier

Actions:
- A user can browse standards by standard type
- A user can explore use cases related to their service and finds standards related to those use cases
- A user can search for any specific standards they require

Pain points:
- If a healthcare provider doesn't have specialism in certain standards, is harder for them to implement
- Low scrutiny during service assurance means developers can implement standards at a lower quality
- The prioritisation of standards implementation is often based on supplier capacity rather than national
- Healthcare providers have different implementations, so suppliers must build bespoke integrations in each case

Opportunities:
- We will provide example use cases and case studies to help users understand the relevance of a standard to their

Key performance indicators and other metrics:
- Gather user satisfaction / feedback
- Monitor web analytics (e.g. page views, click throughs, etc)

Step: A supplier finds out the details about a specific standard

Actors: Supplier, Service owner, Care providing organisation

Actions:
- A user finds details on a specific standard
- They understand the full context of that standard (e.g. versioning / status / upcoming changes / etc)
- They learn of all related and dependent standards and can find more detail related to those
- The supplier and care provider discuss what other systems their service needs to interoperate with in their ecosystem
- They make a decision on implementation based on the information gathered from discussions and the register
- They navigate the standard owners website for more detail if required

Opportunities:
- We will provide clear guidance on whether what level of compliance is required for a standard

Things to explore in Alpha and beyond:
- How might we: Help healthcare providers have more clarity around the technologies they use so suppliers can avoid building bespoke integrations.

Key performance indicators and other metrics:
- Gather user satisfaction / feedback
- Monitor web analytics (e.g. page views, click throughs, etc)

Step: A supplier implements a specific standard

Actors: Supplier, Standard owner

Actions:
- They navigate to the relevant standards owners websites
- Follow guidance for adopting standards
- Possibly contact standards owners for support
- Standard is implemented using implementation guidance and other documentation
- User subscribes to notifications for updates to the standard
- Suppliers test the implementation with a test harness or similar
- Users service interoperates with other services within the NHS
- Healthcare provider manages operational change introduced by sharing and receiving information with other care settings so that staff can provide better care to people

Pain points:
- Its not always easy to find who to go to for support when implementing a standard
- It's not clear how to test for interoperability if other suppliers are not collaborating, if test harnesses are not provided

Opportunities:
- Clearly communicate the compliance required for each standard

Key performance indicators and other metrics:
- Gather user satisfaction / feedback
- Monitor number of subscribers

Step: The service is assessed and goes live

Actors: Service owner, Supplier, Service assessment team

Actions:
- The service goes through a service assessment
- The service assessors check for compliance against any required standards
- If the service passes into the next stage of development

Pain points:
- Service assessors don't know what to assess interoperability against
- Service assessors lack the expertise to assess its interoperability

Things to explore in Alpha and beyond:
- How might we: Help help service assessors understand the kind of standards that should be applied to a service

Key performance indicators and other metrics:
- Number of services passing/failing on interoperability issues

Additional notes:
- When doing this we should be transparent about what has already been proposed or suggested to users can avoid duplication

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Stage: Updating a standard

Step: A standard goes through the review process

Actors: Standard owner, Assurance organisation

Actions:
- At a predefined date, a standard will be reviewed
- The date will be published in advance on the registry so users viewing the standard know it is still being monitored
- Feedback is collected on what can be improved
- The standard is reviewed by the standard owners / assurance team
- A decision will be made to either update, retire or leave the standard as is

Pain points:
- Standards reviews aren't done consistently or regularly
- It's not always clear if a standard is still being regularly maintained or is left dormant

Opportunities:
- We will display the dates of recent changes to standards so users have visibility of how recent the updates are happening
- We will display the dates of upcoming reviews on each standard page

Things to explore in Alpha and beyond:
- How might we: Help standards assessors understand the kind of standards that should be applied to a service

Key performance indicators and other metrics:
- Monitor regularity of reviews
- Monitor outcomes of reviews

Step: A user proposes an update to a standard via the registry

Actors: Developer / Service team / standards community, Standards gatekeepers

Actions:
- A user developing a new service identifies an opportunity for improvement of a standard
- The user proposes an update to a standard via the registry
- The proposal is reviewed and analysed by curation team
- The proposal goes through the same process as the creation of a standard

Opportunities:
- We could provide feedback mechanisms for each published standard
- We could provide a mechanism to submit new standards or ideas for standards
- We could provide a user login to manage and monitor 'my standards'

Things to explore in Alpha and beyond:
- How might we: Enable users to propose updates or new standards

Key performance indicators and other metrics:
- Monitor regularity of contributions

Step: A standard update is approved and published

Actors: Standard owner, Supplier, Assurance organisation

Actions:
- The standard documentation is updated and reviewed
- Dependencies with other types of standards are identified and addressed
- When ready, the updated standard is published by the standard owner
- The standard registry will be updated to reflect the new documentation, metadata and change notes with required dates of compliance (if applicable)
- The date of the review will be recorded and the next review date published

Pain points:
- There can be a lack of clarity in the standards development which negatively impacts the digital development pipeline

Opportunities:
- We could provide email subscriptions
- We could provide a user login to manage and monitor 'my standards'
- We could provide an account for users to monitor and manage their standards
- Include information on future updates clearly on the standard

Things to explore in Alpha and beyond:
- How might we: Ensure the quality of updated metadata and documentation of standards
- How might we: Inform standards users that their standards might need updating

Key performance indicators and other metrics:
- Monitor regularity of contributions

Step: Suppliers update their services

Actors: Suppliers

Actions:
- The suppliers receive an update notification for their standards
- They review the documented changes and required dates of compliance (if applicable)
- They plan the required changes into their roadmap undertaking an assessment of the impact of change and resources required
- They update their services according to the new standard documentation

Pain points:
- Sometimes it's not clear who needs to implement a required change to a standard
- Not all suppliers will update to the latest version of a standard
- Suppliers might suggest they don't have enough time to implement changes
- Suppliers might suggest they don't have any influence over timescales for implementation
- There often isn't financial incentive to make retrospective updates

Opportunities:
- We should make all previous versions of a standard visible and available for users still using out of date versions
- Standards creators could provide more options for implementation to support systems on outdated tech
- We could improve the guidance for those improving the standard
- We could better communicate the benefits of implementation
- We could provide all documentation from one location

Key performance indicators and other metrics:
- Monitor regularity of updates to standards

Step: (Eventually) A standard is retired

Actors: Standard owner, Assurance organisation, Subscribed users

Actions:
- A standard review is undertaken but the decision is taken to retire the standard
- The standard is marked as being retired along with reasons for retirement and any standard that will supersede it (if applicable)
- Subscribed users are notified of the retirement of the standard

Opportunities:
- We will need to retain entries for retired standards so that users are aware of what's no longer in use

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Stage: Knowledge sharing

Step: A user shares a new case study

Actors: Service owner

Actions:
- A user chooses to submit a case study
- They outline the details of the case study and appropriate metadata
- The case study goes through a review / approval process
- Once finalised, case study is published on the registry with links to all relevant standards and resources

Things to explore in Alpha and beyond:
- How might we: review submitted case studies and assure quality

Key performance indicators and other metrics:
- Monitor regularity of contributions

Additional notes:
- We will need to ensure they are appropriately tagged and cover a broad range of examples across health and social care