London Cardiac and Stroke Networks

Results of The Rapid Access Chest Pain Clinic and Diagnostics Survey

with Activity and Financial Trend Analysis

Spring 2011 Update

South London Cardiac and Stroke Network

Laura Gillam and Dr Nick Bunce, with Richard Whitfield and Russell Don

Publication date: July 2011

EXECUTIVE SUMMARY

This paper presents the analysis of how changes in practice for the diagnosis of coronary artery disease in stable patients could impact the activity and charges of the service provision in London.

The analysis is based upon data collected as part of a national Rapid Access Chest Pain Clinic (RACPC) survey and recommendations produced at the pan-London clinical consensus meeting. This meeting considered the NICE *Chest pain of recent onset* guidance and how it could be implemented locally.

The results from four of the five London Cardiac and Stroke Networks found that of 584 patient visits over a two week period:

- 47% of patients were referred for functional imaging (i.e., Dobutamine stress echocardiology, single photon emission computed tomography, and stress cardiovascular magnetic resonance)
- 49% were referred for an exercise treadmill test (ETT)
- 20% were referred for coronary angiography
- 4% for computed tomography angiography (CTA)
- 20% received no further treatment or diagnostic

By adhering to the NICE guidance, practice would be modified:

- All ETTs would be eliminated
- Functional imaging referrals would decline to 26% (from 47%)
- Coronary angiography referrals would increase to 45% (from 20%)
- CTA referrals would increase to 16% (from 4%)

Presuming that the current practice had not already begun to shift towards following the NICE guidance, this would indicate:

- More than double increase in coronary angiography procedures
- A four-fold increase of CTA referrals
- A reduction by half of the number of functional imaging tests

A financial analysis of the London results suggests that in the two week period, £125k in outpatient tariffs would have been charged for RACPC appointments. The survey suggested that in London £119k would have been spent on Coronary Angiography, £135k on imaging and £6k on CTA.

By modifying the practice in accordance with the NICE guidance the result would be an approximate increase of £115k in diagnostic charges in London for a two week period. This would result in an annual increase of £2.7 million, increasing the total annual cost from an estimated £9.3 million to £12 million.

CONTENTS

INTRODUCTION

NICE guidance

The new NICE guidance CG95, *Chest pain of recent onset*, advocates the move away from using exercise treadmill tests (ETT) to diagnose stable angina. Instead, it recommends a move towards clinical assessment followed by the use of CT scanning for low risk patients, functional imaging for intermediate patients, and invasive coronary angiography for high risk patients[1].

Clinical consensus meeting

At the request of the Pan-London Cardiac and Stroke Network Board, a pan-London clinical consensus meeting was held in September 2010. Participants were cardiologists representing several Trusts across London.

The group discussed the clinical evidence of the NICE guidance and the implications for local implementation. While the group were overall supportive of the NICE guidance, they recognised areas that may require alternative diagnostic strategies. A summary of the London consensus meeting, including the recommendations and the participants, can be found in Appendix A.

National survey

In conjunction with this work, providers in London with support from the London Cardiac and Stroke Networks took part in a voluntary Rapid Access Chest Pain Clinic (RACPC) survey designed by NHS Heart Improvement Programme (HIP). The survey gathered data to understand the current practice of investigating chest pain. (Details below)

Presented in this report

By pairing the risk stratification criteria outlined in the NICE guidance with subsequent investigations to the London patient information collected in the national survey, it is possible to estimate the possible variances in diagnostic activity and charges. This report discusses the charges (tariffs) made to commissioners, not the costs to providers of performing the diagnostic tests.

Three other treatment strategies have also been applied to the patient information, based on the recommendations that were produced at the pan-London clinical consensus meeting. This provides a better view of how the NICE guidance could be considered and implemented locally.

---

[1] NICE Guidance CG95, Chest pain of recent onset. Assessment and diagnosis of recent onset chest pain or discomfort of suspected cardiac origin. March 2010

Results of the survey – nationally

The RACPC national survey was completed by 22 cardiac networks across 96 providers. The information captured included 2,844 patient visits over a two week period between July and August, 2010.

The national survey showed that 52% of patients received an ETT, and 16% were referred from the clinic for coronary angiography. Application of the NICE guidance would modify the practice of patient referrals:

- 58.8% of patients would be referred for coronary angiography,
- 24.5% of patients would receive functional imaging, and
- 17% of patients would be referred for computed tomography angiography (CTA).

In terms of numbers of patients, this would suggest a four-fold increase of CTA, a small increase in functional imaging and double the number of coronary angiography procedures.

Results of the survey – locally

Four of the five London Cardiac and Stroke Networks submitted details on 584 patient visits to the HIP national survey. The data came from 18 provider organisations. The results from each provider were collated by the London Cardiac and Stroke Networks to calculate the activity and charges.

The provider organisations were:

Provider organisations that took part in the HIP RACPC and diagnostics survey	
Network	Provider organisation
North Central London	Barnet and Chase Farm Hospitals NHS Trust
	The Heart Hospital (University College London Hospital Trust)
	North Middlesex University Hospital NHS Trust
	Royal Free Hampstead NHS Trust
	The Whittington Hospital NHS Trust
North East London	Barking Havering and Redbridge University Hospitals NHS Trust
	Homerton University Hospital NHS Trust
	Newham University Hospital NHS Trust
	The London Chest Hospital (Bart's and The London NHS Trust)
	Whipps Cross University Hospital NHS Trust
South East London	Guy's and St Thomas' NHS Foundation Trust
	Princess Royal University Hospital (South London Healthcare NHS Trust)
	Queen Elizabeth Hospital (South London Healthcare NHS Trust)
	University Hospital Lewisham (Lewisham Healthcare NHS Trust)
South West London	Croydon University Hospital
	Kingston Hospital NHS Trust
	Queen Mary's Hospital, Roehampton
	St George's Healthcare NHS Trust

METHODOLOGY OF DIAGNOSTIC CAPACITY AND FINANCIAL TREND ANALYSIS

1. All 584 patients were assigned an individual risk score using the NICE risk stratification[2], which relates to the percentage of people estimated to have coronary artery disease according to the typicality of symptoms, age, sex and risk factors (diabetes, smoking and hyperlipidaemia).
2. The patients were then grouped into risk score brackets, according to the NICE guidance. Each risk score bracket was attributed a particular diagnostic investigation (in accordance with NICE).
3. Three 'alternative diagnostic strategies' were drafted at the London consensus meeting. The strategies had different risk score brackets, and different diagnostics investigations attached. See Table A.

Table A: NICE Risk score brackets with diagnostic guidance, and alternative strategies

Strategy	Risk score brackets	Diagnostic guidance
NICE Guidance	less than 10%	No treatment
	10-29%	Computed Tomography Angiography
	30-60%	Functional imaging
	61-100%	Coronary Angiography
Alternative Strategy 1	less than 10%	No treatment
	10-60%	Computed Tomography Angiography
	61-100%	Coronary Angiography
Alternative Strategy 2	less than 10%	No treatment
	10-60%	Computed Tomography Angiography
	61-90%	Functional imaging
	91-100%	Coronary Angiography
Alternative Strategy 3	less than 10%	No treatment
	10-29%	Computed Tomography Angiography
	30-90%	Functional imaging
	91-100%	Coronary Angiography

4. For each strategy, the number of patients in each risk score bracket was calculated (this is shown in Table C, on page 8 under the Results).
5. For each strategy, the numbers of the different diagnostic tests were calculated.

[2] Adapted from Pryor, D. B., Shaw, L., McCants, C. B. et al. (1993). *Value of the history and physical in identifying patients at increased risk for coronary artery disease.* Annals of Internal Medicine, *118 (2):* 81-90

6. For each diagnostic test, a charge was attributed to it; taken from an average of the London Tariffs (see Table B).
    a. For functional imaging, the charge listed (£533) is an average of the following functional imaging tests: Dobutamine stress echocardiography, single photon emission computed tomography, (SPECT) and stress cardiovascular magnetic resonance. (For the Department of Health recommended non-mandatory tariffs used in the national report, see Appendix B).
    b. The analysis also assumes that the charge of the ETT is currently bundled into the charge of the RACPC outpatient appointment tariff, although this may not be the case across the whole of London. (Please note this tariff may vary across London.)

Table B: Average of London tariffs

Test	Charge (£)
Computed tomography angiography (CTA)	300
Stress cardiovascular magnetic resonance (sCMR)	550
Single photon emission computed tomography (SPECT)	550
Stress echocardiography	500
Coronary angiography	1127
Outpatient clinic tariff	215
Functional imaging (Dobutamine stress echocardiograpy, single photon emission computed tomogrophy, (SPECT), and stress cardiovascular magnetic resonance)	533

7. These results were then compared with the number of 'planned investigations' (i.e., what actually happened to each of the 584 patients in their RACPC appointments, or what they were referred on for during that appointment).
8. The number of the different diagnostic tests (activity) in each strategy, and the total charges of each strategy were then multiplied by 24, to show estimated annual activity and charges for 48 weeks (assuming a working year of 48 weeks).

Limitations

1. The charges of further investigation has not been considered (i.e., coronary angiography and revascularisation that patients may receive after initial diagnostic tests). This may affect the total charges of any strategy depending on the prevalence of the disease in the population studied.
2. The results represent data submissions for four of the five London Cardiac Networks. It is critical to note that the figures have not been uplifted to include estimated data for the fifth network. This may affect the total charges of any strategy.
3. The results represent analysis for seventeen provider organisations across the four Networks. It is critical to note that the results have not been multiplied to estimate the figures of the additional providers. This may affect the total charges of any strategy.
4. Where tariffs and capacity for particular functional tests vary across London, the estimated charges will also vary.
5. The Heart Improvement Programme team has suggested that 'during the summer period it is usual to see an approximate 15% decline in capacity and activity[3]'. This has not been taken into consideration when analysing the results.
6. This report also presumes that practice had not already begun to change towards the NICE guidance.

[3] HES online

RESULTS

The results of the pan-London analysis are shown below. The analysis of each individual London Cardiac Network is shown from page 13.

London patient risk profiles

Table C shows the number and percentage of London patients grouped according to their risk score brackets, arranged by the alternative diagnostic strategies.

Table C: London patient risk profiles - 584 patients		
Strategy	Number of patients in risk group	%
NICE recommendations		
10-29%	85	15%
30-60%	138	24%
61-100%	245	42%
less than 10%	116	20%
Alternative strategy 1		
10-60%	223	38%
61-100%	245	42%
less than 10%	116	20%
Alternative strategy 2		
10-60%	223	38%
61-90%	145	25%
91-100%	100	17%
less than 10%	116	20%
Alternative strategy 3		
10-29%	85	15%
30-90%	283	48%
91-100%	100	17%
less than 10%	116	20%

London diagnostic activity

The survey showed that:

- Exercise treadmill tests were performed in 49% of patients in London
- 47% were referred for functional imaging
- 4% were referred for a CTA
- 20% of patients were referred for coronary angiography
- and 20% received no further treatment or diagnostic

Applying the NICE guidance would alter this practice to:

- eliminate all 266 exercise treadmill tests in chest pain clinics
- patients referred for coronary angiography would increase to 45%
- those referred for CTA would increase 16%
- and a reduction to only 26% would apply to those referred for functional imaging

Presuming that practice had not already begun to change towards the NICE guidance; this would suggest a considerable change from current practice. There would be a four-fold increase of CTA patients and a two and a half-fold increase of coronary angiography procedures. The number of patients receiving functional imaging tests would be halved.

The numbers of diagnostics planned for the population, and how these numbers would differ for the NICE and alternative strategies can be found in Table 1.

Table 1: The number of investigations planned for the patient population (584 individuals) during the two week audit period, the number of investigations had the alternative criteria been applied to the same patient group, and the percentage of patients that would receive those investigations.

NB. some patients may have recieved more than one test, which is why the sum of the investigations may not equal the same as the number of patients.

	Exercise test	%	Functional imaging	%	CTA	%	Coronary angiography	%	No treatment	%
Planned Investigations	266	49%	253	47%	20	4%	106	20%	107	20%
NICE strategy	0	0%	138	26%	85	16%	245	45%	116	21%
Alterative strategy 1	0	0%	0	0%	223	41%	245	45%	116	21%
Alterative strategy 2	0	0%	145	27%	223	41%	100	19%	116	21%
Alterative strategy 3	0	0%	283	52%	85	16%	100	19%	116	21%

Assuming the number and type of patients seen in the two week audit performed by the London Cardiac Networks was reflective of the rest of the (48 working week) year, in the organisations included in the report, annually 14,016 patients would receive:

- 6,384 exercise tests
- 6,072 functional imaging procedures
- 480 CTA referrals
- 2,544 coronary angiography referrals

The NICE guidance would modify this practice to:

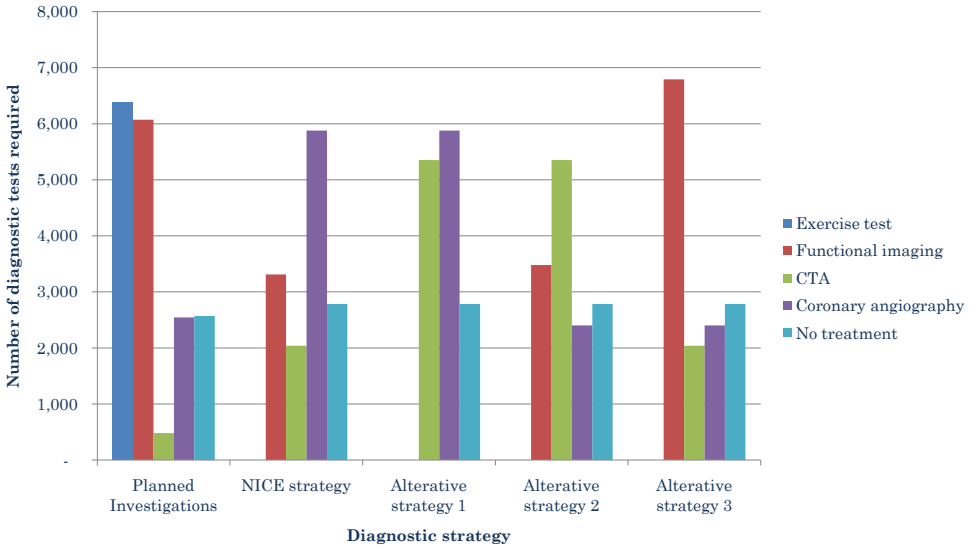
- 0 exercise tests
- 3,312 functional imaging procedures
- 2,040 CTA referrals
- 5,880 coronary angiography referrals

Table 1a and Figure 1a show these estimated figures of the number of diagnostics required for 48 weeks for the NICE and alternative strategies.

Table 1a: The number of investigations planned for the patient population based on the two week audit period, and the number of investigations had the alternative criteria been applied to the same patient group, calculated for 48 weeks.

	Exercise test	%	Functional imaging	%	CTA	%	Coronary angiography	%	No treatment	%
Planned Investigations	6,384	46%	6,072	43%	480	3%	2,544	18%	2,568	18%
NICE strategy	-	0%	3,312	24%	2,040	15%	5,880	42%	2,784	20%
Alterative strategy 1	-	0%	-	0%	5,352	38%	5,880	42%	2,784	20%
Alterative strategy 2	-	0%	3,480	25%	5,352	38%	2,400	17%	2,784	20%
Alterative strategy 3	-	0%	6,792	48%	2,040	15%	2,400	17%	2,784	20%

Figure 1a: The number of investigations planned for the London patient population based on the two week audit period, and the number of investigations had the alternative criteria been applied to the same patient group, calculated for 48 weeks.



London diagnostic charges

The London results from the national survey suggested that in the two week period, £125k in outpatient tariffs would have been charged for RACPC appointments across London. (This follows the assumption that for 584 patients a chest pain clinic charge was £215. It should be acknowledged that in reality, the tariffs are variable across London). The survey suggested that £119k would have been spent on coronary angiography, £135k on imaging and £6k on CTA.

Applying the assumptions of the NICE guidance would modify this practice, creating almost £115k in additional diagnostic charges.

These figures, and the charges of the diagnostics required for the alternative diagnostic strategies can be found in Table 2.

Please note;

- Functional imaging has been calculated as an average of DS Echo, SPECT, MRI and Stress MRI charges (£533).
- The charges of the ETT is excluded from the analysis, as it was historically included in the charge of the RACPC clinic.
- Where a change in practice may have already occurred in the RACPC clinics, the difference in charge between the 'planned investigations' from the NICE and alternative strategies will underestimate the total difference in additional charges, and overestimate any savings made.

Table 2: The charges associated with the diagnostics planned for the London patient population during the two week audit period, the charges associated had the alternative criteria been applied to the same patient group, and the difference in the charges to the current practice. Shown in £,000s

	Functional imaging	CTA	Coronary angiography	**Total charge of diagnostics**	Clinic charges (£215 x 584 patients)	**Total charge with clinic charge***	Difference in total charges to current practice
Planned investigations	£135	£6	£119	**£260**	£126	**£386**	
NICE strategy	£74	£26	£276	**£375**	£126	**£501**	£115
Alterative strategy 1	£0	£67	£276	**£343**	£126	**£468**	£83
Alterative strategy 2	£77	£67	£113	**£257**	£126	**£382**	-£3
Alterative strategy 3	£151	£26	£113	**£289**	£126	**£415**	£29

* The cost of the exercise test have been left out of the total cost of the 'planned investigations', due to the cost being included in the clinic cost.

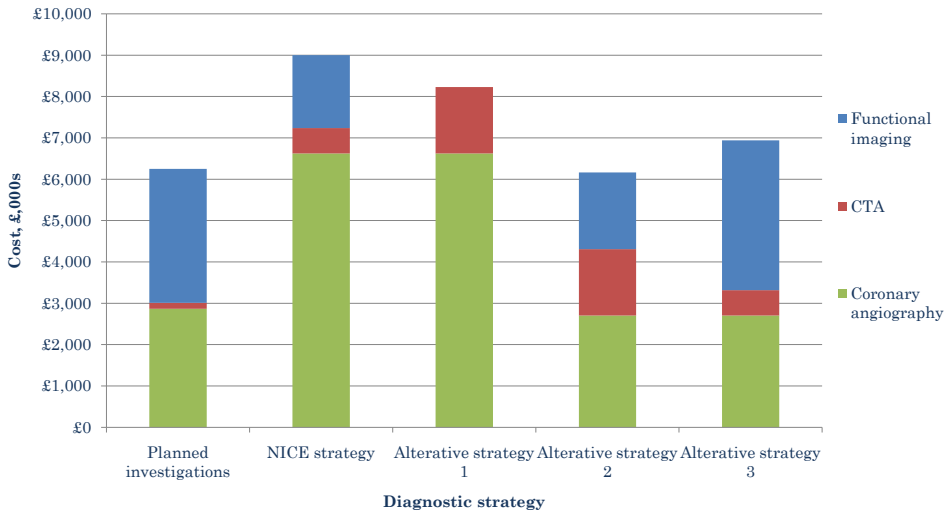
Table 2a and Figure 2a propose the charges that might be required for a service that investigates patients 48 weeks of the year. (Figures are shown in £,000s.)

Table 2a: The charges associated with the diagnostics planned for the London patient population during the two week audit period, the charges associated had the alternative criteria been applied to the same patient group, and the difference in the charges to the current practice, calculated for 48 weeks. Shown in £,000s.

	Functional imaging	CTA	Coronary angiography	**Total charge of diagnostics**	Clinic charges (£215 x 584 patients)	**Total charge with clinic charge***	Difference in total charges to current practice
Planned investigations	£3,238	£144	£2,866	**£6,248**	£3,013	**£9,262**	
NICE strategy	£1,766	£612	£6,624	**£9,002**	£3,013	**£12,016**	£2,754
Alterative strategy 1	£0	£1,606	£6,624	**£8,229**	£3,013	**£11,243**	£1,981
Alterative strategy 2	£1,856	£1,606	£2,704	**£6,165**	£3,013	**£9,179**	-£83
Alterative strategy 3	£3,622	£612	£2,704	**£6,938**	£3,013	**£9,951**	£690

* The cost of the exercise test have been left out of the total cost of the 'planned investigations', due to the cost being included in the clinic cost.

Figure 2a: The charges associated with the London patient population based on the two week audit period, and the costs associated had the alternative criteria been applied to the same patient group, calculated for 48 weeks. Shown in £,000s .



North Central London profile, capacity and charges

Table D shows the number and percentage of the North Central London patients grouped according to their risk group, arranged by the different diagnostic strategies.

Table D: North Central London - patient risk profiles - 113 patients		
Strategy	Number of patients in risk group	%
NICE recommendations		
10-29%	19	17%
30-60%	31	27%
61-100%	48	42%
less than 10%	15	13%
Alternative strategy 1		
10-60%	50	44%
61-100%	48	42%
less than 10%	15	13%
Alternative strategy 2		
10-60%	50	44%
61-90%	33	29%
91-100%	15	13%
less than 10%	15	13%
Alternative strategy 3		
10-29%	19	17%
30-90%	64	57%
91-100%	15	13%
less than 10%	15	13%

Of the investigations that were planned for the patient population included in the survey, 17% patients were offered exercise tests, 57% functional imaging, 4% CTA, 7% coronary angiography and 28% were not referred for further treatment.

Table 3 shows the number of diagnostic tests needed to reflect the risk profiles of the patients that were seen in North Central London.

Table 3: The number of investigations planned for the patient population in North Central London based on the two week audit period, and the number of investigations had the alternative criteria been applied to the same patient group, calculated for 48 weeks.

	Exercise test	%	Functional imaging	%	CTA	%	Coronary angiography	%	No treatment	%
Planned Investigations	456	17%	1536	57%	120	4%	192	7%	768	28%
NICE strategy	0	0%	744	27%	456	17%	1152	42%	360	13%
Alt. Strategy 1	0	0%	0	0%	1200	44%	1152	42%	360	13%
Alt. Strategy 2	0	0%	792	29%	1200	44%	360	13%	360	13%
Alt. Strategy 3	0	0%	1536	57%	456	17%	360	13%	360	13%

Figure 3 show these numbers that might be required in a service that treats patients 48 weeks of the year by diagnostic strategy.

Figure 3: The number of investigations planned for the patient population in North Central London based on the two week audit period, and the number of investigations had the alternative criteria been applied to the same patient group, calculated for 48 weeks

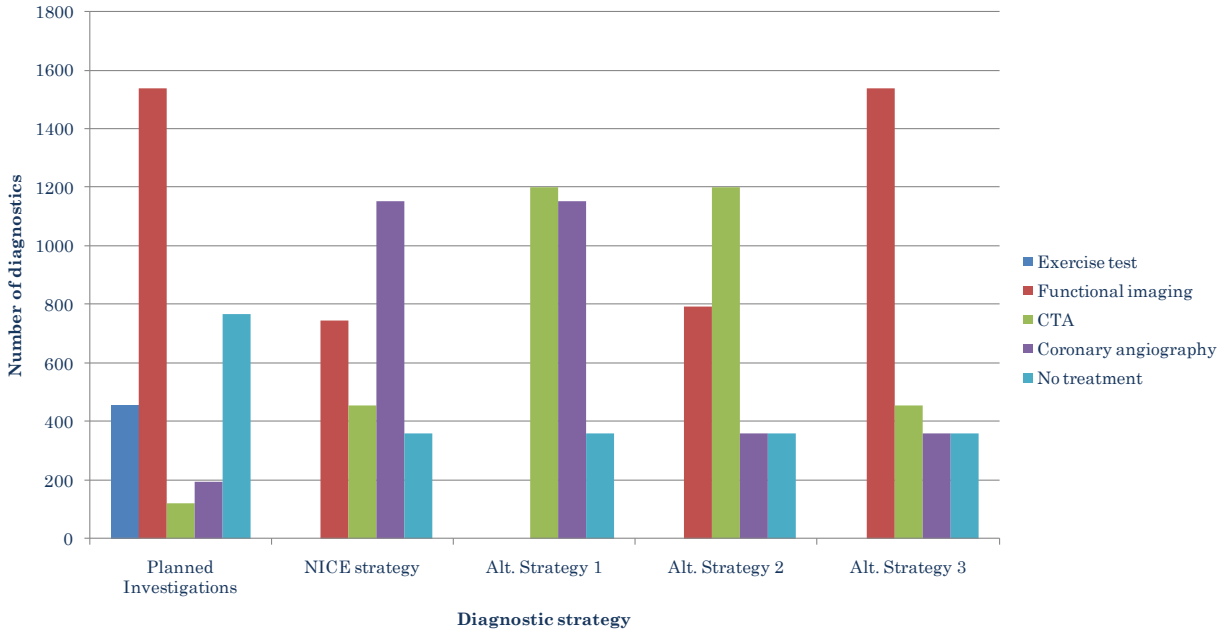
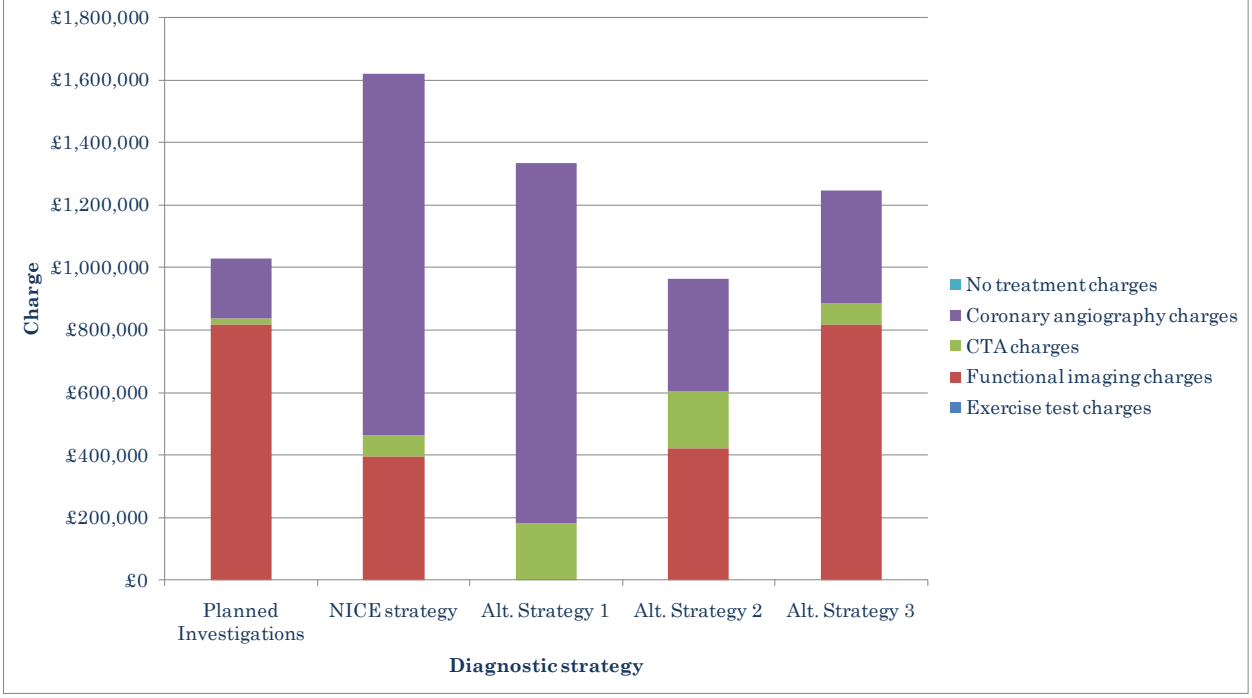


Table 3a and Figure 3a propose the charges that might be required for a service that investigates patients 48 weeks of the year.

Table 3a: The number and charges of investigations planned for the patient population in North Central London based on the two week audit period, and the number and charges had the alternative criteria been applied to the same patient group, calculated for 48 weeks.

	Exercise test	Exercise test charges	Functional imaging	Functional imaging charges	CTA	CTA charges	Coronary angiography	Coronary angiography charges	No treatment	No treatment charges
Planned Investigations	456	£0	1536	£818,688	120	£18,000	192	£192,576	768	£0
NICE strategy	0	£0	744	£396,552	456	£68,400	1152	£1,155,456	360	£0
Alt. Strategy 1	0	£0	0	£0	1200	£180,000	1152	£1,155,456	360	£0
Alt. Strategy 2	0	£0	792	£422,136	1200	£180,000	360	£361,080	360	£0
Alt. Strategy 3	0	£0	1536	£818,688	456	£68,400	360	£361,080	360	£0

Figure 3a: The charges of the investigations planned for the patient population in North Central London based on the two week audit period, and the charges had the alternative criteria been applied to the same patient group, calculated for 48 weeks.



North East London profile, capacity and charges

Table E shows the number and percentage of the North East London patients grouped according to their risk group, arranged by the different diagnostic strategies.

Table E: North East London - patient risk profiles - 226 patients		
Strategy	Number of patients in risk group	%
NICE recommendations		
10-29%	33	15%
30-60%	56	25%
61-100%	94	42%
less than 10%	43	19%
Alternative strategy 1		
10-60%	89	39%
61-100%	94	42%
less than 10%	43	19%
Alternative strategy 2		
10-60%	89	39%
61-90%	57	25%
91-100%	37	16%
less than 10%	43	19%
Alternative strategy 3		
10-29%	33	15%
30-90%	113	50%
91-100%	37	16%
less than 10%	43	19%

Of the investigations that were planned for the patient population included in the survey, 46% patients were offered exercise tests, 50% functional imaging, 2% CTA, 15% coronary angiography and 17% were not referred for further treatment.

Table 4 shows the number of diagnostic tests needed to reflect the risk profiles of the patients that were seen in North East London.

Table 4: The number of investigations planned for the patient population in North East London based on the two week audit period, and the number of investigations had the alternative criteria been applied to the same patient group, calculated for 48 weeks.

	Exercise test	%	Functional imaging	%	CTA	%	Coronary angiography	%	No treatment	%
Planned Investigations	2496	46%	2712	50%	96	2%	816	15%	912	17%
NICE strategy	0	0%	1344	25%	792	15%	2256	42%	1032	19%
Alt. Strategy 1	0	0%	0	0%	2136	39%	2256	42%	1032	19%
Alt. Strategy 2	0	0%	1368	25%	2136	39%	888	16%	1032	19%
Alt. Strategy 3	0	0%	2712	50%	792	15%	888	16%	1032	19%

Figure 4 shows these numbers that might be required in a service that treats patients 48 weeks of the year by diagnostic strategy.

Figure 4: The number of investigations planned for the patient population in North East London based on the two week audit period, and the number of investigations had the alternative criteria been applied to the same patient group, calculated for 48 weeks

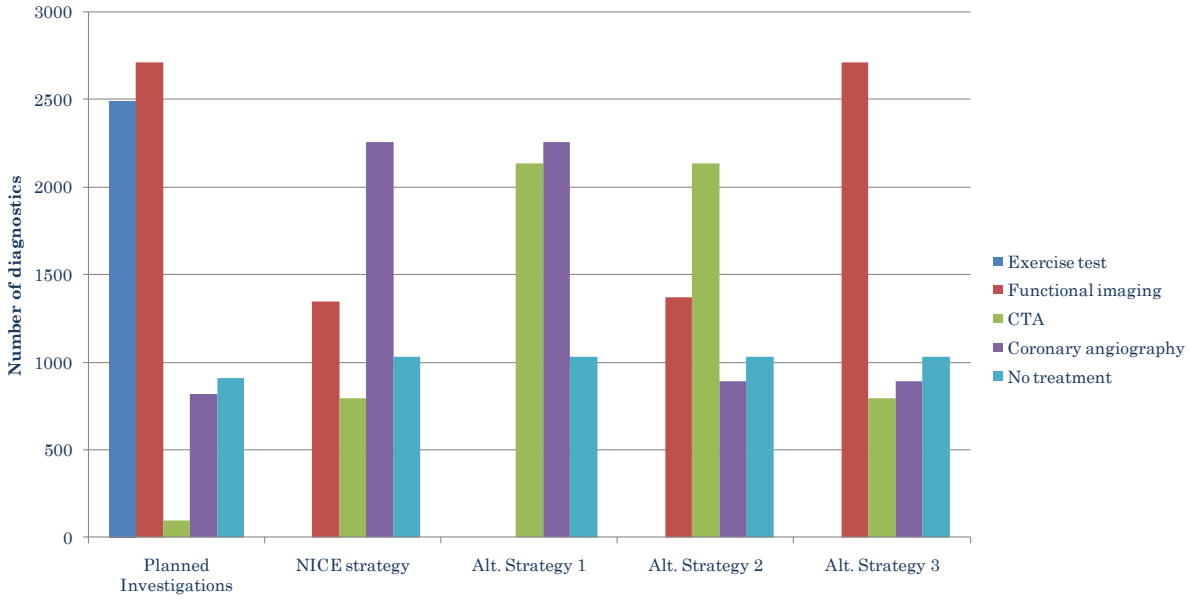
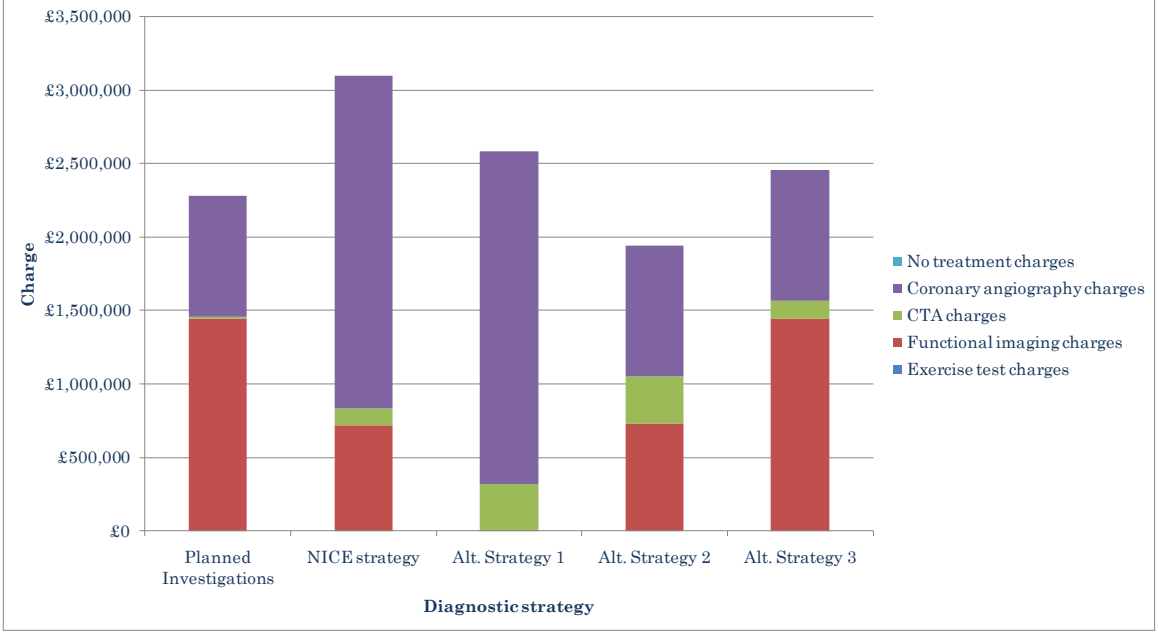


Table 4a and Figure 4a propose the charges that might be required for a service that investigates patients 48 weeks of the year.

Table 4a: The number and charges of investigations planned for the patient population in North East London based on the two week audit period, and the number and charges had the alternative criteria been applied to the same patient group, calculated for 48 weeks.

	Exercise test	Exercise test charges	Functional imaging	Functional imaging charges	CTA	CTA charges	Coronary angiography	Coronary angiography charges	No treatment	No treatment charges
Planned Investigations	2496	£0	2712	£1,445,496	96	14400	£816	£818,448	£912	0
NICE strategy	0	£0	1344	£716,352	792	£118,800	2256	£2,262,768	1032	£0
Alt. Strategy 1	0	£0	0	£0	2136	£320,400	2256	£2,262,768	1032	£0
Alt. Strategy 2	0	£0	1368	£729,144	2136	£320,400	888	£890,664	1032	£0
Alt. Strategy 3	0	£0	2712	£1,445,496	792	£118,800	888	£890,664	1032	£0

Figure 4a: The charges of the investigations planned for the patient population in North East London based on the two week audit period, and the charges had the alternative criteria been applied to the same patient group, calculated for 48 weeks.



South East London profile, capacity and charges

Table F shows the number and percentage of the South East London patients grouped according to their risk group, arranged by the different diagnostic strategies.

Table F: South East London - patient risk profiles - 133 patients		
Strategy	Number of patients in risk group	%
NICE recommendations		
10-29%	17	13%
30-60%	26	20%
61-100%	62	47%
less than 10%	28	21%
Alternative strategy 1		
10-60%	43	32%
61-100%	62	47%
less than 10%	28	21%
Alternative strategy 2		
10-60%	43	32%
61-90%	33	25%
91-100%	29	22%
less than 10%	28	21%
Alternative strategy 3		
10-29%	17	13%
30-90%	59	44%
91-100%	29	22%
less than 10%	28	21%

Of the investigations that were planned for the patient population included in the survey, 52% patients were offered exercise tests, 28% functional imaging, 6% CTA, 25% coronary angiography and 21% were not referred for further treatment.

Table 5 shows the number of diagnostic tests needed to reflect the risk profiles of the patients that were seen in South East London.

Table 5: The number of investigations planned for the patient population in South East London based on the two week audit period, and the number of investigations had the alternative criteria been applied to the same patient group, calculated for 48 weeks.

	Exercise test	%	Functional imaging	%	CTA	%	Coronary angiography	%	No treatment	%
Planned Investigations	1656	52%	888	28%	192	6%	792	25%	672	21%
NICE strategy	0	0%	624	20%	408	13%	1488	47%	672	21%
Alt. Strategy 1	0	0%	0	0%	1032	32%	1488	47%	672	21%
Alt. Strategy 2	0	0%	792	25%	1032	32%	696	22%	672	21%
Alt. Strategy 3	0	0%	1416	44%	408	13%	696	22%	672	21%

Figure 5 show these numbers that might be required in a service that treats patients 48 weeks of the year by diagnostic strategy.

Figure 5: The number of investigations planned for the patient population in South East London based on the two week audit period, and the number of investigations had the alternative criteria been applied to the same patient group, calculated for 48 weeks

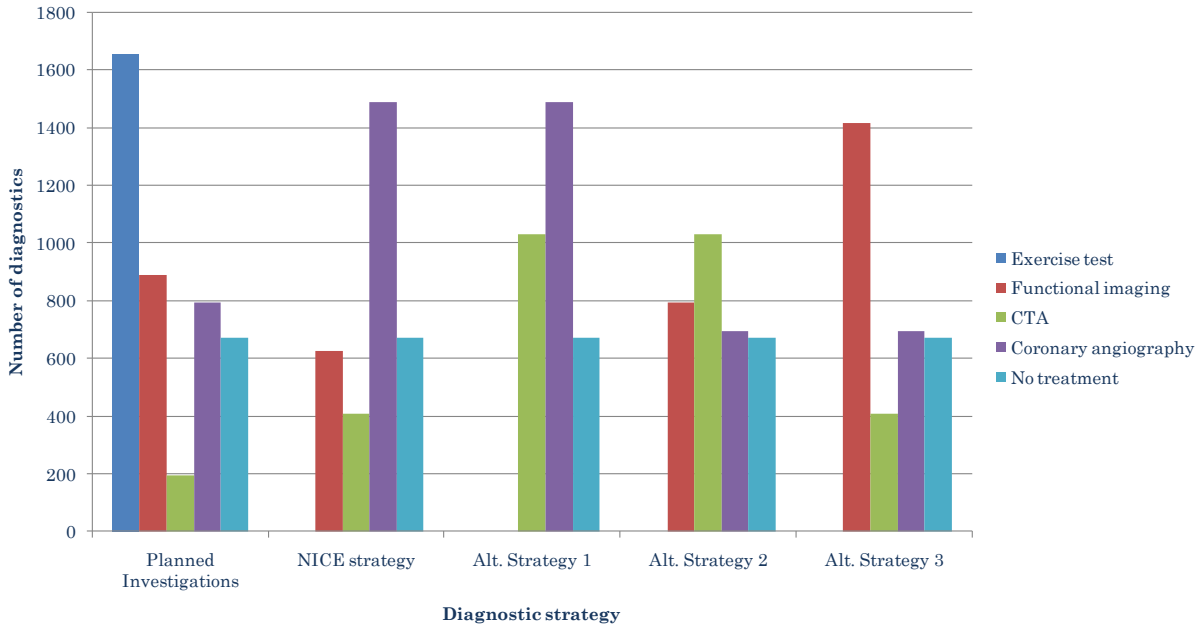
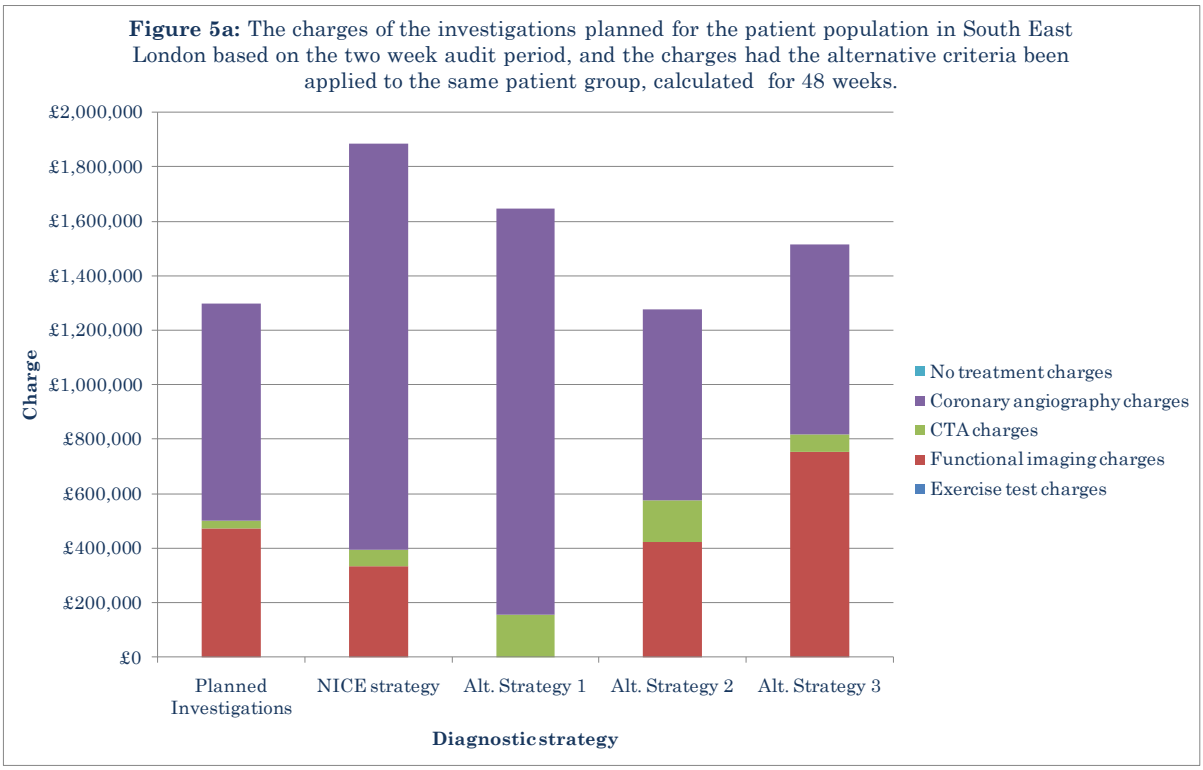


Table 5a and Figure 5a propose the charges that might be required for a service that investigates patients 48 weeks of the year.

Table 5a: The number and charges of investigations planned for the patient population in South East London based on the two week audit period, and the number and charges had the alternative criteria been applied to the same patient group, calculated for 48 weeks.

	Exercise test	Exercise test charges	Functional imaging	Functional imaging charges	CTA	CTA charges	Coronary angiography	Coronary angiography charges	No treatment	No treatment charges
Planned Investigations	1656	£0	888	£473,304	192	£28,800	792	£794,376	672	£0
NICE strategy	0	£0	624	£332,592	408	£61,200	1488	£1,492,464	672	£0
Alt. Strategy 1	0	£0	0	£0	1032	£154,800	1488	£1,492,464	672	£0
Alt. Strategy 2	0	£0	792	£422,136	1032	£154,800	696	£698,088	672	£0
Alt. Strategy 3	0	£0	1416	£754,728	408	£61,200	696	£698,088	672	£0

Figure 5a: The charges of the investigations planned for the patient population in South East London based on the two week audit period, and the charges had the alternative criteria been applied to the same patient group, calculated for 48 weeks.



South West London profile, capacity and charges

Table G shows the number and percentage of the South West London patients grouped according to their risk group, arranged by the different diagnostic strategies.

Table G: South West London - patient risk profiles - 112 patients		
Strategy	Number of patients in risk group	%
NICE recommendations		
10-29%	16	14%
30-60%	25	37%
61-100%	41	60%
less than 10%	30	44%
Alternative strategy 1		
10-60%	41	60%
61-100%	41	60%
less than 10%	30	44%
Alternative strategy 2		
10-60%	41	60%
61-90%	22	32%
91-100%	19	28%
less than 10%	30	44%
Alternative strategy 3		
10-29%	16	24%
30-90%	47	69%
91-100%	19	28%
less than 10%	30	44%

Of the investigations that were planned for the patient population included in the survey, 66% patients were offered exercise tests, 35% functional imaging, 3% CTA, 28% coronary angiography and 8% were not referred for further treatment.

Table 6 shows the number of diagnostic tests needed to reflect the risk profiles of the patients that were seen in South West London.

Table 6: The number of investigations planned for the patient population in South West London based on the two week audit period, and the number of investigations had the alternative criteria been applied to the same patient group, calculated for 48 weeks.

	Exercise test	%	Functional imaging	%	CTA	%	Coronary angiography	%	No treatment	%
Planned Investigations	1776	66%	936	35%	72	3%	744	28%	216	8%
NICE strategy	0	0%	600	22%	384	14%	984	37%	720	27%
Alt. Strategy 1	0	0%	0	0%	984	37%	984	37%	720	27%
Alt. Strategy 2	0	0%	528	20%	984	37%	456	17%	720	27%
Alt. Strategy 3	0	0%	1128	42%	384	14%	456	17%	720	27%

Figure 6 show these numbers that might be required in a service that treats patients 48 weeks of the year by diagnostic strategy.

Figure 6: The number of investigations planned for the patient population in South West London based on the two week audit period, and the number of investigations had the alternative criteria been applied to the same patient group, calculated for 48 week

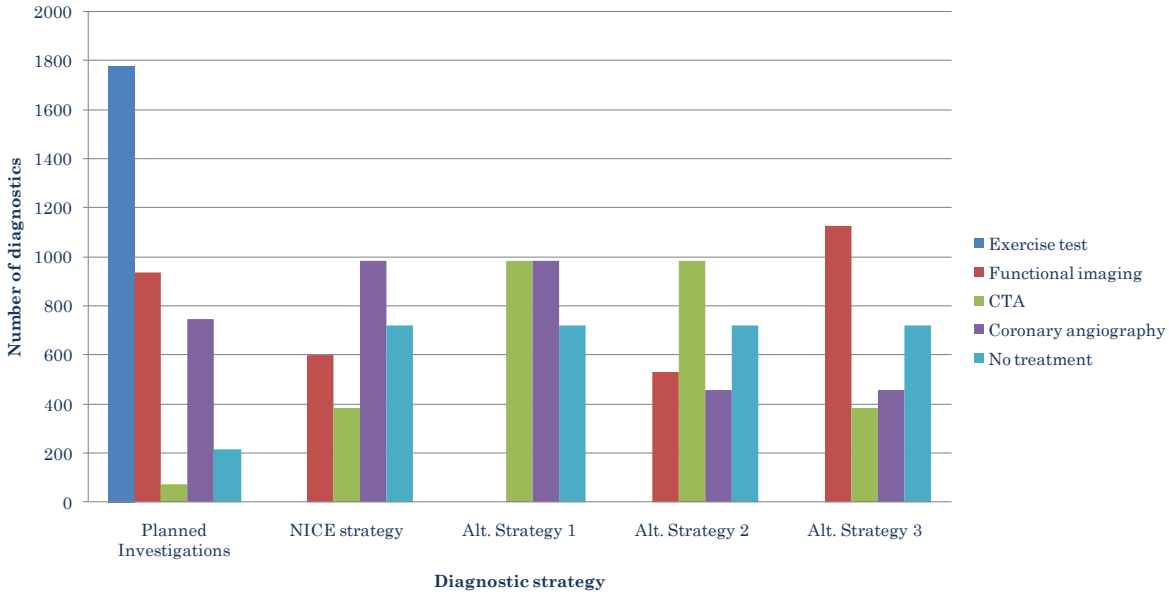
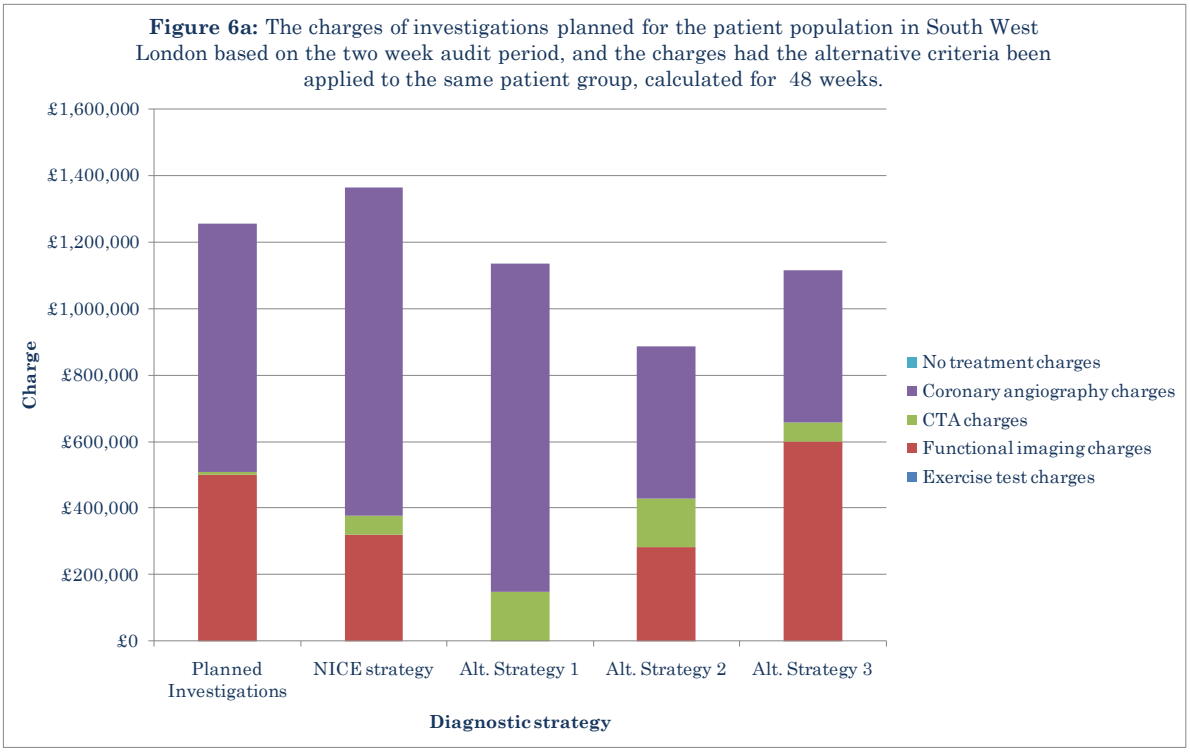


Table 6a and Figure 6a propose the charges that might be required for a service that investigates patients 48 weeks of the year.

Table 6a: The number and charges of investigations planned for the patient population in South West London based on the two week audit period, and the number and charges had the alternative criteria been applied to the same patient group, calculated for 48 weeks.

	Exercise test	Exercise test charges	Functional imaging	Functional imaging charges	CTA	CTA charges	Coronary angiography	Coronary angiography charges	No treatment	No treatment charges
Planned Investigations	1776	£0	936	£498,888	72	£10,800	744	£746,232	216	£0
NICE strategy	0	£0	600	£319,800	384	£57,600	984	£986,952	720	£0
Alt. Strategy 1	0	£0	0	£0	984	£147,600	984	£986,952	720	£0
Alt. Strategy 2	0	£0	528	£281,424	984	£147,600	456	£457,368	720	£0
Alt. Strategy 3	0	£0	1128	£601,224	384	£57,600	456	£457,368	720	£0

Figure 6a: The charges of investigations planned for the patient population in South West London based on the two week audit period, and the charges had the alternative criteria been applied to the same patient group, calculated for 48 weeks.



APPENDIX A

Briefing on the meeting for a Pan-London Chest Pain Clinical Consensus.

Background:

At requests of the Pan-London Cardiac and Stroke Network Board, a pan-London clinical consensus meeting was held in September 2010. Participants from trusts across London were recruited to the meeting after being nominated as representatives by their cardiology teams on request of the Networks. Participants at the meeting are listed at the end of this document.

Purpose:

The aims of the group were to:

1. Discuss the 'Chest pain of recent onset' NICE guidance (NICE clinical guideline 95, published March 2010)
2. Make recommendations on guidance and adoption across London
3. Understand the cost and commissioning implications of the new guidance
4. Agree on consensus to facilitate a discussion with commissioners

Key messages:

The group were overall supportive of the recommendations from NICE; however they recognised 5 areas that required an alternative strategy. These areas are listed on the next page, and across London it should be recommended that each trust implement them as appropriate.

Next steps

The group highlighted further actions that would need to be taken forward:

1. The group requested that functional tests, i.e. stress echo, nuclear scanning and stress MR, need locally negotiated price and agreed delivery within reasonable time frame, e.g. suggested best practice of 4-6 weeks
2. The group also recognised that there is scope for pilot studies to test the model of delivery (e.g. assessment and tests on same day)
    a. Issues around patient consent must also be considered in the pilots.
3. The group recognised that to support the development of the model of care, audits should take place recording not only the activity surrounding the diagnosis of new onset chest pain, but the negative and positive outcomes of tests undertaken on patients
4. The group also highlighted that local solutions are important, and that centralised services are not necessary unless due to limited capacity.

Pan-London Chest Pain Clinical Consensus

These recommendations have been proposed by a pan-London clinical consensus group, in relation to the NICE 'Chest Pain of Recent Onset' guidance (March 2010), and signed off by the Pan-London Cardiac and Stroke Network London Board.

The group were overall supportive of the recommendations from NICE; however they recognised 5 areas that required an alternative strategy:

1. There is still a need for rapid access chest pain clinics (RACPC), which provides assessment within 2 weeks.

2. While exercise testing will be reduced in its use, it should continue to be used as a risk-stratification tool for appropriate patients.

3. CT Calcium scoring can be used in patients in the 10-60% risk bracket if appropriate to local availability*.

4. CT Calcium scores of zero may not rule out obstructive coronary artery disease; consider CT Angiography for symptomatic patients (ref JACC, 2010; 55, 627-634).
    a. For dense/high Calcium score, CT Angiography may not be appropriate.
    b. CT Angiography should report the radiation dose and ideally should be performed on low does scanners, e.g. less than 5 msv.

5. Functional tests (i.e. stress echo, nuclear scanning and stress MR) should be provided in according to local speciality and capacity.
    a. Functional tests can be used for the patients in the 30-90% risk brackets, when appropriate (and used for patients in the 10-30% risk bracket if radiation dose from CTA is a concern)*.

*In patients with a risk of less than 10%, further investigation should be a clinical decision.

Those present at the clinical consensus meeting were:

Dr Nick Bunce, Consultant Cardiologist, St George's NHS Trust (Chair)

Dr Khaled Alfakih, Consultant Cardiologist, University Hospital Lewisham

Dr Andrew Archibald, Consultant Cardiologist, Barts and the London NHS Trust

Dr Jonathan Byrne, Consultant Cardiologist, Kings College Hospital

Dr Gerry Coghlan, Consultant Cardiologist, Royal Free NHS Trust

Dr Jane Hancock, Consultant Cardiologist, Guy's and St Thomas' NHS Trust

Dr Stefan Karwatowski, Consultant Cardiologist, South London Healthcare Trust

Dr Jamil Mayet, Consultant Cardiologist, Imperial NHS Trust

Dr Harry Singh, General Practitioner, North East London

Sue Sawyer, Assistant Director, North East London Cardiac and Stroke Network

Russell Don, Assistant Director, South London Cardiac and Stroke Network

Laura Gillam, Senior Project Manager, South London Cardiac and Stroke Network

APPENDIX B

Appendix B: Department of Health Non-mandatory Tariffs	
Test	Charge (£)
Exercise Test	117
CT Angiography	150
CT Scan	150
MRI (non stress)	243
Stress MRI	243
Myocardial Perfusion Imaging	284
PET Scan	150
Echo	87
TOE	213
Stress Echo	213
Coronary Angiography	1003
Outpatient Clinic Tariff	215
"Functional Imaging"	284

Published by:

South London Cardiac and Stroke Network

84 Kennington Road

London, SE11 6NL

020 8812 5950

February 2011