

## **Diagnostic Imaging Equipment**

### **Installed Equipment Base, Age Profile and Equipment Management**

#### **Background**

Changes in health care technology and clinical practice mean that increasingly complex diagnostic imaging equipment is being used against a background of legal requirements with which device manufacturers and users must comply, together with an increased scrutiny about the quality and safety of care being provided by HSC organisations.

At a strategic level, National Audit Office<sup>1</sup> and Audit Scotland<sup>2</sup> reports into Equipment Management highlighted significant shortcomings in the strategic management of medical device assets by the respective Departments of Health - the Health Departments leadership role in the management of medical devices, including performance management and accountability information for medical devices.

At an operational level, ensuring the safe, effective and efficient management of medical device assets is currently partially covered through compliance with the Criterion contained in the Medical Device and Equipment Management Controls Assurance Standard. This would also cover performance management, governance and accountability. However, analysis of compliance levels against key criteria would indicate that the assessed compliance levels may not accurately reflect the operational position.

The rapid development of medical device technology to meet clinical practice needs means that the useful operational life of medical devices continues to contract with the major device asset base rapidly becoming redundant and not meeting standards established by professional bodies such as the Royal College of Radiologists (RCR).

---

<sup>1</sup> National Audit Office: The Management of Medical Equipment in NHS Acute Trusts in England, 1999

<sup>2</sup> Scottish Audit Office: Equipped to Care, 2001

Table 1 illustrates the equipment age profile in 2005/2006 against the equipment age profile in 2009/2010 across high value medical devices used in Diagnostic Imaging e.g. CT, X-Ray, Screening etc.:

<b>Diagnostic Imaging Medical Device Age Profile</b>	<b>% in age profile 2005/2006</b>	<b>% in age profile 2009/2010</b>
< 5 years old ( <b>acceptable</b> )	52	48
> 5 years old and < 10 years old ( <b>requires planned replacement</b> )	20	34
> 10 years old ( <b>considered technically and clinically redundant</b> )	29	18

Table 1

This indicated an ongoing shortfall in planning at Trust level and the necessary strategic planning and priority setting at commissioning and policy levels for planning and funding the replacement of this type of equipment against service delivery models and clinical need.

The implementation of the Managed Equipment Service (MES) at the Royal Group of Hospitals and the Cancer Centre at Belfast City Hospital has maintained an effective operational imaging equipment base meeting the necessary performance standards at these locations. However, without effective planning, imaging equipment falling outside of the MES will result in a significant amount of equipment falling into the technically and clinically redundant category within a short period of time.

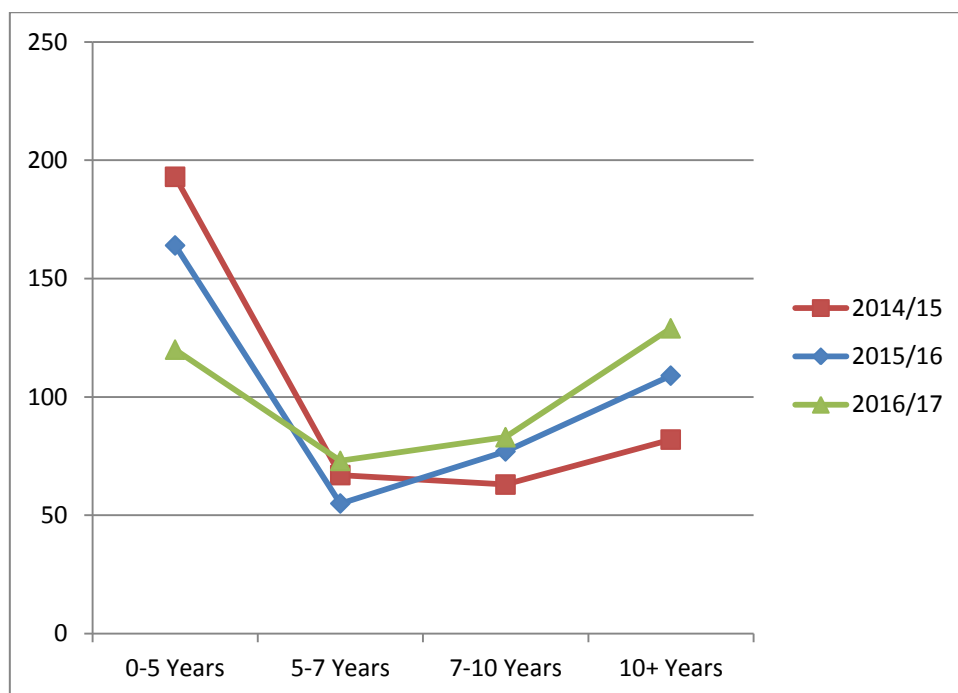
### **Strategic Asset Management of Medical Devices (SAMMD)**

To assist HSC Trusts in establishing a strategic view to equipment management, Health Estates Investment Group established a Strategic Asset Management of Medical Devices (SAMMD) initiative in 2010/2011, focused on the replacement of a limited range of imaging and diagnostic equipment categorised as clinically and technically redundant and which would be considered as vital to maintaining service delivery to patients.

Due to annual nature of the capital funding arrangements for the initiative, the equipment value tended to be below £500k (with minimal estates infrastructure investment to allow procurement to be achieved in-year). A key stipulation of the

initiative for equipment replacement was that proposals would not cover any additional revenue requirement. This approach has resulted in significant improvements in the age profile and the technology utilised in a range of diagnostic imaging modalities.

Graph 1 illustrates the overall effect of the limited SAMMD funding provided across all modalities with the level of equipment plotted against age profile. The investment has resulted in “flattening” the age profile by reduced the level of equipment falling into the 0-5 year age profile however with an increase in the level of equipment falling into the 5-10 and over 10 year age profiles. To achieve a balanced profile across all age profiles, further planning would be necessary and agreed regional action reached on significant investment areas such as CT and MRI whilst continuing to maintain momentum in effective equipment management that has been achieved to a degree over the period of SAMMD funding from 2010 to 2015.



Graph 1

### Analysis of Equipment Age by Modality

The current age profile for the imaging equipment contained in the Diagnostic Imaging database by modality is provided at Annex A with the Total Diagnostic Imaging Equipment by Age across all Trusts provided at Annex B.

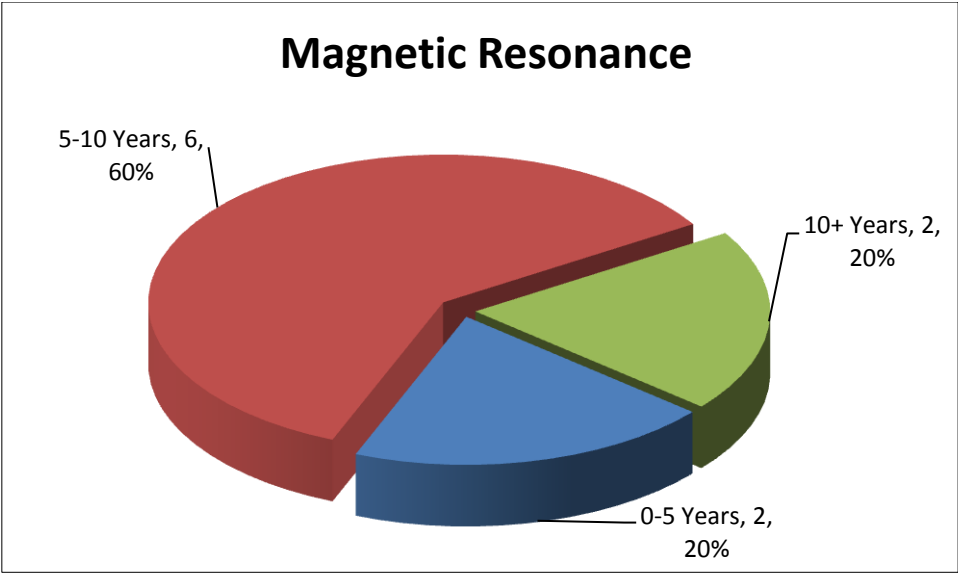
This information may not be entirely accurate depending on the level of information provided by HSC Trusts to enable the Diagnostic Imaging Database to be maintained effectively.

The Diagnostic Imaging Equipment only relates to equipment held and managed by Radiology Departments. Therefore not covered in the data is equipment in Cardiology, Maternity or under the Breast Screening Programme (Mammography). Similarly anything under Managed Equipment Service PFI Contracts is not listed as this information is not held centrally.

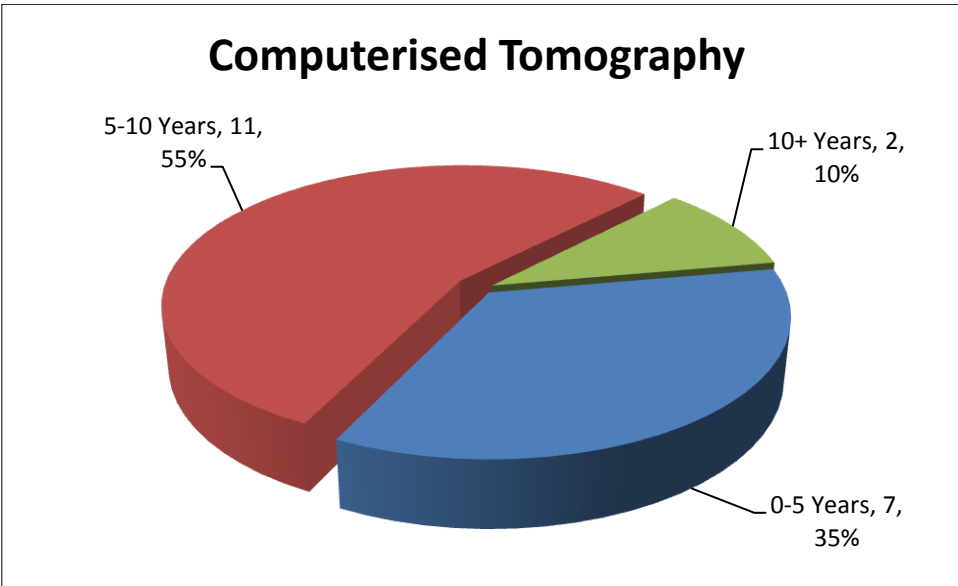
For some of the clinical techniques outlined in the Cardiac Imaging section, specific information is not held centrally such as that for cardiac ultrasound. Similarly whether the functionality of the device i.e. CT/MRI can do some of the cardiac imaging requirements, we do have that specific data that indicates the accurate use of the device across services.

However, analysis of the information available across a number of the modalities illustrates the impact that SAMMD investment has had on the age profile of a number of these modalities and gaps in investment.

Charts 2 and 3 illustrate the age profile of installed MRI and CT. Limited SAMMD funding has been provided for MRI due to the costs associated with this type of equipment installation including the necessary estates infrastructure required if it is a new installation. With 60% of the MRI equipment base within the 5-10 year age profile (6 installations), the installed MRI equipment base is acceptable however action would need to be taken to plan for the necessary equipment replacement to meet RCR guidelines including replacement of the 2 installations exceeding the 10 year RCR guideline limit.

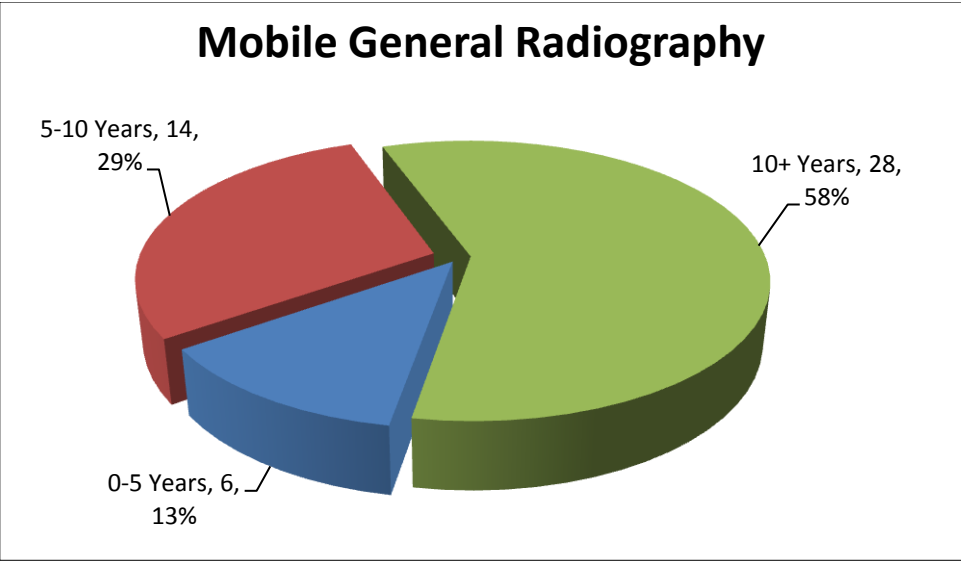


**Chart 2 MRI**



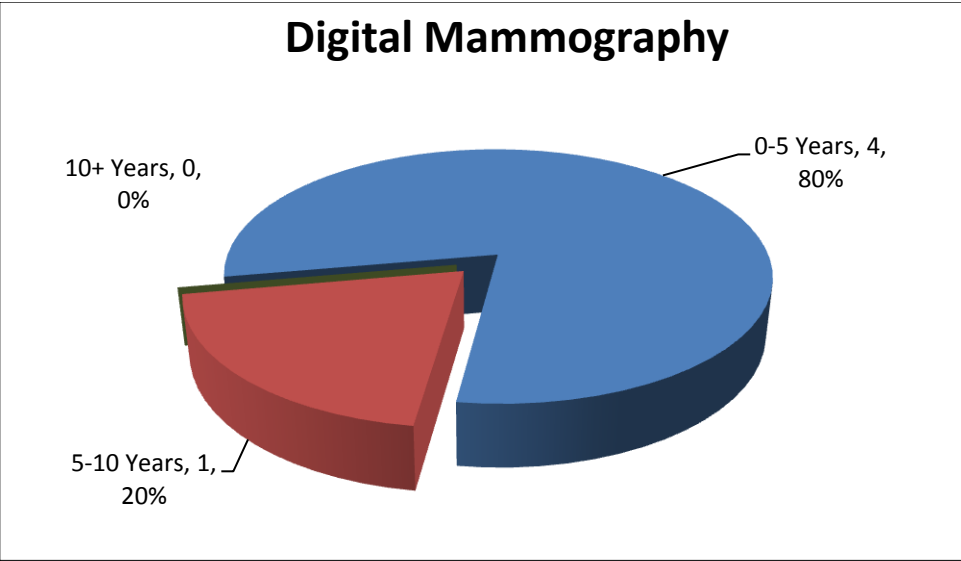
**Chart 3 CT**

The position for CT is broadly similar to that for MRI with 55% of the CT equipment base within the 5-10 year age profile (11 installations). Action would however need to be taken to plan for the necessary equipment replacement to meet RCR guidelines including replacement of the 2 installations exceeding the 10 year RCR guideline limit.



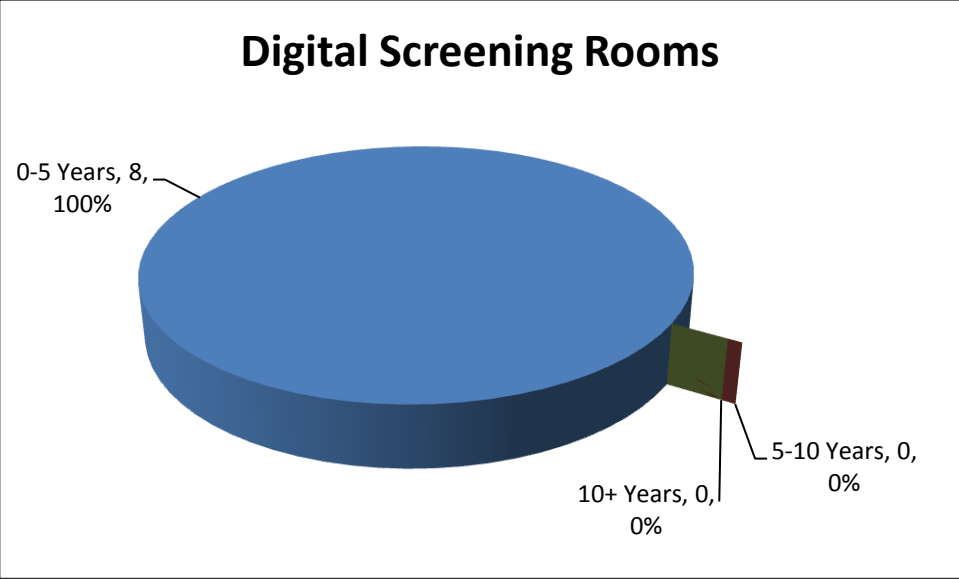
**Chart 4 – Mobile General Radiography**

The position with Mobile General Radiography is illustrated in Chart 4. Over 58% of the available equipment base is over the RCR 10 year age profile (28 units).

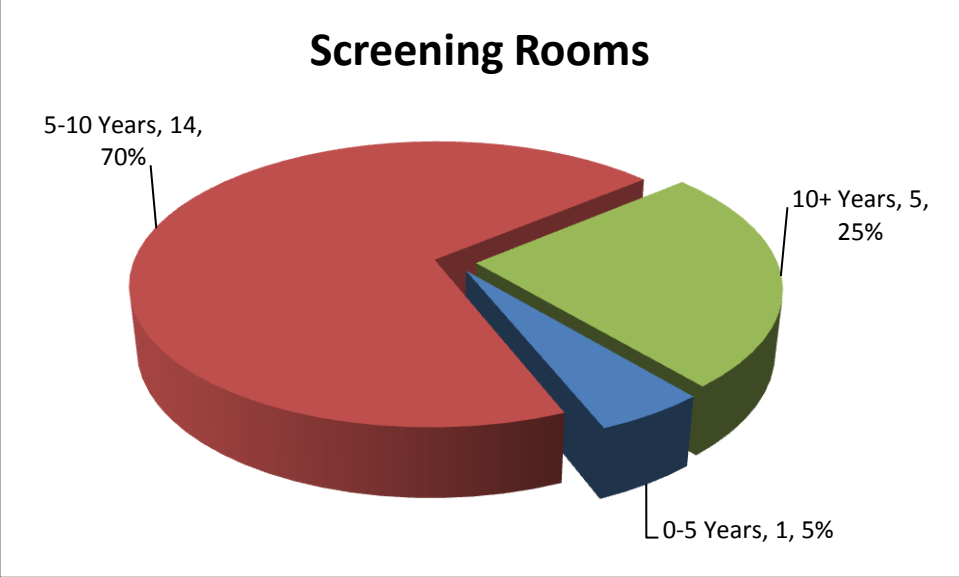


**Chart 5 – Digital Mammography**

The position with Digital Mammography as illustrated red in Chart 5 is positive as a result of the implementation of the Regional Digital Mammography project

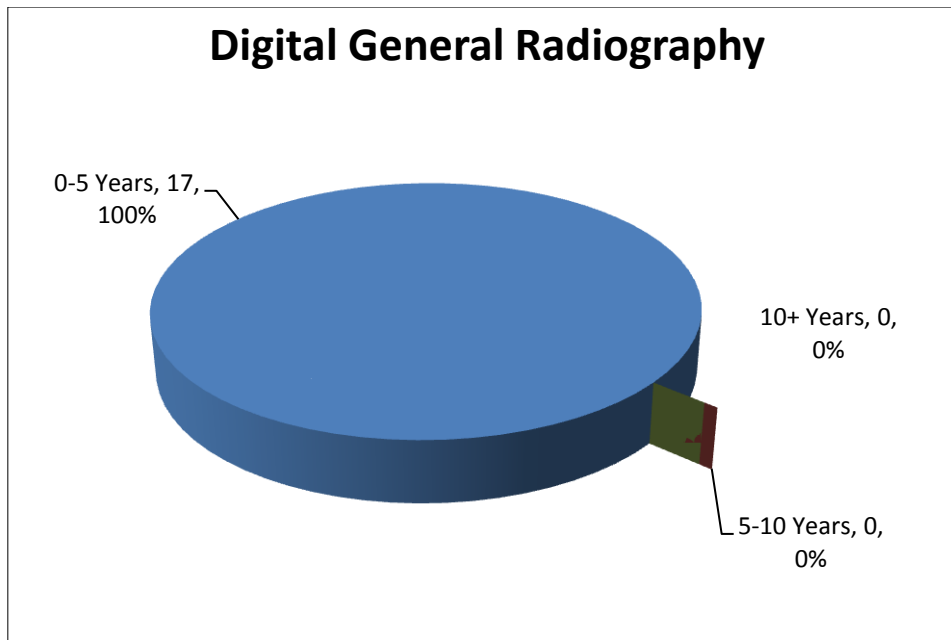


**Chart 5 – Digital Screening Rooms**

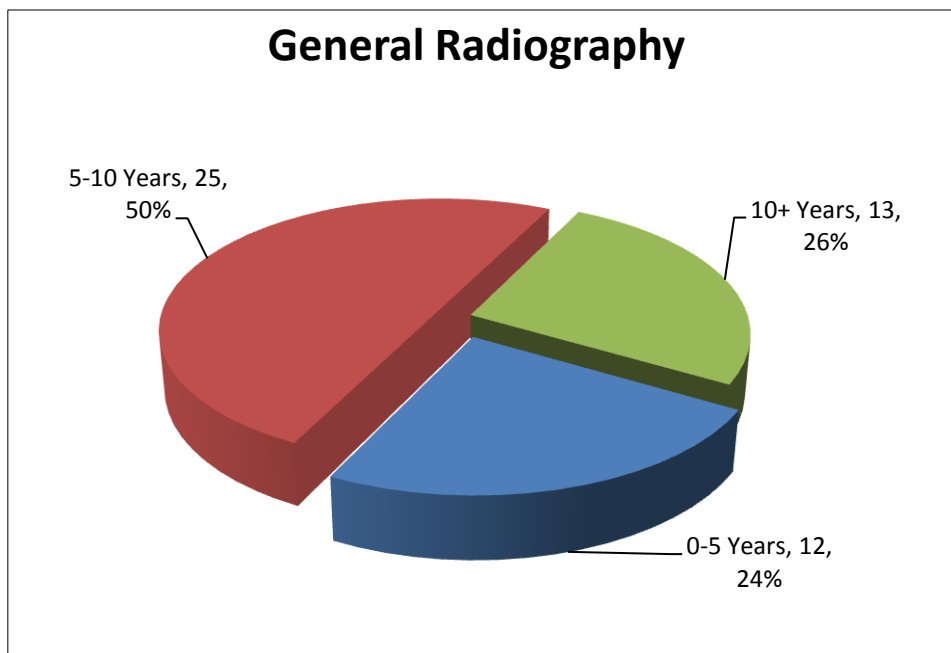


**Chart 6 – Screening Rooms**

Charts 5 and 6 need to be considered together given that Chart 5 illustrates the investment in digital technology with the current non-digital technology installed equipment base illustrated in Chart 6.



**Chart 7 – Digital General Technology**



**Chart 8 – General Radiography**

Likewise, Charts 7 and 8 should also be considered together given that Chart 7 illustrates the investment in digital technology for general radiology with the current non-digital technology installed equipment base illustrated in Chart 8.



The level of SAMMD capital investment allocated to HSC Trusts over the period from 2010 to 2015 is provided at Annex C.

### **Future Investment**

It is clear that the capital financial context remains very challenging for future years however notwithstanding the availability or otherwise of an appropriate funding stream, HSC Trusts should be managing their equipment assets as an integral part of their business and delivery planning.

The scheduling of replacement and the investment in new equipment needs to be carefully planned to ensure service continuity, balanced against the opportunities for achieving further value for money through regional procurement, leasing arrangements or consideration of a regional/cluster MES programme which would need to be explored as part of the business case process.

In conclusion, there is a clearly identified requirement for embedding strategic equipment management and thinking into the design and delivery of services. It is also clear that such an approach needs to be refocused into a longer-term equipment management programme, taking into consideration the investment decisions surrounding the current and future planned physical health and social care infrastructure.

To assist in this, a strategic planning framework for major diagnostic imaging equipment such as MRI and CT scanners has been developed which indicates a significant level of capital funding of around £62.8m over an eight year programme to meet the objective of maintaining the equipment age profile within acceptable limits. This is provided at Annex D and it does not include the necessary planning for other modalities which is required to correct and maintain the recommended age profiles.

However, the development of such a major equipment planning framework would provide an initial framework for consideration by HSC Trusts, the Commissioner and the Department to collectively take forward. Its successful implementation will require the coordinated approach of all stakeholders including the Department, the

HSC Board, Trust Capital Planning teams, Trust Directors of Imaging Services and Imaging Professionals. The proposal to establish an Imaging Board is seen as a prime enabler to deliver this objective.

## Annex A: Diagnostic Imaging Equipment by Modality and Location - December 2015

<b>MODALITY Magnetic Resonance (MR)</b>				
			RCR replacement guidance 7 years	
TRUST	Number	LOCATION	Date of Installation	Replacement year
Belfast	1	Belfast City	25/07/2003	2010
	1	Mater	31/01/2007	2014
	1	Musgrave Park	19/03/2002	2012
	1	Musgrave Park	22/08/2005	2009
	1	NEW RBHSC (Not operational as yet)	2015	2022
		[MES - RVH x 2 & NICC - not included in figures]		
Northern	1	Antrim [planned replacement in 2015]	28/05/2004 - 2015	2011 – 2022
Southern	1	Craigavon	14/04/2014	2021
	1	Craigavon	11/05/2015	2022
South Eastern	1	Ulster	13/02/2012	2019
	1	Ulster	24/04/2013	2020
Western	1	Altnagelvin	2011	2018
	1	South West	15/05/2012	2019
		[Proposed Altnagelvin Radiotherapy MR not included in figures but planned installation in 2016]	2016	2023
<b>Total</b>	<b>12</b>			

<b>MODALITY Computerised Tomography (CT)</b>				
			RCR replacement guidance 7 years	
TRUST	Number	LOCATION	Date of Installation	replacement year
Belfast	1	Belfast City	03/11/2005	2012
	1	Belfast City	02/11/2006	2013
	1	Mater	16/03/2015	2022
	1	Musgrave Park	16/03/2015	2022
	1	RBHSC	31/03/2014	2021
		[MES - RVH x 2 & NICC x 2 not included in figures]		
Northern	1	Antrim	16/12/2011	2018
	1	Antrim	30/03/2011	2018
	1	Causeway	18/03/2014	2021

	1	Mid Ulster	27/09/2007	2014
--	---	------------	------------	------

Southern	1	Craigavon	22/05/2007	2014
	1	Daisyhill	16/11/2010	2017
	1	South Tyrone	18/06/2014	2021

South Eastern	1	Ulster	29/05/2015	2022
	1	Ulster	04/03/2008	2015
	1	Ulster	23/10/2007	2014
	1	Downe	12/06/2009	2016
	1	Lagan Valley	26/04/2007	2014

Western	1	Altnagelvin	05/04/2011	2018
	1	Altnagelvin	13/10/2005	2012
	1	South West	15/05/2012	2019
	1	Tyrone County	16/06/2006	2013
		[Proposed Altnagelvin Radiotherapy CT x 2 not included in figures but planned for 2016)		

Total	21
-------	----

### POSITRON EMISSION TOMOGRAPHY

#### MODALITY (PET)

TRUST	PET	LOCATION	Date of Installation	replacement year
Belfast	1	RVH - part of MES		

### Radio Nuclide (Gamma Camera/Spec-

#### MODALITY CT)

TRUST	Number	LOCATION	Date of Installation	replacement year
Belfast	1	Belfast City	01/04/2003	2010
	1	Belfast City	23/01/1998	2005
	1	RBHSC	01/04/2006	2013
Northern	1	Antrim	01/04/2005	2012
Southern	1	Craigavon	15/02/2008	2015
	1	Craigavon	20/10/1999	2006
South Eastern		NO units in South Eastern Trust		

Western	1	Altnagelvin	13/04/2005	2012
	1	Altnagelvin	30/07/2013	2020

Total	8
-------	---

**Fluoroscopy/Screening rooms [Digital  
Screening Room (DSR) or Screening  
Room (SR)]**

MODALITY			RCR replacement guidance 7 years	
TRUST	Number	LOCATION	Date of Installation	replacement year

Belfast	1	Belfast City [DSR]	25/03/2011	2018
	1	Mater [DSR]	14/04/2015	2022
	1	RBHSC [DSR]	31/03/2012	2019
	1	RBHSC [DSR]	07/04/2014	2021
		[MES - RVH [DSR] not in calculations]		
	1	Belfast City [SR]	19/04/2004	2011
	1	Musgrave Park [SR]	05/03/2002	2009
		[MES - RVH x 2, NICC [SR] not in figures]		

Northern	1	Antrim [DSR]	06/06/2011	2019
	1	Antrim [DSR]	11/04/2011	2019
	1	Causeway [DSR]	05/04/2013	2020
	1	Causeway [DSR]	25/02/2013	2020
	1	Causeway [SR]	09/10/2005	2012
	1	Moyle [SR]	22/09/1987	1994
	1	Whiteabbey [SR]	27/10/2003	2010

Southern	1	Craigavon [DSR]	11/03/2011	2019
	1	Armagh [SR]	04/03/2004	2011
	1	Craigavon [SR]	20/05/2004	2011
	1	Daisyhill [SR]	22/12/2003	2010
	1	South Tyrone [SR]	06/04/2011	2019

South Eastern	1	Ulster [DSR]	28/03/2011	2019
	1	Downe [DSR]	03/07/2009	2016
	1	Lagan Valley	31/03/2004	2011

Western	1	South West [DSR]	22/05/2012	2019
	1	Altnagelvin [SR]	04/10/1999	2006

Total	23
-------	----

**MODALITY DEXA [Bone Densitometer]**

			RCR replacement guidance 10 years	
TRUST	Number	LOCATION	Date of Installation	replacement year
Belfast	1	Musgrave Park	21/07/2003	2013
	1	Musgrave Park	11/04/2006	2016
		[MES - RVH x1 not in figures]		
Northern	1	Braid Valley	01/04/2013	2023
Southern	1	South Tyrone	16/04/2012	2022
South Eastern	1	Bangor	03/09/2007	2017
	1	Lagan valley	02/05/2007	2017
Western	1	Altnagelvin	02/05/2002	2012
	1	South West	21/06/2007	2017
Total	8			

**MODALITY Plain Film [Digital (DXR) or General (GX)]**

			RCR replacement guidance 7/10 years	
TRUST	Number	LOCATION	Date of Installation	replacement year
Belfast	1	Belfast City [DXR]	07/04/2014	2021
	1	Mater [DXR]	30/01/2015	2022
	1	RBHSC [DXR]	01/05/2014	2021
	1	RBHSC [DXR]	04/07/2014	2021
	1	RBHSC [DXR]	21/12/1998	2005
	1	RBHSC [DXR]	01/08/2014	2021
		[MES - RVH x 9 & NICC x 2 not in figures]		
	1	Belfast City [GX]	13/01/2011	2021
	1	Belfast City [GX]	22/01/2007	2017
	1	Belfast City [GX]	20/02/2006	2016
	1	Belfast City [GX]	19/01/2009	2019
	1	Mater [GX]	17/07/2008	2018
	1	Mater [GX]	15/05/2008	2018
	1	Mater [GX]	14/08/2007	2017
	1	Musgrave Park [GX]	16/08/2006	2016
	1	Musgrave Park [GX]	27/09/2004	2014
	1	Musgrave Park [GX]	22/10/2002	2012
	1	Musgrave Park [GX]	27/09/2004	2014
	1	Musgrave Park [GX]	25/05/2013	2023

Northern	1	Antrim [DXR]	21/03/2010	2017
	1	Causeway [DXR]	04/09/2012	2019
	1	Causeway [DXR]	19/04/2012	2019
	1	Mid Ulster [ DXR]	12/06/2012	2019
	1	Mid Ulster [ DXR]	11/05/2012	2019
	1	Braid Valley [ DXR]	10/07/2012	2019
	1	Whiteabbey [ DXR]	29/05/2012	2019
	1	Whiteabbey [ DXR]	11/07/2012	2019
	1	Antrim [GX]	02/03/2007	2017
	1	Causeway [GX]	26/03/2001	2011
	1	Moyle [ GX]	07/05/1986	1996

Southern	1	Craigavon [DXR]	30/05/2014	2021
	1	Craigavon [DXR]	11/07/2014	2021
	1	Craigavon [DXR]	23/04/2014	2021
	1	Craigavon [DXR]	01/06/2011	2018
	1	Craigavon [DXR]	01/06/2012	2019
	1	Craigavon [DXR]	03/08/2012	2019
	1	Daisyhill [DXR]	23/03/2015	2022
	1	Daisyhill [DXR]	23/03/2015	2022
	1	Daisyhill [DXR]	08/04/2014	2021
	1	Portadown H/C [DXR]	08/06/2010	2017
	1	Banbridge [GX]	02/08/2007	2017
	1	Lurgan [GX]	21/02/2008	2018
	1	Armagh [ GX]	15/02/2006	2016
	1	South Tyrone [GX]	15/11/2002	2012
	1	South Tyrone [GX]	17/10/2007	2017

South Eastern	1	Ulster [DXR]	15/03/2014	2021
	1	Ulster [DXR]	15/03/2014	2021
	1	Ulster [DXR]	17/06/2013	2020
	1	Ulster [DXR]	23/03/2015	2022
	1	Ulster [DXR]	15/05/2013	2020
	1	Ulster [DXR]	15/03/2014	2021
	1	Downe [DXR]	25/06/2009	2016
	1	Downe [DXR]	24/06/2009	2016
	1	Lagan Valley [DXR]	15/03/2014	2021
	1	Ards [GX]	21/09/2009	2019
	1	Ards [GX]	11/01/2013	2023
	1	Bangor [GX]	10/04/2008	2018
	1	Lagan Valley [GX]	09/04/2004	2014
	1	Lagan Valley [GX]	02/09/2010	2020

Western	1	Altnagelvin [DXR]	01/12/2001	2008
	1	Altnagelvin [DXR]	22/03/2012	2019
	1	Altnagelvin [DXR]	01/06/2013	2020
	1	Altnagelvin [DXR]	12/05/2011	2018
	1	Altnagelvin [DXR]	10/04/2015	2022
	1	South West [DXR]	15/05/2012	2019
	1	South West [DXR]	01/06/2012	2019
	1	South West [DXR]	22/05/1012	2019

	1	Roe Valley [DXR]	13/03/2015	2022
	1	Tyrone County [DXR]	20/03/2014	2021
	1	Tyrone County [DXR]	14/11/2014	2021
		[Proposed Altnagelvin Radiotherapy DGX not in figures but planned for 2016]		
	1	Tyrone County [GX]	16/11/1998	2008

Total	70
-------	----

**MODALITY      Ultrasound [Radiology Departments only]**

TRUST	Number	LOCATION	Date of Installation	replacement year
-------	--------	----------	----------------------	------------------

Belfast	1	Belfast City	20/03/2014	2019
	1	Belfast City	20/03/2014	2019
	1	Belfast City	02/06/2008	2013
	1	Mater	03/01/2013	2018
	1	Mater	15/01/2013	2018
	1	Musgrave Park	10/01/2013	2018
	1	Musgrave Park	14/04/2010	2015
	1	RBHSC	31/03/2014	2019
	1	RBHSC	31/03/2014	2019
	1	RBHSC	31/03/2014	2019
	1	RBS	31/03/2000	2005
	1	RBS	27/03/2009	2014
	1	RBS	10/12/1996	2000
	1	RBS	01/08/1997	2002
		[MES - RVH x 7 not in figures]		

Northern	1	Antrim	31/03/2011	2016
	1	Antrim	31/03/2011	2016
	1	Antrim	16/12/2013	2018
	1	Antrim	16/11/2009	2014
	1	Antrim	16/12/2013	2018
	1	Antrim	17/10/2011	2016
	1	Antrim	17/10/2011	2016
	1	Causeway	31/03/2012	2017
	1	Causeway	31/03/2012	2017
	1	Causeway	27/10/2014	2019
	1	Causeway	15/07/2010	2015
	1	Causeway	17/10/2011	2016
	1	Mid Ulster	14/05/2002	2007
	1	Mid Ulster	21/01/2005	2010
	1	Mid Ulster	23/11/2009	2014
	1	Mid Ulster	13/04/2007	2012
	1	Moyle	09/06/1995	2000
	1	Moyle	09/06/1995	2000
	1	Moyle	20/05/2005	2010
	1	Whiteabbey	18/11/2009	2014



	1	Whiteabbey	20/06/2001	2016
--	---	------------	------------	------

Southern	1	Armagh	19/11/2012	2017
	1	Craigavon	01/02/2012	2017
	1	Craigavon	24/05/2001	2006
	1	Craigavon	23/07/2010	2015
	1	Craigavon	01/03/2011	2016
	1	Craigavon	21/02/2005	2010
	1	Craigavon	01/06/1998	2003
	1	Craigavon	01/03/2011	2016
	1	Craigavon	12/11/2009	2014
	1	Daisyhill	20/07/2010	2015
	1	Daisyhill	01/03/2011	2016
	1	Portadown H/C	20/07/2010	2015
	1	South Tyrone	01/03/2011	2016

South Eastern	1	Ulster	11/05/2007	2012
	1	Ulster	15/10/2012	2017
	1	Ulster	31/03/2011	2016
	1	Ulster	31/03/2011	2016
	1	Ulster	26/08/2008	2013
	1	Ulster	26/08/2008	2013
	1	Downe	30/06/2009	2014
	1	Downe	18/02/2013	2018
	1	Lagan Valley	16/03/2012	2017
	1	Lagan Valley	03/12/2013	2018

Western	1	Altnagelvin	21/03/2013	2018
	1	Altnagelvin	21/04/2015	2020
	1	Altnagelvin	25/05/2012	2017
	1	Altnagelvin	25/05/2012	2017
	1	Altnagelvin	20/12/2001	2006
	1	Altnagelvin	27/03/2011	2016
	1	Altnagelvin	09/04/2008	2013
	1	Altnagelvin	24/04/2007	2012
	1	Altnagelvin	04/05/2010	2015
	1	South West	04/06/2012	2017
	1	South West	04/06/2012	2017
	1	South West	04/06/2012	2017
	1	South West	13/06/2012	2017
	1	South West	13/06/2012	2017
	1	South West	13/06/2012	2017
	1	South West	13/06/2012	2017
	1	South West	13/06/2012	2017
	1	South West	13/06/2012	2017
	1	South West	13/06/2012	2017
	1	Tyrone County	01/08/2011	2016
	1	Tyrone County	17/11/2014	2019

## Annex B: Equipment levels by modality and age – All Trusts

Age	YEARS	P E T**	M R	C T	CCL/ VL	SPE CT	G C	DS R	S R	D G X	G X	U S	U S*	B D	DM GX	M GX	D MII	M II	F P	FP D	C R	C RD	CB CT	DO PG	OP G	I/ O	D M A	M A	MA TR	FP MA	
0-1	2012/ 2013	1	1	1				1		11		22	21		5	1		2				1	1	1		3					
1-2	2011 /2012		1	2	1			3	1	2		7	7			1		3								1	1				
2-3	2010/ 2011			2				3		1	5	48	25		2	2		4			1	3			1	1	1				
3-4	2009/ 2010			1				1		3	2	15	12			1		2			7	6		1		1					
4-5	2008/ 2009			1							5	24	12		3	1		5							1	1	2	2			
	<b>Total 0-5 Years</b>	<b>1</b>	<b>2</b>	<b>7</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>1</b>	<b>17</b>	<b>1 2</b>	<b>11 6</b>	<b>77</b>	<b>0</b>	<b>10</b>	<b>6</b>	<b>0</b>	<b>1 6</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>10</b>	<b>1</b>	<b>2</b>	<b>2</b>	<b>7</b>	<b>4</b>	<b>2</b>	<b>0</b>	<b>0</b>	
5-6	2007 /2008			4	1		1		1		4	27	23	3	1	1		4			4						1		1	1	
6-7	2006/ 2007		1	4			1				6	12	6	1		1		2			1			1	1			2			
7-8	2005/ 2006		1	2	2		2		1		5	9	5			5		2			4	1			2	1					
8-9	2004 /2005		3	1					4		7	22	7			5		2			3				1	4		1			
9- 10	2003 /2004		1				1		8		3	7	4	1		2				2	7				3	7		1		2	
	<b>Total 5- 10 Years</b>	<b>0</b>	<b>6</b>	<b>1 1</b>	<b>3</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>1 4</b>	<b>0</b>	<b>2 5</b>	<b>77</b>	<b>45</b>	<b>5</b>	<b>1</b>	<b>14</b>	<b>0</b>	<b>1 0</b>	<b>0</b>	<b>2</b>	<b>1 9</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>7</b>	<b>1 2</b>	<b>1</b>	<b>4</b>	<b>1</b>	<b>3</b>	
	2002/ 2003		2	2	2		4		5		1 3	43	20	4		28		1 0	3		3					12	8		9	4	5
10+	<b>Total 10+ Years</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>1 3</b>	<b>43</b>	<b>20</b>	<b>4</b>	<b>0</b>	<b>28</b>	<b>0</b>	<b>1 0</b>	<b>3</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>12</b>	<b>8</b>	<b>0</b>	<b>9</b>	<b>4</b>	<b>5</b>	

## Key

<b>PET</b>	Photo Emission Tomography
<b>MR</b>	Magnetic Resonance
<b>CT</b>	Computerised Tomography
<b>CCL/VL</b>	Cardiac Catheter lab/Vascular Lab
<b>SPECT</b>	Single Photon Emission Computerised Tomography
<b>GC</b>	Gamma Camera
<b>DSR</b>	Digital Screening Rooms
<b>SR</b>	Screening Rooms
<b>DGR</b>	Digital General Radiography
<b>GR</b>	General Radiography
<b>US</b>	Ultrasound
<b>BD</b>	Bone Densitometer
<b>DMGX</b>	Digital Mobile General Radiography
<b>MGX</b>	Mobile General Radiography
<b>DMII</b>	Digital Mobile Screening
<b>MII</b>	Mobile Screening
<b>FP</b>	Film Processing
<b>FPD</b>	Film Processing Dental
<b>CR</b>	Computed Radiography
<b>CRD</b>	Computed Radiography - Dental
<b>CBCT</b>	Cone Beam CT - Dental
<b>DOPG</b>	Digital Ortho-Panograph - Dental

<b>OPG</b>	Ortho-Panograph - Dental
<b>I/O</b>	Intra Oral - Dental
<b>DMA</b>	Digital Mammography
<b>MA</b>	Mammography
<b>MATR</b>	Mammography trailers
<b>FPMA</b>	Film Processing Mammography



**2012/2013**

	DX	Screening	Mobile X ray	Spec Ct	U/Sound	Dental	CT	other		Total
NORTHERN TRUST		800000			62000			70000		932000
SOUTHERN TRUST	520000		115000		250000					885000
SOUTH EASTERN TRUST	542000		120000			75000				737000
BELFAST TRUST			120000		80000	221000		650000		1071000
WESTERN TRUST		600000		740000						1340000
Total										0
Total Spend Profile 2012 2013	1062000	1400000	355000	740000	392000	296000	0	720000		4965000

2013/14

	Modality									
	DX	Screening	Mobile X ray	Spec Ct	U/Sound	Dental	CT	other	dexa	
NORTHERN TRUST			726000			40000	499000	105000		1370000
SOUTHERN TRUST	860000		130000			65000	485000			1540000
SOUTH EASTERN TRUST	240000	240000	720000		75000					1275000
BELFAST TRUST	860000		375000		180000		495000			1910000
WESTERN TRUST		490000				152000		228000		870000
Total	1960000	730000	1951000		255000	257000	1479000	333000		6965000

**2014/15**

	Modality									
	DX	Screening	Mobile X ray	Spec Ct	U/Sound	Dental	CT	other	dexa	Total
NORTHERN TRUST			170000		220000	205000		45000		640000
SOUTHERN TRUST							485000	500000		985000
SOUTH EASTERN TRUST	780000							59000		839000
BELFAST TRUST		625000	310000				990000			1925000
WESTERN TRUST	375000				245000			145000	410000	1175000
Total	1155000	625000	480000	0	465000	205000	1475000	749000	410000	5564000

**2015/16**

	Modality									
	DX	Screening	Mobile X ray	Spec Ct	U/Sound	Dental	CT	other	dexa	Total
SOUTHERN TRUST							500000			500000



## Annex D: Proposed Major Equipment Investment Programme

### Belfast HSC Trust

						Proposed Investment Period to Meet RCR Guidelines							
Equipment	Trust Priority	Project	Estimated Costs	Comments	Status	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
MRI	1	BCH Tower - Replacement MRI Scanner 1.5T	£1,400,000	Replacement in line with RCR 2010	-	£0	£1,400,000	£0	£0	£0	£0	£0	£0
					-								
					-								
					-								
					-								
MRI	2	MPH - Replacement MRI Scanner 1.5T	£1,400,000	Replacement in line with RCR 2009	-	£0	£1,400,000	£0	£0	£0	£0	£0	£0
					-								
					-								
					-								
					-								
MRI	3	MPH - Replacement and Upgrade of MRI Scanner 1.5T	£1,400,000	Replacement in line with RCR 2012	-	£0	£1,400,000	£0	£0	£0	£0	£0	£0
					-								
					-								
					-								
					-								
MRI	6	Mater - Replacement of MRI Scanner	£1,400,000	Replacement in line with RCR 2014	-	£0	£0	£1,400,000	£0	£0	£0	£0	£0
					-								
					-								
					-								
					-								





						Proposed Investment Period to Meet RCR Guidelines							
Equipment	Trust Priority	Project	Estimated Costs	Comments	Status	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
				under RCR	-								
					-								

### Northern HSC Trust

						Proposed Investment Period to Meet RCR Guidelines							
Equipment	Trust Priority	Project	Estimated Costs	Comments	Status	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
MRI	2	AAH Replacement MRI Scanner	£1,550,000	Upgrade in line with RCR 2011	Oct-13	£1,550,000	£0	£0	£0	£0	£0	£0	£1,550,000
					Apr-14								
					-								
					-								
MRI	1	AAH 2nd MRI Scanner	£2,300,000	New Modality commissioner support agreed Nov 13	Oct-13	£0	£1,200,000	£1,100,000	£0	£0	£0	£0	£0
					-								
					-								
					-								
CT	3	Replace Mid Ulster CT	£0	Replacement in line with RCR 2014 not scheduled pending service review	-	£0	£0	£0	£0	£0	£0	£0	£0
					-								
					-								
					-								

						Proposed Investment Period to Meet RCR Guidelines							
						2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
Equipment	Trust Priority	Project	Estimated Costs	Comments	Status								
					-								
CT	3	Causeway 2nd CT Scanner	£250,000	New Modality commissioner support for additional revenue , relocated CT from AAH based on AAH new 320 being implemented 15/16	- - - -	£0	£0	£250,000	£0	£0	£0	£0	£0
CT	5	AAH SPECT CT replace NM camera	£690,000	Replace NM Camera in Line with RCR guidelines	- - - -	£0	£690,000	£0	£0	£0	£0	£0	£0
MRI	6	Causeway New MRI scanner	£3,000,000	New Modality commissioner support	- - - -	£0	£0	£0	£3,000,000	£0	£0	£0	£0
CT	8	Antrim Replace CT Scanner	£850,000	Replacement in line with RCR Linked to New 320 scanner inst and relocate	- - - -	£0	£850,000	£0	£0	£0	£0	£0	£0

						Proposed Investment Period to Meet RCR Guidelines							
Equipment	Trust Priority	Project	Estimated Costs	Comments	Status	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
				existing to Causeway	-								
CT	9	Antrim Replace CT scanner ED	£850,000	Replacement in line with RCR Due 2018 Equivalency 320	-	£0	£0	£0	£0	£900,000	£0	£0	£0
CT	-	Replace Causeway CT Scanner	£850,000	Replacement in line with RCR due 21/22	-	£0	£0	£0	£0	£0	£0	£0	£850,000
CT	10	AAH new CT scanner 320MD	£1,900,000	New Modality commissioner support 3rd CT 19/20	-	£0	£0	£0	£0	£0	£1,900,000	£0	£0

## Southern HSC Trust

						Proposed Investment Period to Meet RCR Guidelines							
Equipment	Trust Priority	Project	Estimated Costs	Comments	Status	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
MRI	2	CAH 2nd MRI scanner	£1,500,000	£900000 Executive Funding 2014/15	Jan-14	£1,500,000	£0	£0	£0	£0	£0	£0	£1,500,000
					May-14								
					-								
					-								
CT	1	CAH 2nd new CT Scanner	£2,000,000	From capital priorities spreadsheet for 2014/15 new modality	Oct-13	£0	£2,000,000	£0	£0	£0	£0	£0	£0
					-								
					-								
					-								
MRI	NP	DHH Hospital - MRI Scanner	£500,000	From Capital Priorities sheet query new service and Level of expenditure with Trust?	-	£0	£0	£500,000	£0	£0	£0	£0	£0
					-								
					-								
					-								
MRI	NP	CAH MRI 1 replacement scanner	£1,500,000	Replacement in line with RCR due 2022	-	£0	£0	£0	£0	£0	£0	£0	£1,500,000
					-								
					-								
					-								
CT	NP	South	£500,000	New 2014	-	£0	£0	£0	£0	£0	£0	£500,000	£0





## South Eastern HSC Trust

						Proposed Investment Period to Meet RCR Guidelines							
						2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
Equipment	Trust Priority	Project	Estimated Costs	Comments	Status								
CT	2	Lagan Valley Hospital Replacement CT Scanner	£499,000	Replacement in line with RCR due 2014/15	Apr-14	£0	£0	£499,000	£0	£0	£0	£0	£0
					-								
					-								
					-								
CT	NP	Ulster Hospital Replacement CT Scanner Room 1	£499,000	Replacement in line with RCR 2015/16	-	£0	£0	£499,000	£0	£0	£0	£0	£0
					-								
					-								
					-								
CT	NP	Downe Hospital Replacement CT Scanner Room 4	£550,000	Replacement in line with RCR 2016/17	-	£0	£0	£550,000	£0	£0	£0	£0	£0
					-								
					-								
					-								
MRI	NP	South Eastern MRI 1	£1,400,000	Replacement in line with RCR 2019/20	-	£0	£0	£0	£0	£0	£0	£1,400,000	£0
					-								
					-								
					-								
MRI	NP	South	£1,400,000	Replacement	-	£0	£0	£0	£0	£0	£1,400,000	£0	£0





						Proposed Investment Period to Meet RCR Guidelines							
Equipment	Trust Priority	Project	Estimated Costs	Comments	Status	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
					-								
MRI	NP	Altnagelvin Replacement MRI	£1,400,000	Re badged due 2018/19 in line with RCR	- - - - -	£0	£0	£0	£1,400,000	£0	£0	£0	£0

	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
<b>Total Annual Investment Required to Meet RCR Equipment Age Guidelines</b>	<b>£6,050,000</b>	<b>£15,175,000</b>	<b>£7,948,000</b>	<b>£10,110,000</b>	<b>£3,550,000</b>	<b>£6,700,000</b>	<b>£3,900,000</b>	<b>£9,400,000</b>

**SAMMD Capital Allocations 2010-2015**

**2010/2011**

Trust	Modality									
	DX	Screening	Mobile X ray	Spec Ct	U/Sound	Dental	CT	other		Total
NORTHERN TRUST		800000								
SOUTHERN TRUST		400000								
SOUTH EASTERN TRUST		400000								
BELFAST TRUST		400000								
WESTERN TRUST		400000								
Total		2400000								2400000

**2012/2013**

	DX	Screening	Mobile X ray	Spec Ct	U/Sound	Dental	CT	other		Total
NORTHERN TRUST		800000			62000			70000		932000
SOUTHERN TRUST	520000		115000		250000					885000
SOUTH EASTERN TRUST	542000		120000			75000				737000
BELFAST TRUST			120000		80000	221000		650000		1071000
WESTERN TRUST		600000		740000						1340000
Total										0
Total Spend Profile 2012 2013	1062000	1400000	355000	740000	392000	296000	0	720000		4965000

2013/14

	Modality									
	DX	Screening	Mobile X ray	Spec Ct	U/Sound	Dental	CT	other	dexa	
NORTHERN TRUST			726000			40000	499000	105000		1370000
SOUTHERN TRUST	860000		130000			65000	485000			1540000
SOUTH EASTERN TRUST	240000	240000	720000		75000					1275000
BELFAST TRUST	860000		375000		180000		495000			1910000
WESTERN TRUST		490000				152000		228000		870000
Total	1960000	730000	1951000		255000	257000	1479000	333000		6965000

**2014/15**

	Modality									
	DX	Screening	Mobile X ray	Spec Ct	U/Sound	Dental	CT	other	dexa	Total
NORTHERN TRUST			170000		220000	205000		45000		640000
SOUTHERN TRUST							485000	500000		985000
SOUTH EASTERN TRUST	780000							59000		839000
BELFAST TRUST		625000	310000				990000			1925000
WESTERN TRUST	375000				245000			145000	410000	1175000
Total	1155000	625000	480000	0	465000	205000	1475000	749000	410000	5564000

**2015/16**

	Modality									
	DX	Screening	Mobile X ray	Spec Ct	U/Sound	Dental	CT	other	dexa	Total
SOUTHERN TRUST							500000			500000