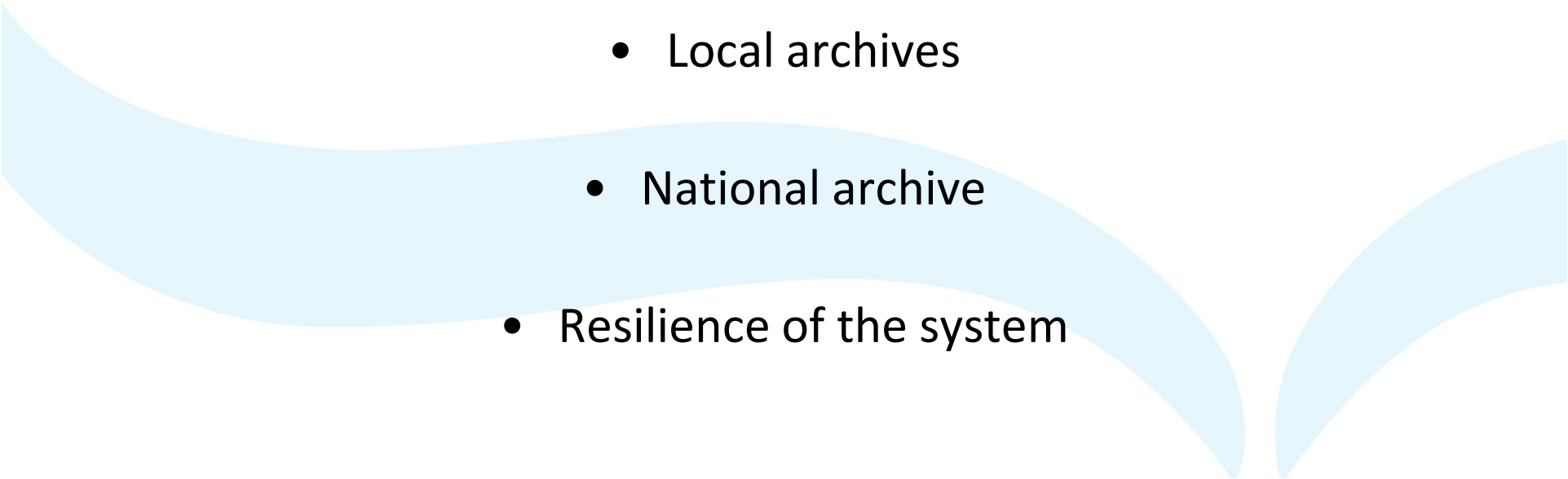


Scottish PACS Programme

Aileen MacLennan
Director, Diagnostics
NHSGG&C

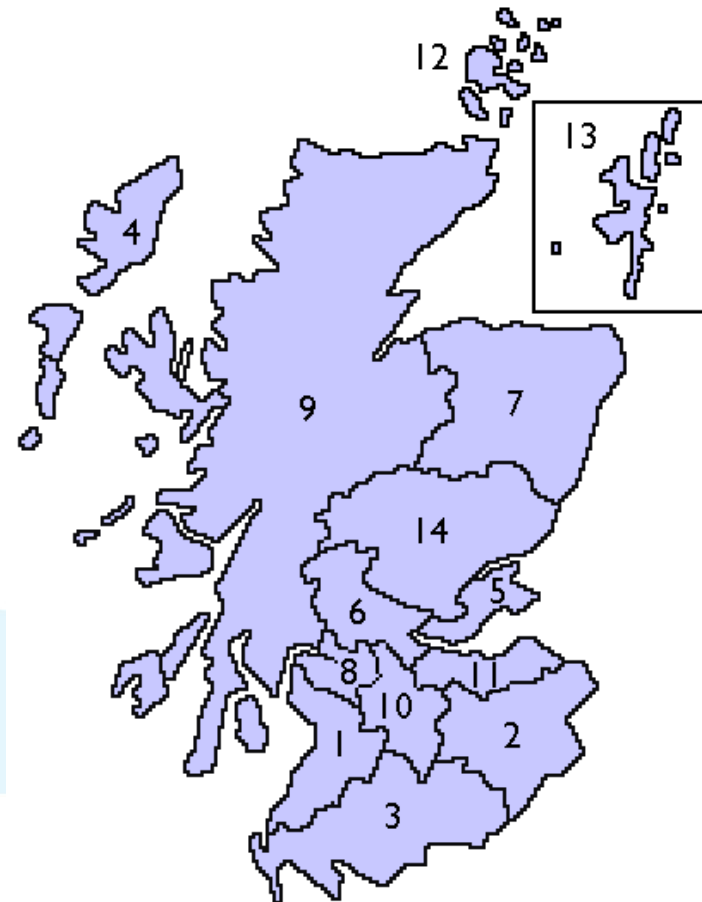
Patients at Centre

- EPR
 - Single RIS
 - Single PACs
 - Local archives
 - National archive
 - Resilience of the system
- 

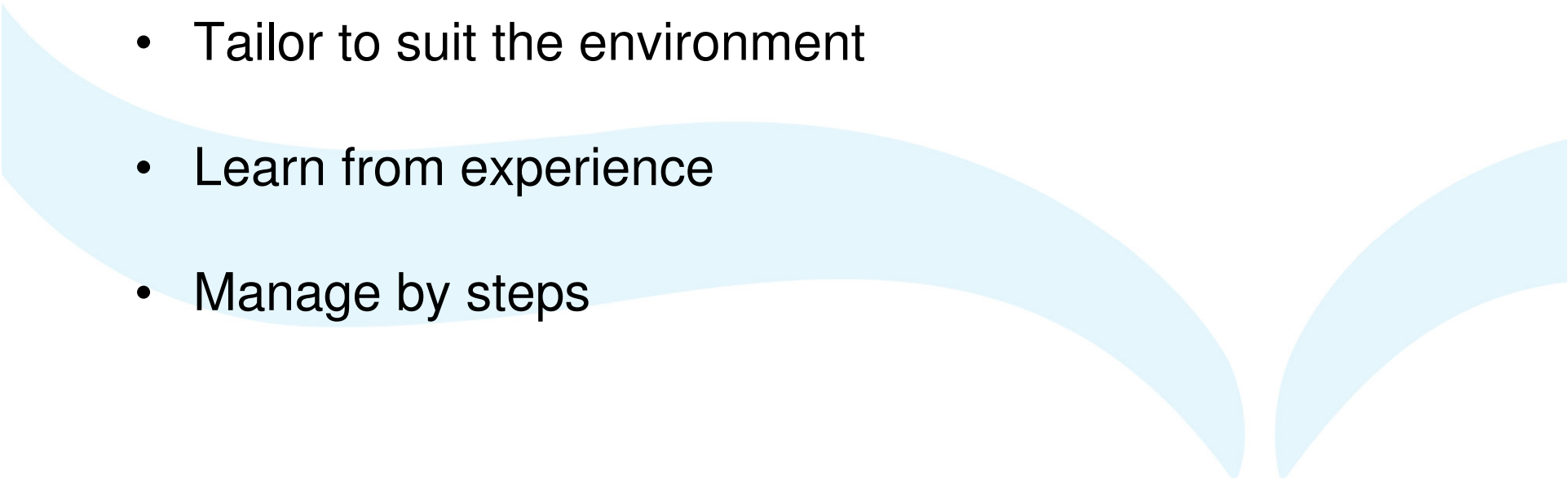
Health Board areas

- **NHS Scotland Health Boards**

- 1 [NHS Ayrshire and Arran](#)
- 2 [NHS Borders](#)
- 3 [NHS Dumfries and Galloway](#)
- 4 [NHS Western Isles](#)
- 5 [NHS Fife](#)
- 6 [NHS Forth Valley](#)
- 7 [NHS Grampian](#)
- 8 [NHS Greater Glasgow and Clyde](#)
- 9 [NHS Highland](#)
- 10 [NHS Lanarkshire](#)
- 11 [NHS Lothian](#)
- 12 [NHS Orkney](#)
- 13 [NHS Shetland](#)
- 14 [NHS Tayside](#)

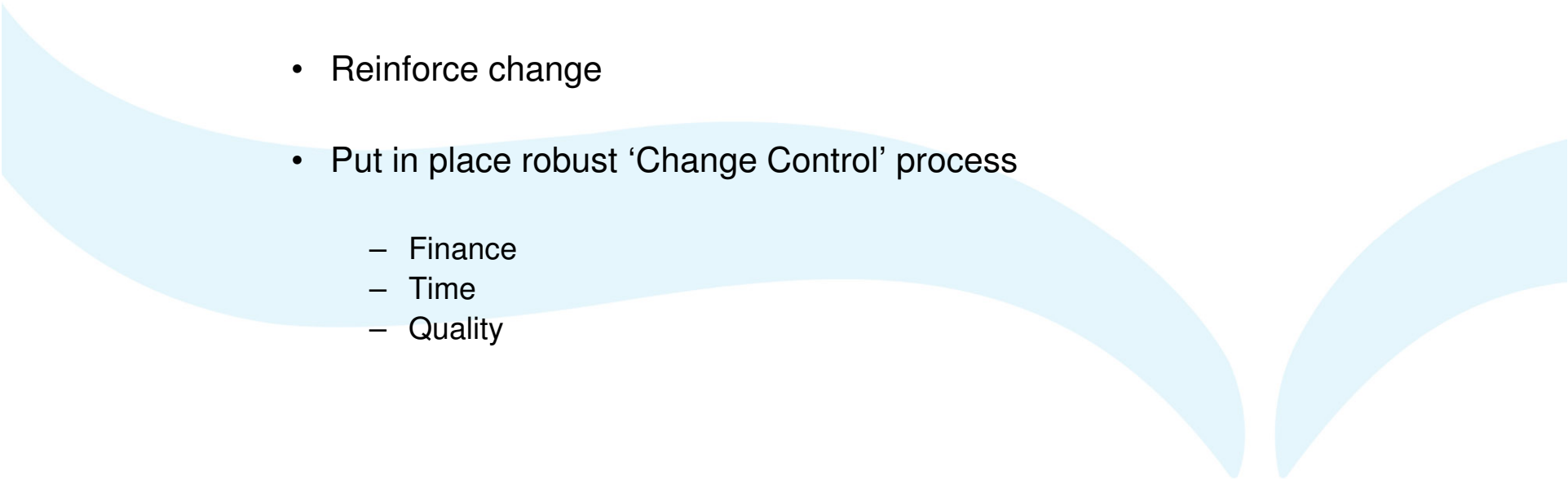


Project Management of PACs in Scotland

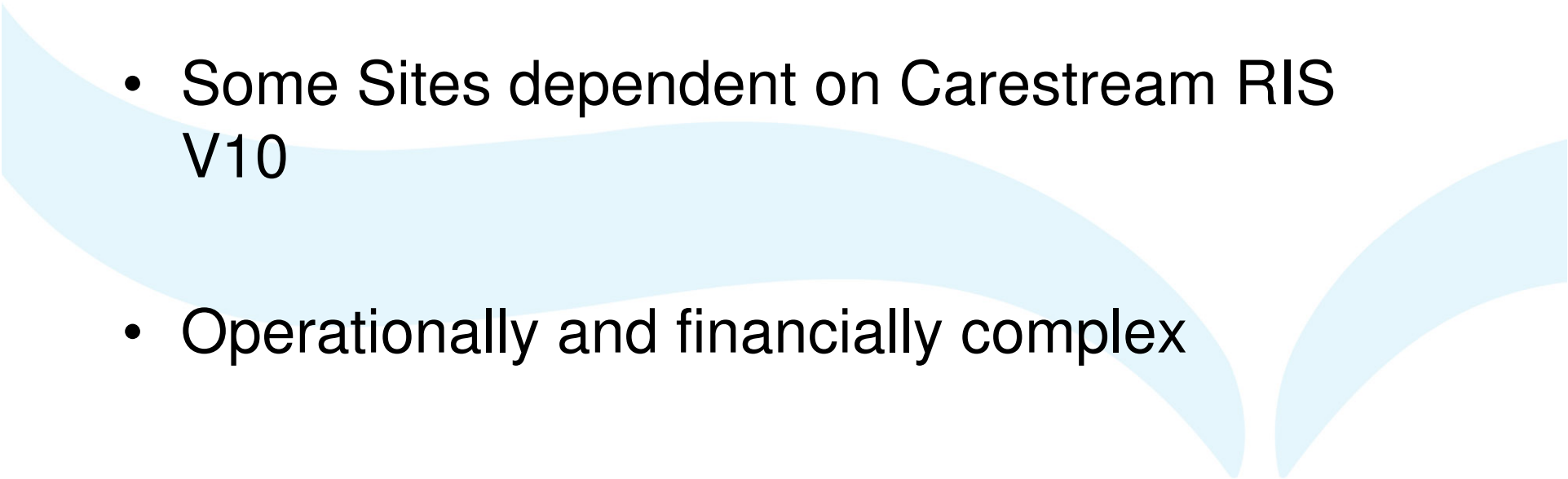
- Business Justification
 - Manage by exception
 - Focus on products
 - Tailor to suit the environment
 - Learn from experience
 - Manage by steps
- 

Change Control

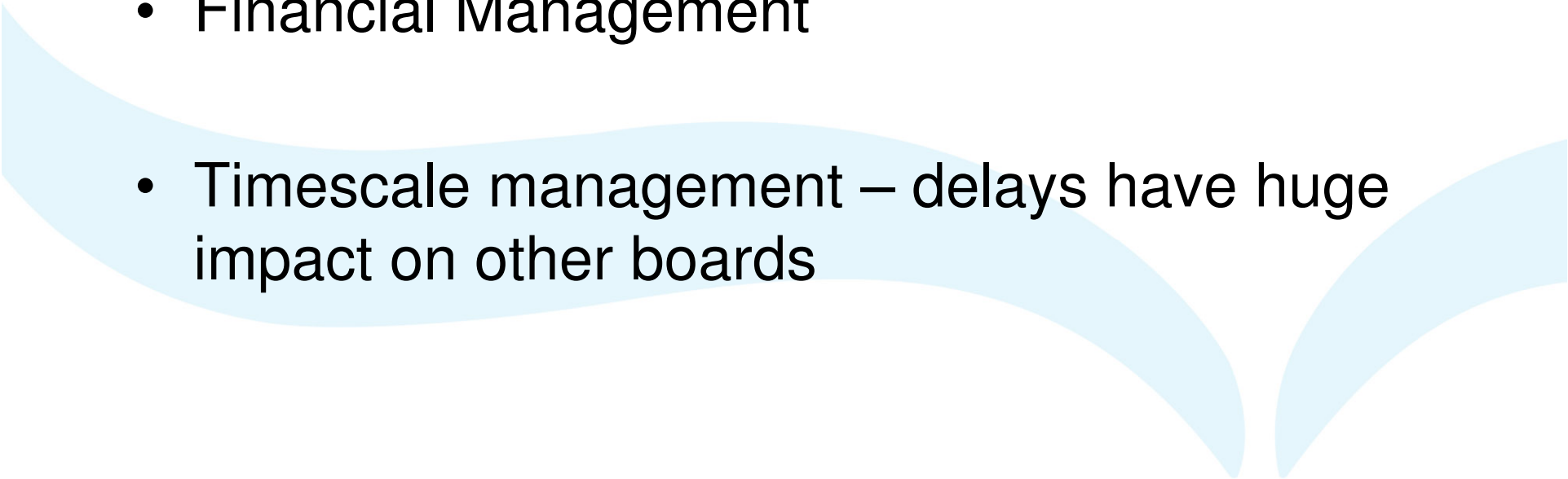
The Sudden Realisation: “The Project's Going Live“

- Develop robust Go-Live Plan
 - Focus on Transformational change – lasting change!
 - Communicate – Why?
 - Model behaviours
 - Reinforce change
 - Put in place robust ‘Change Control’ process
 - Finance
 - Time
 - Quality
- 

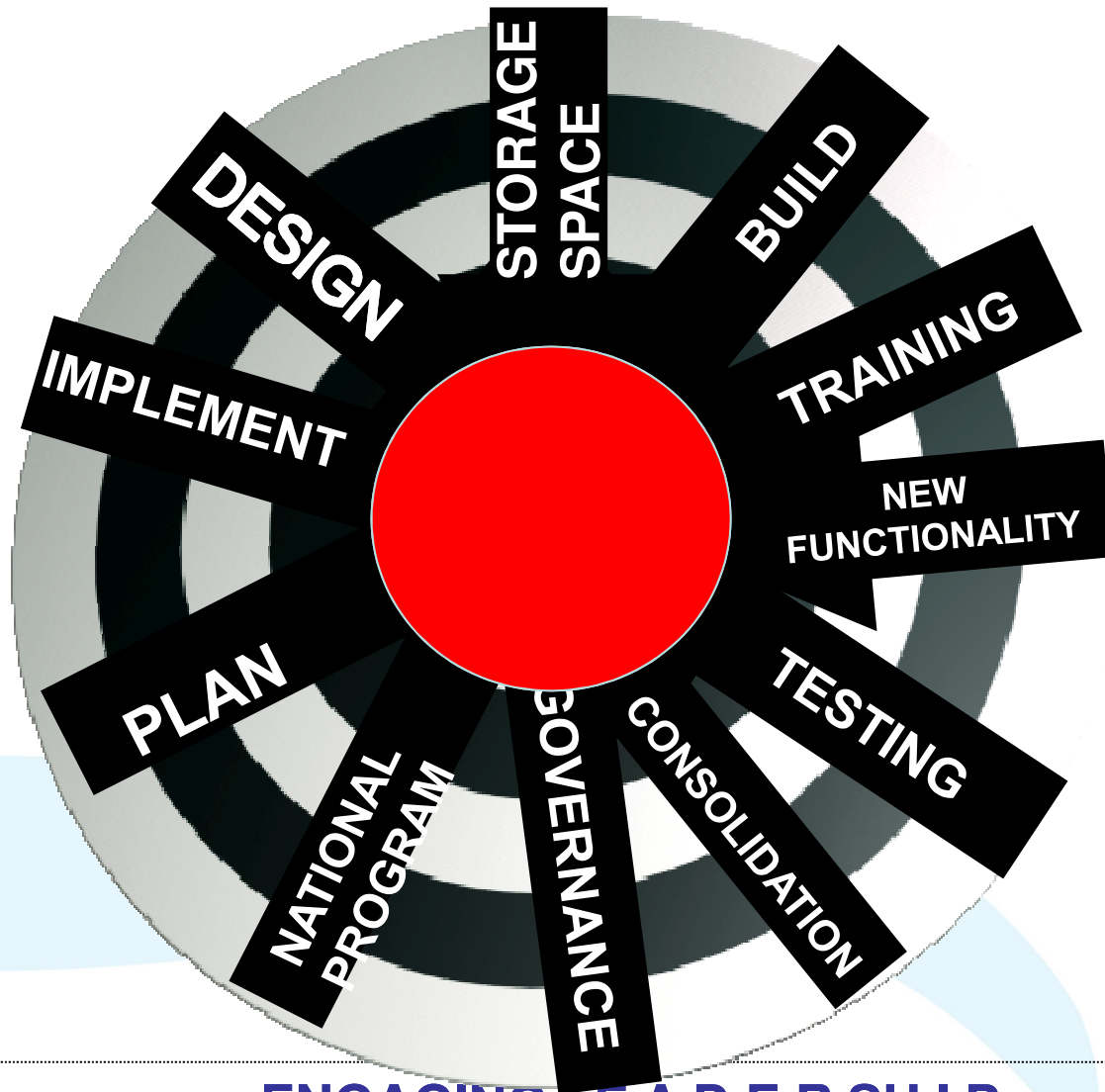
Scottish V11 Rollout

- National Program
 - Largest country-wide implementation in the world
 - Some Sites dependent on Carestream RIS V10
 - Operationally and financially complex
- 
- A light blue decorative graphic consisting of several overlapping, curved shapes that resemble stylized waves or a modern logo element, positioned at the bottom of the slide.

Challenges with National Rollout

- Differing needs across boards
 - Technology different at each board
 - Financial Management
 - Timescale management – delays have huge impact on other boards
- 

PACS v11



G
O
V
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R
N
A
N
C
E

ENGAGING LEADERSHIP

Key Milestones in PACS V11 Program

August 2012 ----- February 2015

Project
Inception

NHS GG&C
Deployment
Starts

NHS GG&C
Deployment
Complete

Project
Completion

Atos Data
Centre
Build

NHS Fife
Deployment

NHS Forth
Valley
Deployment

NHS
Highland
Deployment

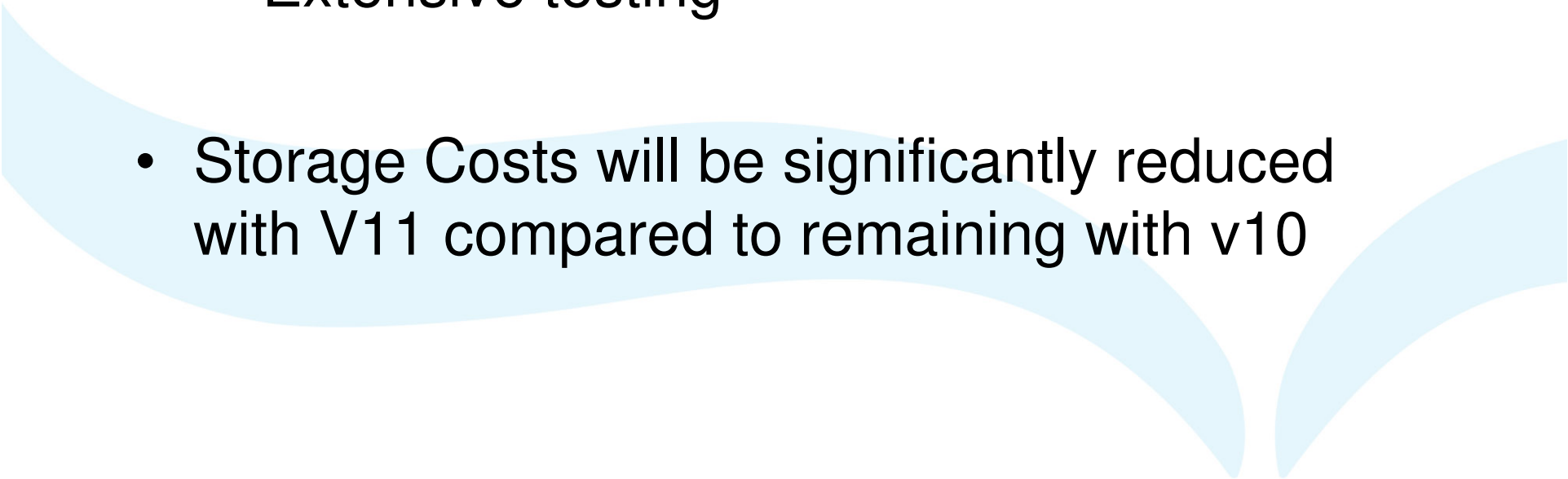
NHS
Ayrshire
Deployment

NHS
Lothian
Deployment
Starts

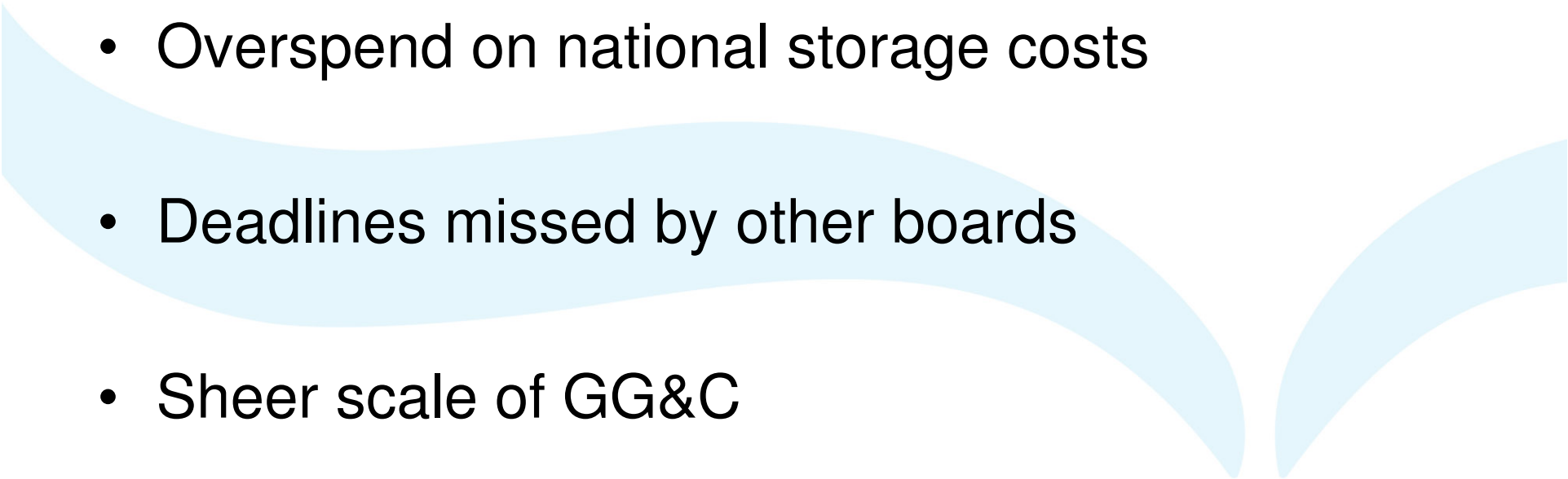
NHS
Lothian
Deployment
Complete

NHS
D&G
Deployment

NHSGGC National Refresh

- Largest and most complex
 - Instance consolidation
 - Significant Data Migration
 - Extensive testing
 - Storage Costs will be significantly reduced with V11 compared to remaining with v10
- 

NHSGGC V11 Rollout - Risks and Issues

- Competing resources with New SGH and wider ASR program
 - Complicated instance consolidation
 - Overspend on national storage costs
 - Deadlines missed by other boards
 - Sheer scale of GG&C
- 

NHSGG&C V11 Rollout

Pre V11 rollout

North Glasgow

GGH

WIG

Stobhill

GRI

RHSC

South Glasgow

SGH

VIC

INS

Clyde

IRH

VOL

RAH

NHSGG&C V11 Rollout

Post V11 rollout

North
Glasgow

**GGH &
WIG**

**Stobhill &
GRI**

RHSC

South
Glasgow

SGH & VIC

INS

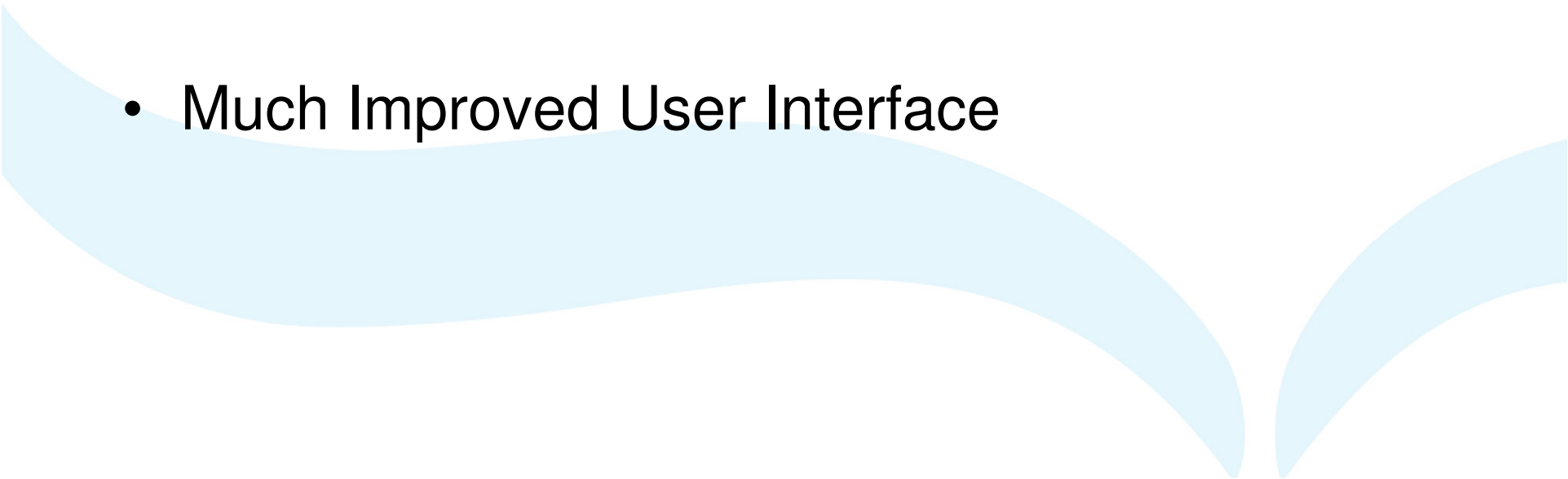
Clyde

IRH

VOL

RAH

Key V11 Benefits

- Global Work lists (GWL)
 - Better Image Compression
 - Much Improved User Interface
- 

Key V11 Benefits Lesion Management

The screenshot displays a medical software interface with a central CT scan image. On the left, a 'Bookmark List of [redacted]' window is open, showing a table of lesion data. On the right, a 'Report In Progress' window is open, featuring two line graphs and three data tables: 'Target Lesions', 'Findings', and 'Change Over Time'. The interface includes a top menu bar with options like 'Image', 'Graphics', 'Reporting', 'Layout', 'Comparison', 'Lesions', 'DP', and 'Export'. A toolbar below the menu contains various icons for workflow, measurements, and markers.

Bookmark List of [redacted]

No.	Tool	Bookmark Description	S...	Length (mm)	D...	Volume	Lon...	Tar...
Follow-Up: F01								
-	Segmentation	Lesion (Lung)	-	80		51	16719.5 (-48.5%)	Target
-	Segmentation	Lesion (Lung)	-	84		581.5	11.3	Target
Follow-Up: F02								
-	Segmentation	Lesion (Lung)	-	139		57	364.6 (+11.6%)	Target
-	Segmentation	Lesion (Lung)	-	151		184	2.8	Target
Follow-Up: F03								
-	Segmentation	Lesion (Lung)	-	141		-268	273.3 (-4.6%)	Target
-	Segmentation	Lesion (Lung)	-	153		518.0	10.2	Target
Follow-Up: F04								
-	Line		-	113	11.3 (-7.6%)			
-	Line	T6 metastasis	-	119	10.5			

Report In Progress

Target Lesions

Name	Target	Description	Series	Image	Long Diameter (mm)	Short Diameter (mm)	Volume (mm ³)
B02 (F02)	Target	Lesion (Lung)	5014	139	11.6	3.8	364.6
B01 (F01)	Target	Lesion (Lung)	5014	80	48.5	31.3	16719.5
B03 (F03)	Target	Lesion (Lung)	5014	141	6.7	5	273.3

Sum of target lesions: **66.7mm (Long)**

The automatic segmented lesions may not have been approved or adjusted.

Findings

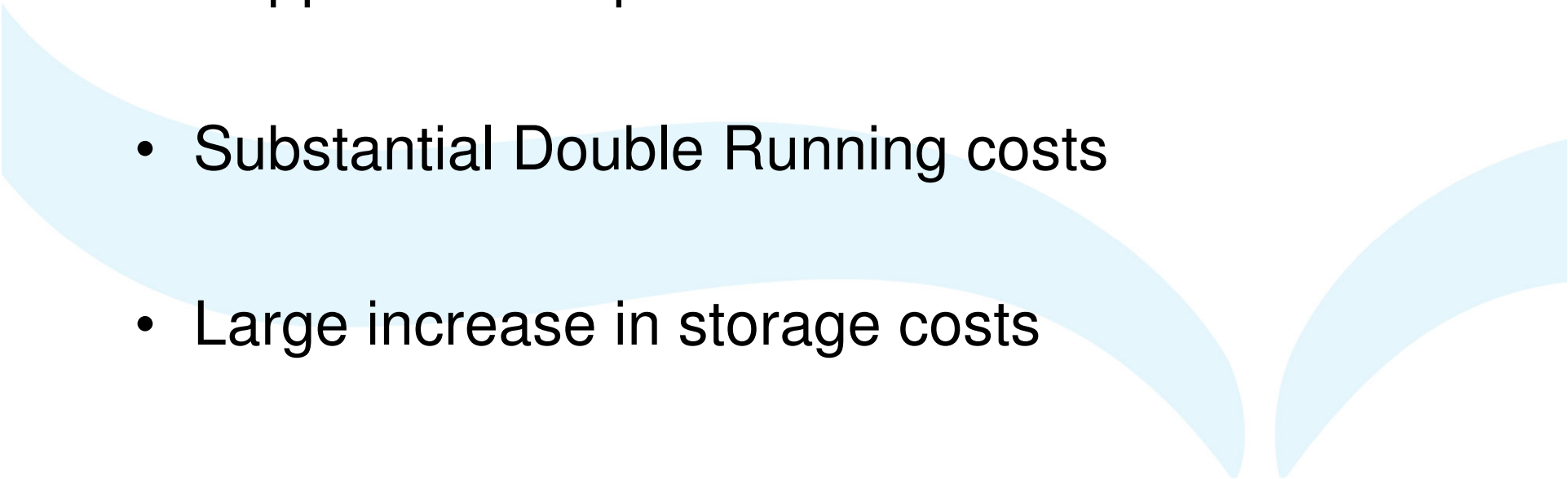
Name	Tool	Description	Series	Image	Length (mm)	Area (mm ²)
B04 (F04)	Line		5014	113	11.3	-

Change Over Time

Name	Target		Baseline 2012-01-31	2012-10-05 (Current)
F01 Lesion (Lung)	Target	Volume (mm ³)	581.5 (-)	16719.5 (+2775.2%)
		Long (mm)	11.3 (-)	48.5 (+329.5%)
		Short (mm)	8.5 (-)	31.3 (+269.9%)
F03 Lesion (Lung)	Target	DT (Days)		51
		Volume (mm ³)	518 (-)	273.3 (-47.2%)
		Long (mm)	10.2 (-)	6.7 (-34.6%)

Buttons: Preview Report, Save Report, Export Report..., Close

Funding

- Rollout funded by Scottish Government
 - Hardware funded by boards
 - Support costs split between boards and NSS
 - Substantial Double Running costs
 - Large increase in storage costs
- 

Storage Cost Drivers

Investments in new scanners, 64, 128, 256 CT

faster, thinner slices

Higher matrix images (1024 x 1024) This will give a 4x increase in size

“Real time” CT – e.g. cardiac CT angiography. 3000-5000 slices common

Storage of 3D reformats.

Changes in clinical practice inc more detailed imaging techniques

18 weeks increasing throughput

Technology driven clinical practice

Service changes e.g. mainstreaming of non-invasive cardiology techniques

Data Retention policy

Breast Screening

- National Digitisation program
 - Mobile and static
 - Completion by March 2015
 - Underpinning technology
 - Carestream PACS
 - ATOS RIS
- 