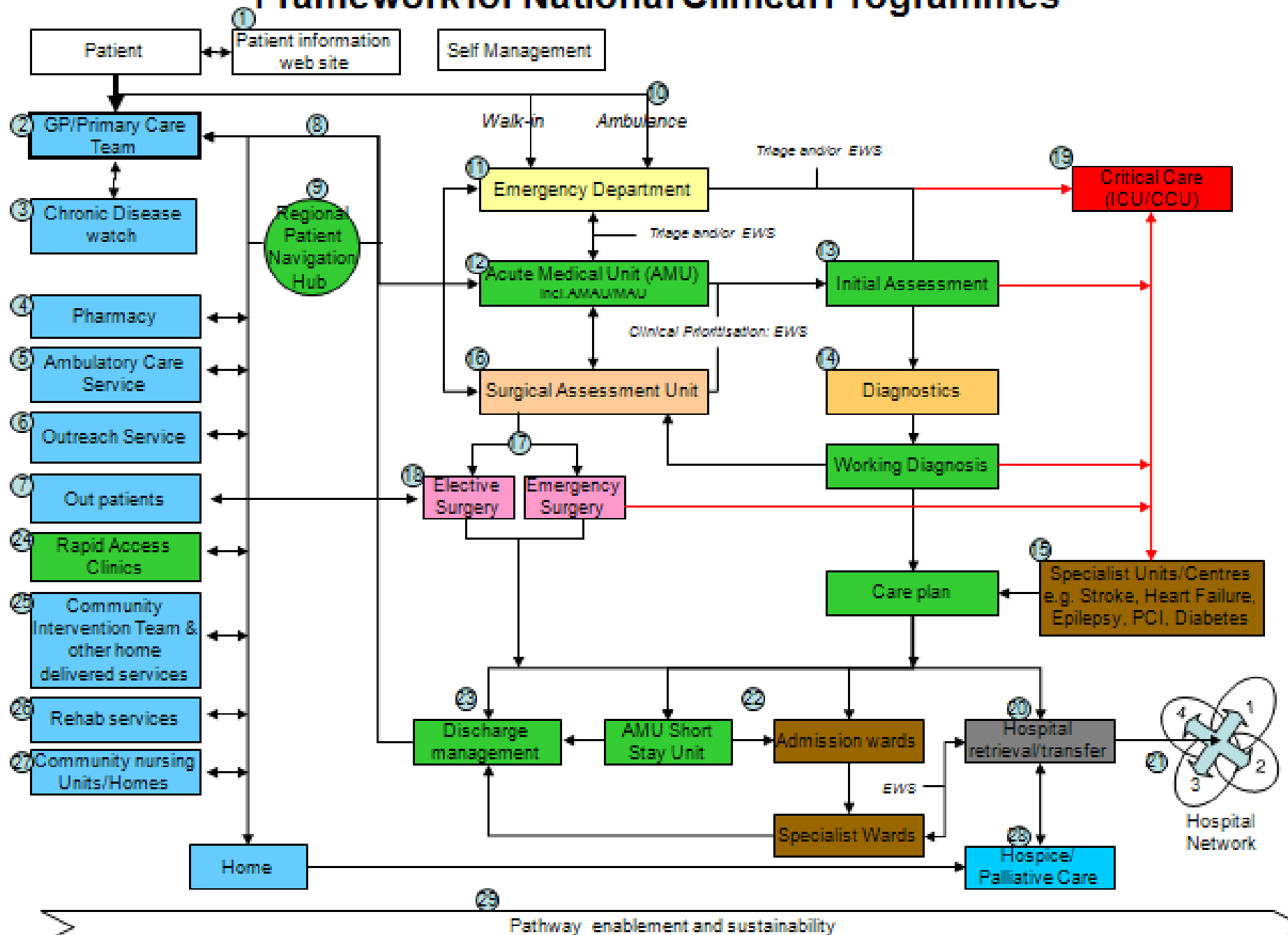


STANDARDS, INFORMATION MODELS & CLINICAL PROGRAMMES



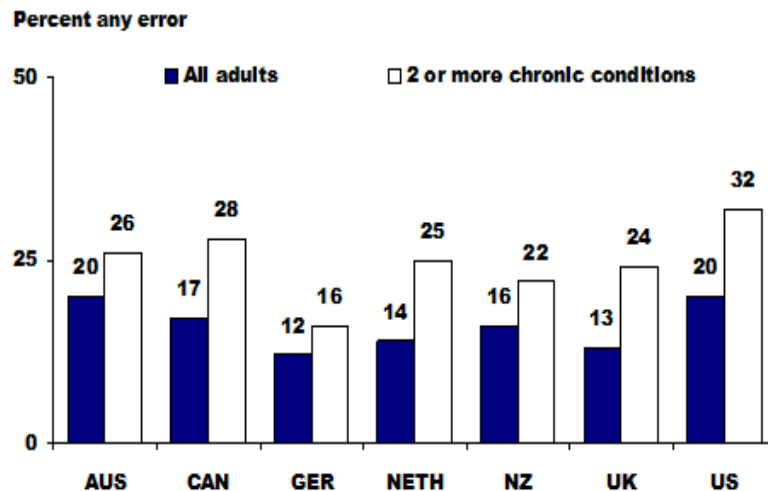
Framework for National Clinical Programmes



DATA SHARING REQUIREMENTS

Co-morbidity patients experience more medical errors

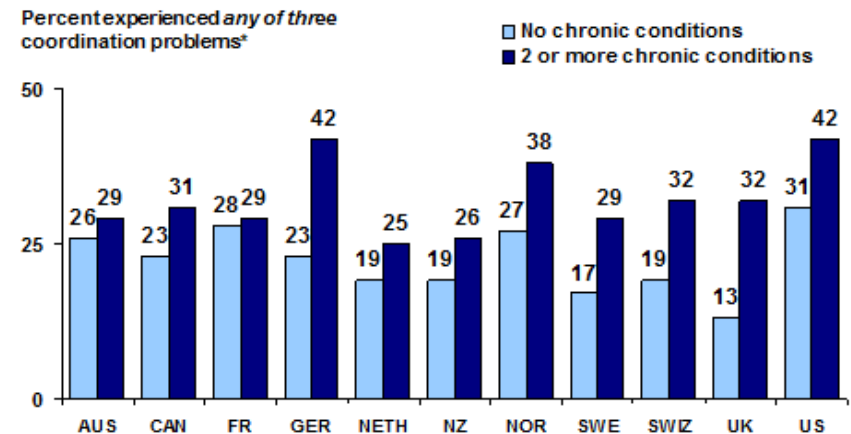
Figure 37. Any Error in Past Two Years



Note: Errors include medical mistake, wrong dose/medication, or lab test error.
 Source: 2007 Commonwealth Fund International Health Policy Survey.
 Data collection: Harris Interactive, Inc.

Co-morbidity greater coordination problems

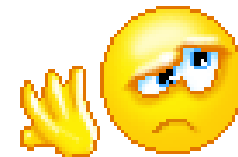
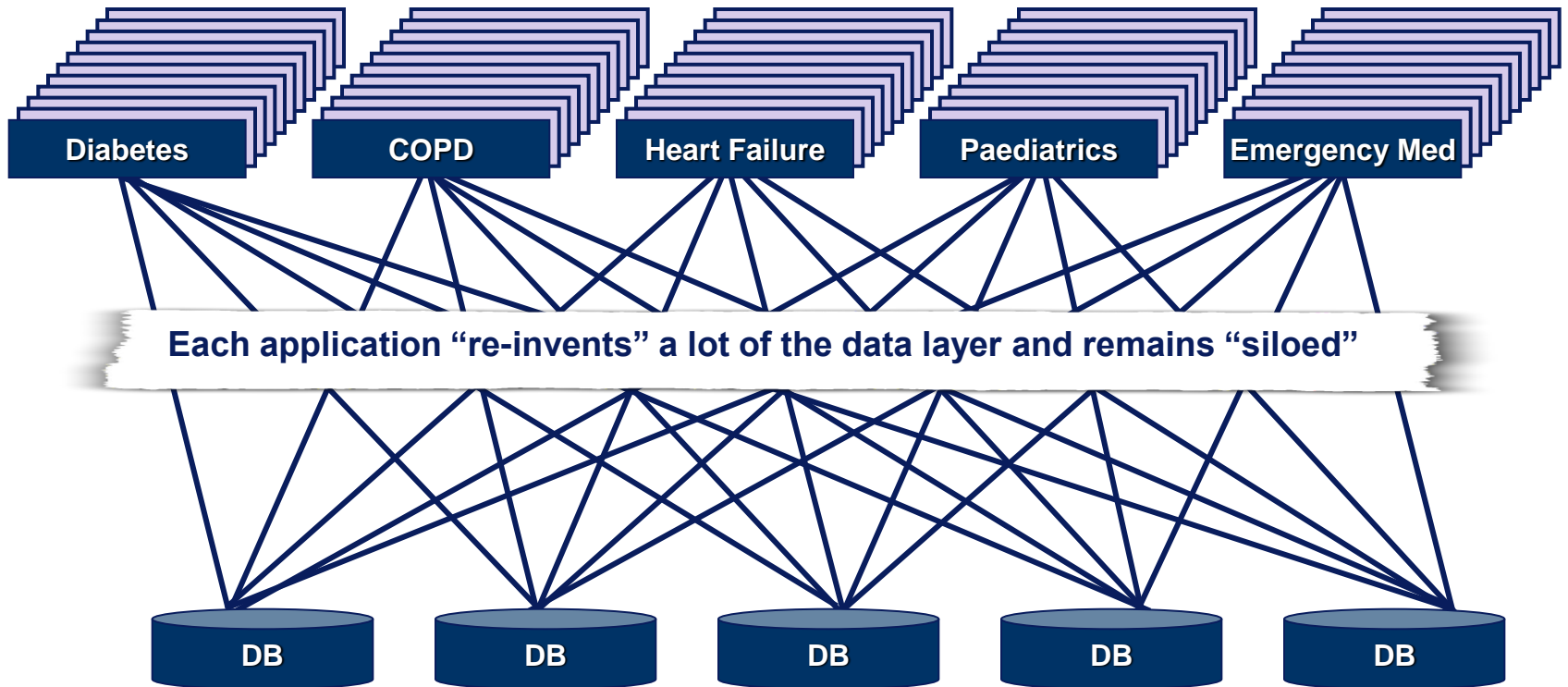
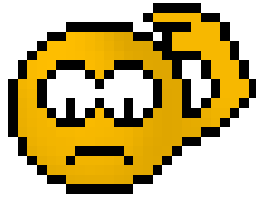
Coordination Problems in the Past Two Years, by Number of Chronic Conditions



* Test results/records not available at time of appointment, received conflicting information from different health professionals, and/or doctors ordered test that had already been done.

Source: 2010 Commonwealth Fund International Health Policy Survey in Eleven Countries.

DATA CHALLENGE



WHY STANDARDS

- Information systems are only as good as their data.
- Without a mutually agreed-upon set of data elements with clearly defined names and definitions, the validity and reliability of the data contained in a system are suspect at best and must be discounted at worst.
- The data model, data dictionary, and its relationship with the metadata registry are the foundation of an information system and the central building block that supports communication across business processes.
- The purpose of the data dictionary is to standardise definitions and ensure consistency of use.
- Standardisation of data enhances interoperability across systems.
- Standardisation also improves data validity and reliability within, across, and outside the organisation.
- Standardisation provides a common understanding of terms. Standardisation provides a common road map for information consistency. across shared national applications.

Standards ensure that data recorded by different clinicians in different care settings using different ICT systems can be brought together in an integrated form whilst fully maintaining the integrity of the data.

The adoption of national standards lays the foundation for a future national EHR

INTEROPERABILITY

The systems used by individual clinical programmes will need to be able to predictably compute on the exchanged information based on an agreed set of specifications defining the structure and meaning of the exchanged information

Syntactical;

- *Understanding of structure and rules of the language eg. Sentence construction*

Semantic;

- *Understanding of the meaning of the information*

WHO- differing levels of interoperability

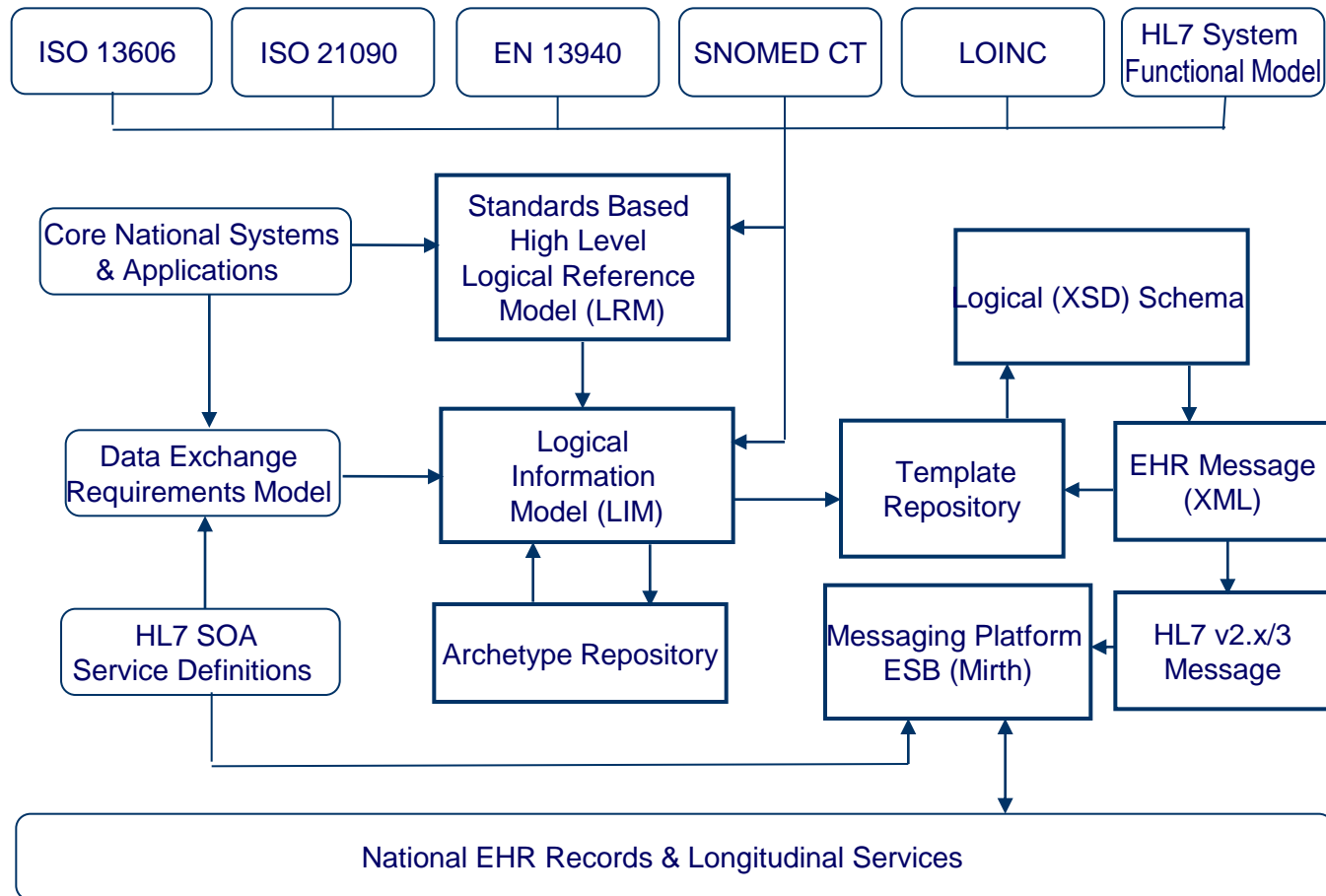
- **Level 0:** no technical interoperability
- **Level 1:** technical and syntactical interoperability
- **Level 2:** technical, syntactical and some semantic interoperability
- **Level 3:** technical, syntactical with full semantic interoperability

The ultimate goal for HSE ICT platforms and clinical programmes is syntactical and semantic bidirectional interoperability

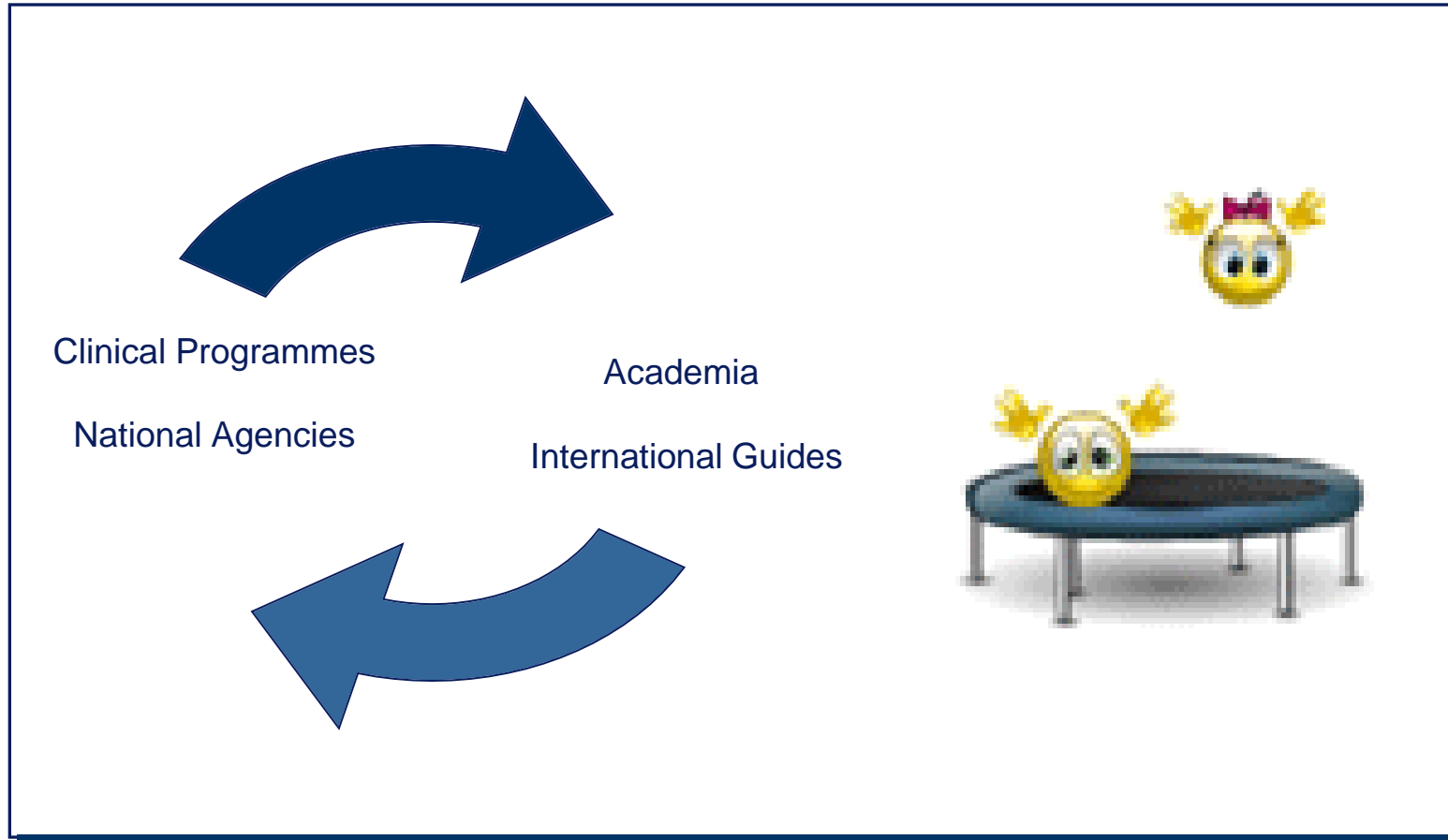
STANDARDS ANALYSIS FRAMEWORK

	HL7 v2	HL7v3	CEN 13606	OpenEHR	CDA/CCD	XML/Web Service
Breadth of Coverage to realise full EHR	☞	☞☞	☞☞	☞☞☞	☞☞	✗
Expressive power for clinical data	☞	☞☞☞	☞☞ (weaker RM)	☞☞☞	☞☞☞ (as per v3)	✗
Intelligent Querying	☞	☞☞☞ (Assuming a RIM parser)	☞☞ (there are problems with it)	☞☞☞	☞	☞ (Xpath)
Support for decision support	☞	☞☞☞	☞☞	☞☞	☞☞ (this is what the NHS are doing)	✗
Accessibility standards and specs	☞☞☞	☞☞	☞	☞☞☞	☞☞☞	☞☞☞
Tools and components	☞☞☞	☞☞	✗	☞☞	☞	☞☞☞
Vendor interest and support	☞☞☞	☞	✗ (no implementations)	☞	☞☞	☞☞☞ (widespread use across IT)
Reference implementations	☞☞☞	☞	✗ (no implementations)	☞	☞☞☞	☞☞☞
RIM stability & consistency	✗	☞☞	☞☞	☞☞	☞☞	✗
Support for knowledge management	☞	☞☞☞	☞☞	☞☞☞	☞☞	✗
Embedded security	☞☞☞	☞☞☞	☞	☞☞☞	☞	☞
Institutionalisation & governance	☞☞☞	☞☞☞	☞☞☞	☞	☞☞☞	☞☞☞
Support messaging	☞☞☞	☞☞☞	☞☞	☞ (no messaging support beyond content)	☞☞	☞
EHR persistence	✗	✗ (neither v2 nor v3 are persistence specs)	☞☞	☞☞☞	☞☞	☞
Terminology/Ontology bindings	☞☞	☞☞☞ (v3 has richer structured datatypes than better support post-coordination)	☞☞☞	☞☞☞	☞☞☞ (as per v3 esp CD datatype)	☞☞☞ (using RDF and OWL)

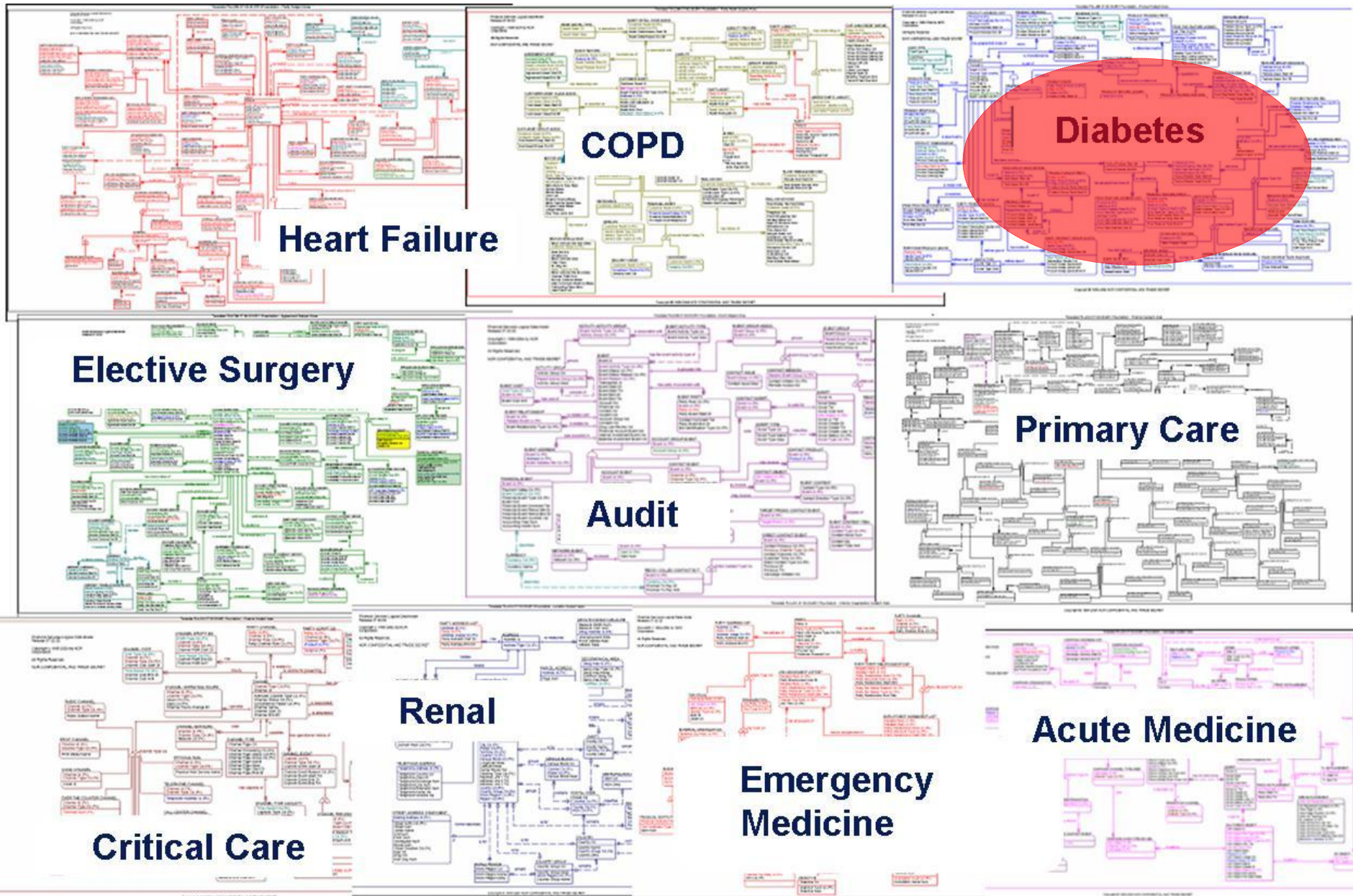
LOGICAL INFORMATION REFERENCE MODEL



COLLABORATION



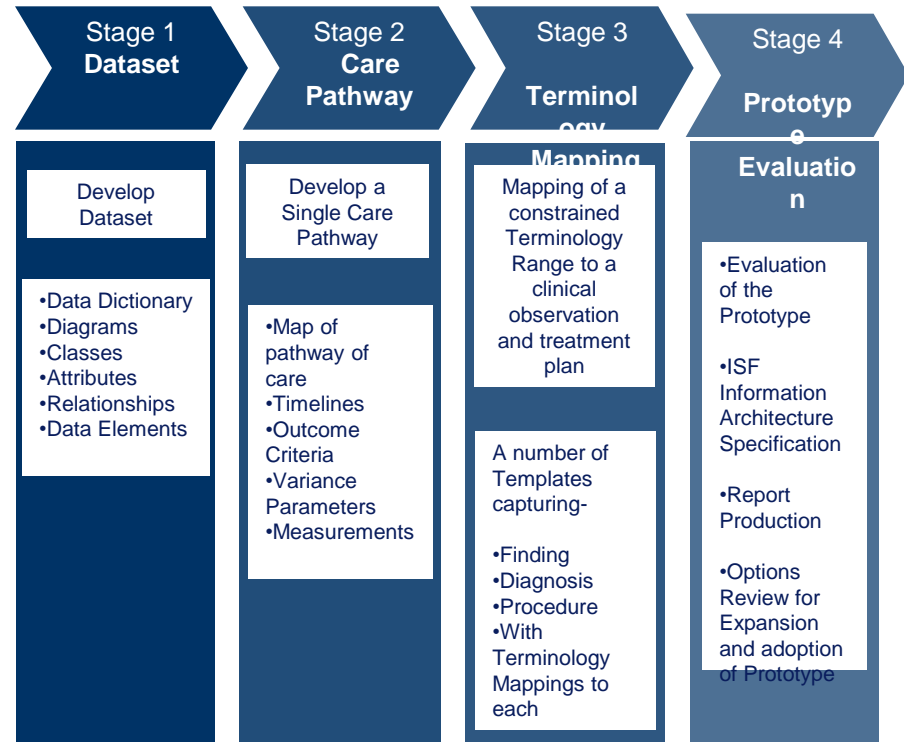
DATA MODEL FOR CLINICAL PROGRAMMES



INITIAL COLLABORATION - DIABETES

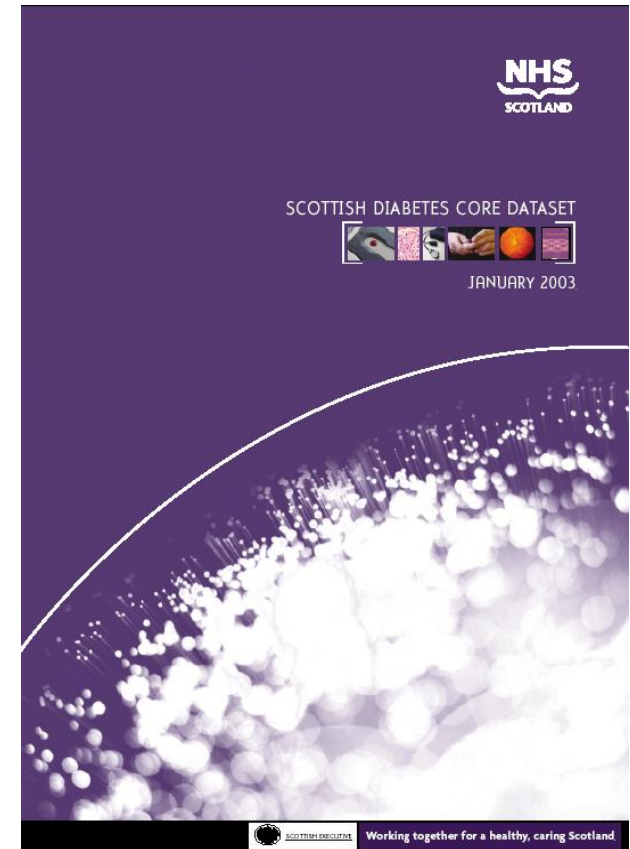
Activities

- The work to be undertaken has four stages.
- The project will map a constrained number of Snomed CT terminologies to a clinical observation and treatment plan.
- The outcome of this phase will inform the Integrated Services Framework (ISF) as to the value and practicality of including Snomed as a preferred terminology.



DIABETES

- Collaborative group visited Tayside
- Reviewed sci-dc model
- Decided upon a constrained set of data elements with localisations
- SNOMED & LOINC codes applicable
- SDU/DOH/HSE advancing the programmes business case



SNOMED CODES (not in Tayside model)

- 25093002 Diabetic oculopathy
 - x 190348006 Diabetes mellitus NOS with ophthalmic manifestation
 - 43959009 Diabetic cataract
 - x 421920002 Diabetic cataract associated with type I diabetes mellitus
 - x 420756003 Diabetic cataract associated with type II diabetes mellitus
 - x 193489006 Diabetic iritis
 - 421165007 Diabetic oculopathy associated with type I diabetes mellitus
 - x 420486006 Exudative maculopathy associated with type I diabetes mellitus
 - 422099009 Diabetic oculopathy associated with type II diabetes mellitus
 - ↑ 420756003 Diabetic cataract associated with type II diabetes mellitus
 - 422034002 Diabetic retinopathy associated with type II diabetes mellitus
 - x 421779007 Exudative maculopathy associated with type II diabetes mellitus
- 4855003 Diabetic retinopathy
 - x 311782002 Advanced diabetic retinal disease
 - x 399868002 Diabetic intraretinal microvascular anomaly
 - 232020009 Diabetic maculopathy
 - x 193350004 Advanced diabetic maculopathy
 - 312912001 Diabetic macular edema
 - x 399864000 Diabetic macular edema not clinically significant
 - x 414908005 O/E - right eye clinically significant macular edema
 - 420789003 Diabetic retinopathy associated with type I diabetes mellitus
 - ↑ 420486006 Exudative maculopathy associated with type I diabetes mellitus
 - x 314010006 Diffuse diabetic maculopathy
 - ↑ 421779007 Exudative maculopathy associated with type II diabetes mellitus
 - x 314011005 Focal diabetic maculopathy
 - x 314014002 Ischaemic diabetic maculopathy
 - x 314015001 Mixed diabetic maculopathy
 - + 408416008 O/E - left eye diabetic maculopathy
 - + 408415007 O/E - right eye diabetic maculopathy
 - x 25412000 Diabetic retinal microaneurysm
 - x 399866003 Diabetic retinal venous beading
 - x 193353002 Diabetic retinopathy NOS

NEXT STEPS

- Tender Framework Appointments
- Run mini-tenders
- Make awards and commence workstreams
- Build, test and refine a prototype
- Expand Collaboration
- Establish a governance structure for clinical programme datasets

COLLABORATIVE PLATFORM

ISF EHR Portal - Home - Windows Internet Explorer

http://10.0.37.101/EHRPortal/SitePages/Home.aspx

File Edit View Favorites Tools Help

★ Favorites | ★ Suggested Sites | Web Slice Gallery

ISF EHR Portal - Home

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Site Actions | Browse | Page

ISF EHR Portal | Home

Welcome to the Integrated Service Framework (Electronic Health Record) Portal

ISF EHR Portal | Vision and Strategy | Technical Architecture | Information Architecture | Access | Governance | National Clinical Audit

Clinical Programmes | Library

WS 5: High Level Business Process Specification
WS 6: Information Architecture Model
WS 7: Data & Information Repository
WS 8: Transformation Interfacing & Sourcing

Search this site...

Discussions

Team Discussion

Libraries

Shared Documents

Site Pages

Lists

Calendar

Tasks

Recycle Bin

All Site Content

Welcome to the National Integrated Services Framework (Electronic Health Record) collaboration site.

Welcome to the HSE's National Integrated Services Framework Project Portal.

On it you can find information on our programme of work, and should you wish you can comment or contribute to the programme. Details [here](#)

Calendar

	Title	Location	Start Time	End Time	All Day Event
There are no items to show in this view of the "Calendar" list. To add a new item, click "New".					
Previous					
Add new event					

Announcements

	Title	Modified
Get Started with Microsoft SharePoint Foundation!		
23/08/2011 14:10		

Useful Project Links

	Type	Edit	URL	Notes
There are no items to show in this view of the "Links" list. To add a new item, click "New".				
Add new link				

Local intranet

100%

start

Inbox - Microsoft Out...

3 Windows Explorer

2 Microsoft Office P...

ISF EHR Portal - Hom...

Microsoft Excel

EN

17:11

COLLABORATIVE PLATFORM

National Diabetes Programme - Home - Windows Internet Explorer

http://10.0.37.101/EHRPortal/CP/EHR/SitePages/Home.aspx

File Edit View Favorites Tools Help

National Diabetes Programme - Home

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National Diabetes Programme - Home

Data Architecture for the National Diabetes Programme

Clinical Programmes Heart Failure Programme National Diabetes Programme

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Discussions

Team Discussion

Recycle Bin

All Site Content

Diabetes Programme

Diabetes is one of the nation's most prevalent chronic diseases. Type 2 Diabetes is approximately 10 times more prevalent than Type 1, yet it is preventable. By addressing obesity and sedentary lifestyles people at high risk of developing Type 2 diabetes can significantly reduce the likelihood of actually getting it.

Through the HSE's Quality & Clinical Programmes, we are seeking to reduce the risks of people getting the condition, to improve the quality of life for people susceptible to diabetes, and to minimise the onset of complications in those who already have it.

The management and care of diabetes is significantly enhanced through multifaceted interventions based upon the use of an EHR. As part of the National Integrated Services Framework for the EHR an electronic 'Diabetes Dataset' will be hosted within the programme.

As the programme advances, the diabetes dataset will gradually be rolled up into national systems, the national ICT dataset, and Summary Care Record. This site facilitates the sharing the advancement of this endeavour, and offers a general collaborative and document management environment for this purpose.

Relevant project material can be accessed through the 'Shared Document' link on the left hand side of this web page.



Useful Project Links

Type	Edit	URL	Notes
There are no items to show in this view of the "Links" list. To add a new item, click "New".			
Add new link			

Done

Local intranet

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3 Windows Explorer

2 Microsoft Office P...

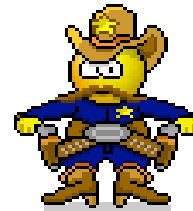
National Diabetes Pro...

Microsoft Excel

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17:29

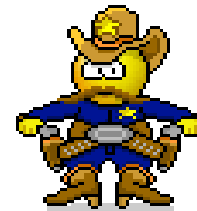
WHEN FIRST PROPOSED



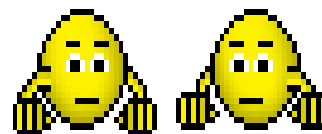
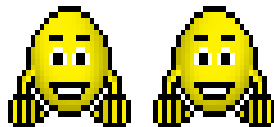
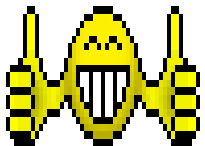
Then...



WHEN FIRST PROPOSED



Then & Now



END

