



The British Society for
Antimicrobial Chemotherapy



OPAT
Outpatient Parenteral
Antimicrobial Therapy

Funding Acquisition and Business Case Development: A Scottish Perspective

Dr Claire Mackintosh

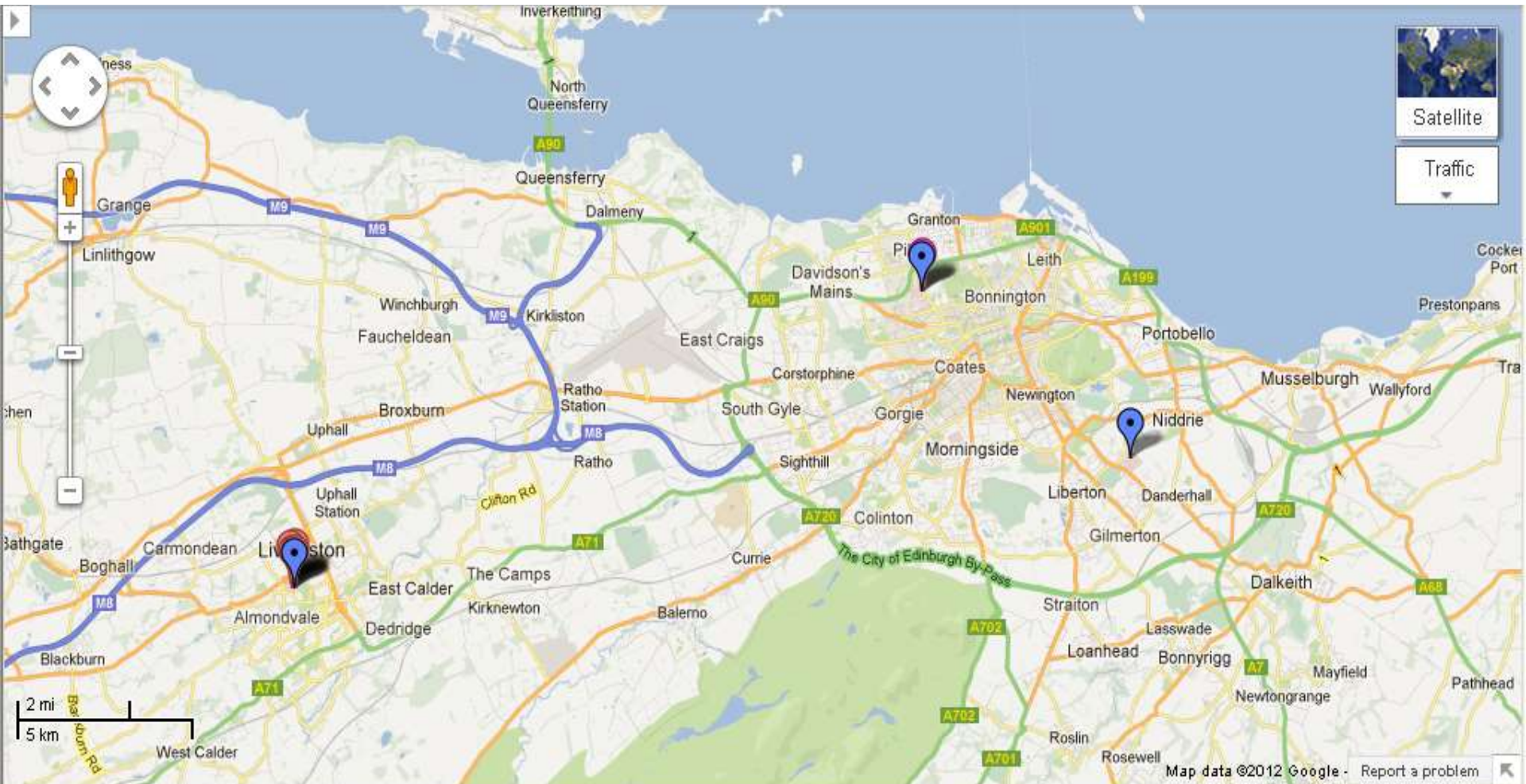
Developing an OPAT service
a personal experience

Claire Mackintosh



- October 2010 – appointed Consultant in Infectious Diseases in NHS Lothian

- NHS Lothian – made up of 3 acute hospitals:
 - Royal Infirmary of Edinburgh
A&E, trauma, cardiology,
general medicine and surgery
obstetrics and gynaecology
orthopaedics and liver/kidney
transplant and respiratory
 - Western General Hospital
Infectious Diseases, cancer,
neurosurgery, neurology,
urology, respiratory, tubular GI
GP admissions unit
 - St Johns Hospital, Livingston
General medicine and surgery, A&E
Plastics



Satellite

Traffic



- Looked around to see what models of ambulatory care were already happening

- RIE

PAA – ambulatory cellulitis protocol –

- treated around 80 patients/month

- patients reviewed by junior medical staff and average duration of anbx – 14 days

- Orthopaedics – ad hoc system for outpatient IV treatment.

- » Patients would be brought back to ortho ward.

- » Happened very infrequently.

- » Unconventional antibiotic schedules (48 hourly vancomycin dosing in patient with normal renal function)

- » High linezolid prescribers thus most patient discharged on oral antibiotics.

- WGH

RIDU – Occasional patients brought back to ward or day bed area for IV anbx.

Very infrequently (1 every 2-3 months).

Urology – admitting patients with MDR UTI for 14 days

Neurosurgery – occasional ward attendee for antibiotics but very ad hoc basis and infrequent.

ARU – Ambulatory cellulitis protocol

6 patients / week, long duration of antibiotic therapy, patients' waiting with acute admissions thus not priority for review – waiting up to 4 hours for antibiotic

- Next step was to look at discharge diagnoses across NHS Lothian

- January to August 2009 and January to August 2010 –

total of 1140 admissions to NHS Lothian with SSTI.

- average length of stay of 7.45 days thus accounting for 8502.21 total occupied bed days.
- These in-patient bed days cost NHS Lothian £3,060,796 (£2,295,597 per annum).

Diagnosis	2009			2010		
	Admissions	Av. LOS (days)	TOBD	Admissions	Av. LOS (days)	TOBD
Osteomyelitis	38	24.42	927.96	33	24.15	796.95
Discitis	8	51.54	412.32	13	46.46	603.98
Endocarditis	13	41.46	538.98	17	43.13	733.21
Septic Arthritis	27	13.17	355.59	34	12.89	438.26
Diabetic Foot Infection	35	25.87	905.45	36	52.01	1872.36
		Total OBD	3140.3			4444.76

Over the two periods of time:

TOBD 7585.06 at a cost to NHS Lothian of £2,730,621.6

- Then drew up a cost per case treated as both inpatient and outpatient and formulated a budget comparison

NUMBERS		UNIT £	Total service	COST
SSTI	Patients		600	
	Bed days saved		4470	
Prolonged IV	Patients		100	
	Bed days saved		3264	
OPAT SPEND				
*Nursing	wte		7.0	249,046
Medical	1.5 PA		0	
Pharmacist	wte		0.1	4000
Drugs (days)	Ceftriaxone (1g)	0.82	2700	2214
	Teicoplanin (400mg)	6.79	2100	14259
	Daptomycin (500mg)	92.57	44	64799
	Daptomycin (350mg)	54.19	30	37933
	Ertapenem (1g)	33.6	20	672
	<i>Oral</i>			
	flucloxacillin (7 days)	2.94	600	1764
	Rifampicin (28 days)	12.30	100	1230
Total drug costs OPAT				122,871
OPAT drugs and consumable costs	Consumables (IV access, giving sets, dressings)			2722
	PICC lines	3.40	30	340
	Patient transport			3040
	Staff transport			600
	Teicoplanin tests	41.50	40	6232
TOTAL OPAT COST £				390,851
IPAT SPEND				
Drugs (days)	Flucloxacillin(4g)+	3.25	2000	25410
	Benzylpenicillin (4.8g)	8.35		
	Vancomycin (2g)	6.70	1920	12864
	Daptomycin (500mg)	92.57	176	16274
	Meropenem (3g)	61.60	80	4928
	<i>Oral</i>			
	Amoxil/flucloxacillin (10 days)	4.2	600	2520
	Rifampicin (28 days)	12.30	100	1230
Total drug costs IPAT				63,226
Consumables (venflons, butterflies, giving sets, adhesive dressings)				3200
Vancomycin tests (£7)				25,096
IPAT drugs and consumable COST				91,522
hotel - £360/pt/night (700 patients with median LOS 10 days)				2,520,000
TOTAL IPAT COST				2,611,522
TOTAL OPAT SAVE £				2,220,671

- Based on this and an NHS Lothian business case template we developed a business case for a seven/day week OPAT service with the potential to treat 700 patients/year
- This was sent to the lead nurse, head of pharmacy, operations manager etc.
- With their support it was decided, prior to requesting full funding we would commence a pilot service

07/01/2011 Email from Director of operations for Medicine and acute services outlining plan for pilot and priorities

- Proposed planned start date - Monday 4th April
- Medical staff - in place (Claire)
- Nursing staff - still to be confirmed but ...initially to be run from our existing staffing prior to evaluation/review of impact/numbers
- Model of service - 5 days per week only subject to evaluation/review of impact/numbers to evidence need for additional resource
- Financial model - further to email exchange..., we will establish a new cost centre for the OPAT service and will fund the drug budget from reserves. We will not be able to undertake a prospective cost per case recharge as we'd have hoped due to the transaction costs this would incur but will have to evaluate the patient activity and associated spend to make a drug budget transfer.
- Paper for SMT - main premise will be on **supporting the managing capacity work/alleviating in-patient pressure rather than proposing a saving**. After evaluation (e.g. 3 or 6 months) we can consider what is possible i.e. any physical bed impact

Pilot OPAT started June 2011

1x band 7 nurse (redeployed from A&E)

0.1 wte clinical pharmacist

Infectious Disease consultant

Operated out of the RIDU outpatient day bed area (usually used for administration of IVIg)

- **Pilot results**

- Interim data June 2011 – December 2011

- Total number of patients treated - 58

- Diagnoses

- Skin and soft tissue infection (SSTI) – 36

- Bone and joint infection (BJI) – 11

- Others-11

- Patient Outcomes

- SSTI 35/36 Cure or improvement

- 1/36 Not SSTI thus referred to another specialty

- BJI 9/11 cure or improvement

- 1/11 required unscheduled surgical intervention

- 1/11 adverse reaction to IV antibiotic

- Others 11/11 cure or improvement

- Total occupied bed days saved June – December 2011 577

BJI:

sternal osteomyelitis

stump osteomyelitis

diabetic foot infection

discitis

prosthetic joint infection

septic arthritis

infected intra-medullary nail

Others:

UTI

Lyme Disease

Liver abscess

Leishmaniasis

Neurosyphilis

Typhoid

From: Office of Chief Executive NHS Lothian

Sent: 22 July 2011 12:29

To: N [REDACTED]

Subject: COMMUNITY-BASED ANTIBIOTIC INFUSION

From: James Barbour (Chief Executive)

P

I was at a meeting in London this week where this was discussed. Are we already doing community-based antibiotic infusion in Lothian or is this something we are thinking about? Any thoughts?

Many thanks and a response by 29 July would be appreciated.

- Flurry of activity – OPAT briefing note drafted and forwarded through circuitous channels

From: [REDACTED]

Sent: 10 August 2011 12:37

To: [REDACTED]

Subject: FW: COMMUNITY-BASED ANTIBIOTIC INFUSION

P

Who is Dr McIntosh and what is the OPAT centre at WGH?

Thanks.

Executive Assistant to the Chief Operating Officer

From: Chief Executive

Sent: 08 August 2011 15:17

To: N██████████ Pat

Cc: Lots of people (none of whom were me)

Subject: RE: COMMUNITY-BASED ANTIBIOTIC INFUSION

“.....Given the potential for patient benefit and possible accompanying savings, I think you should now take this forward..... “

- Although I had not officially seen this email – gave us confidence that OPAT was being supported higher up..

QUALITY AND EFFICIENCY: INVEST TO SAVE PROPOSALS 2011-12

As you may be aware, the Scottish Government have allocated £545k of non-recurring funds to support improving quality and efficiency across Lothian in 2011-12.

28th October 2011

- Key aspects of this application were that we reduced by half, the numbers of patients we would potentially treat thus giving us a target of saving 2900 OBD/year
- Metric for success was OBD saving NOT a financial saving per se (improved efficiency and distancing OPAT from any suggestion of bed closures)

From: T, L

Sent: 30 January 2012 15:43

To: D-K, S; W, M; S, C

Cc: other people (also not me)

Subject: INVEST TO SAVE PROPOSAL - OUTPATIENT ANTIMICROBIAL THERAPY SERVICE FOR NHS Lothian

Importance: High

Dear

The above invest to save proposal was considered at the NHS Lothian Efficiency and Productivity Group meeting on 24th January 2012. **The Group agreed to support this bid recognising the positive benefits for both quality and costs which such a service would generate.**

Kind Regards

LT

Director of

- Quarterly prove our efficiency savings
- Stated that we would save 273 OBD/month

7 day/week service – 8am – 430pm

New purpose built unit within ID unit

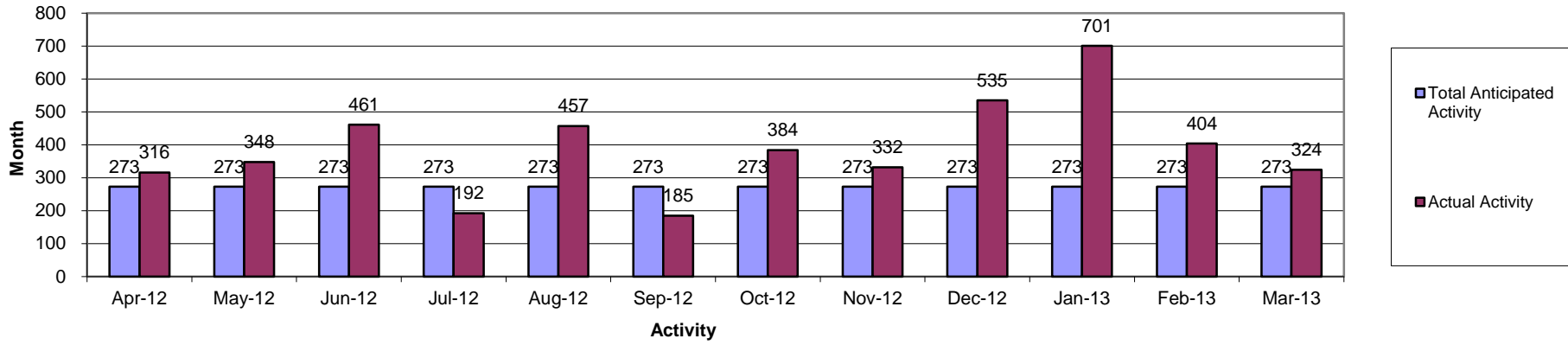


5.8 wte nursing staff

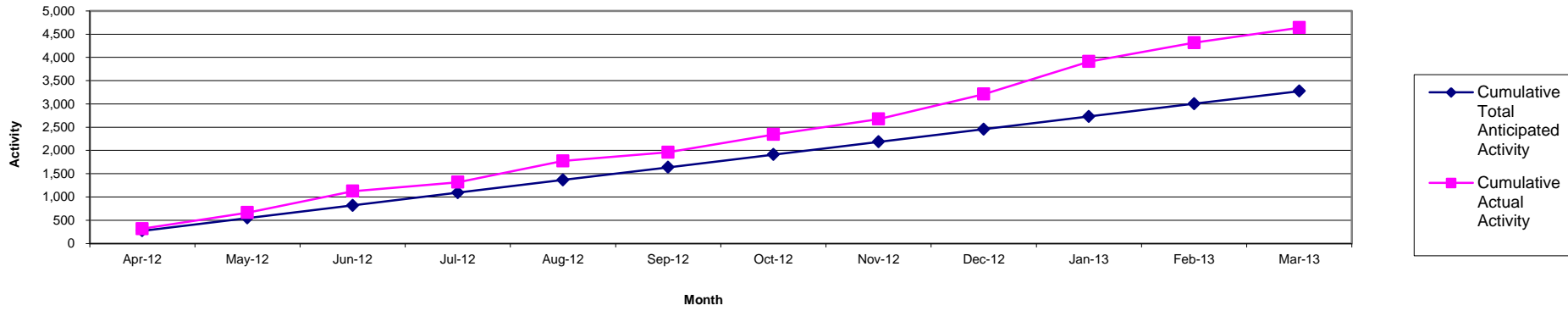
0.2 wte clinical pharmacist

rotating ID registrar

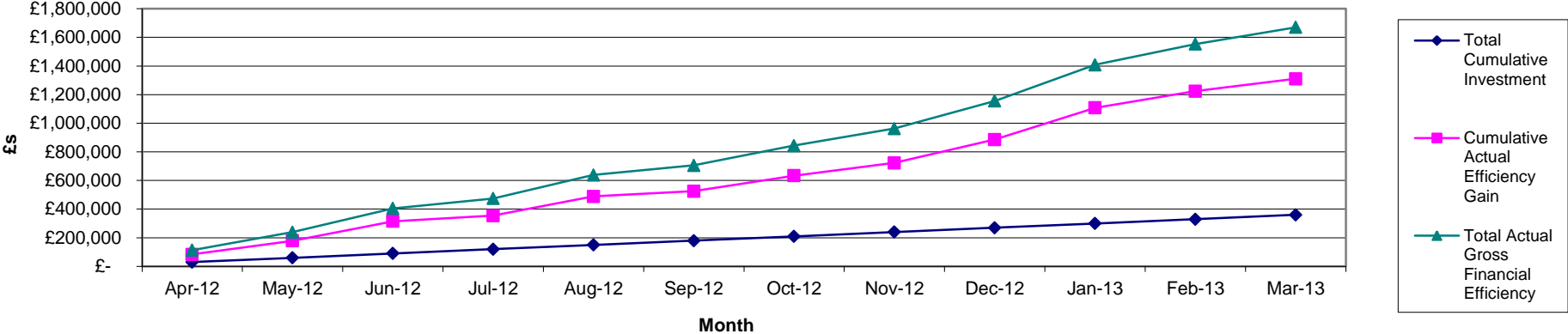
OPAT Activity - Apr 2012 - March 2013 - Actual v Anticipated



OPAT Cumulative Activity - April 2012 - March 2013



OPAT - Investment and Efficiency Gain - Apr 2012 – March 2013



I would use the OPAT service again in the future

My treatment outcome was good

I had no difficulty accessing advice if needed once at home

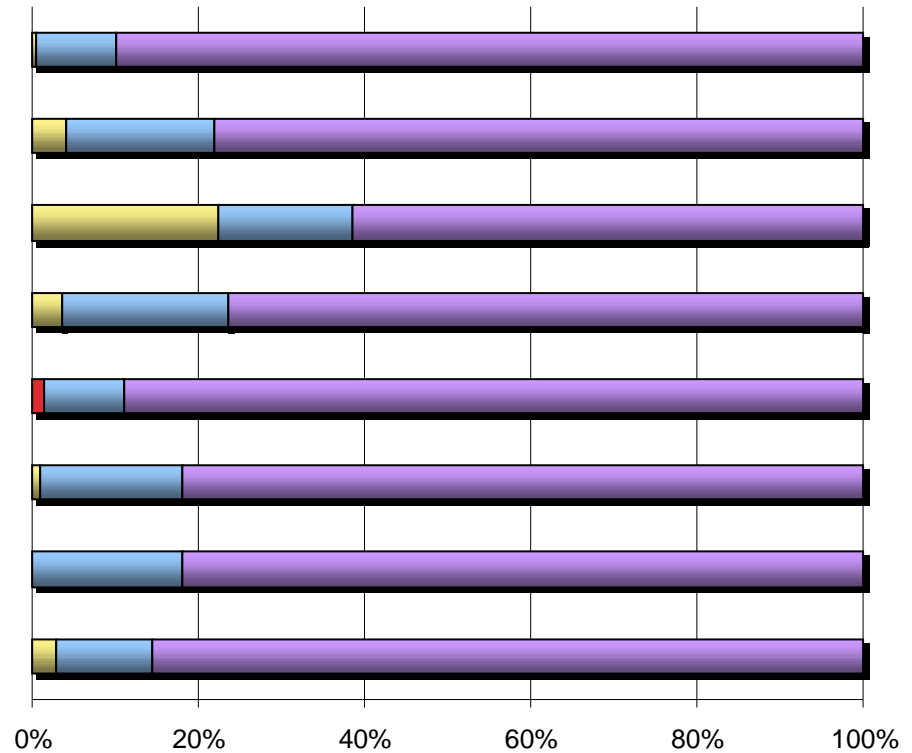
I was aware of how to access help or advice once at home

The care given to me during my visits to the OPAT centre was satisfactory

Any questions I had were answered appropriately and were helpful

The explanations I received regarding my treatment were satisfactory

It was better to be an outpatient rather than in hospital to receive treatment



Strongly agree

Agree

No opinion

Disagree

Strongly disagree

helpful

marvellous
satisfactory
positive-experience
definitely-recommend
best-units
practical-skills
waiting
efficiently
positive
caring
easier

looked-after
wonderful
happy
freedom
best-experience
service
first-class
hard-working
warm
reassurance
knowledgeable
praise
aid
lucky
exceptional
good
generously
valuable
lovely-team
good-scheme

amazing-care
wonderful
flexible
better
really-nice
very-good
grateful
more-staff
much-better

professional
supportive
really-nice
good-experience
brilliant
for

great
pleasant
relaxed
no-hesitation
responsive
win-win
efficient
kind

care
brilliant
for
staff
very-pleased
attentive
terrific

wasted-time
overworked
attention
quickly
staff-shortages
really-well
painless
high-standard
mch-better

very-nice
top-class
perfect
wonderful
happy
freedom
best-experience
service
first-class
hard-working
warm
reassurance
knowledgeable
praise
aid
lucky
exceptional
good
generously
valuable
lovely-team
good-scheme

friendly

excellent

January 2013

NHS Lothian agreed substantive funding
for OPAT

DIY medication clinic is success



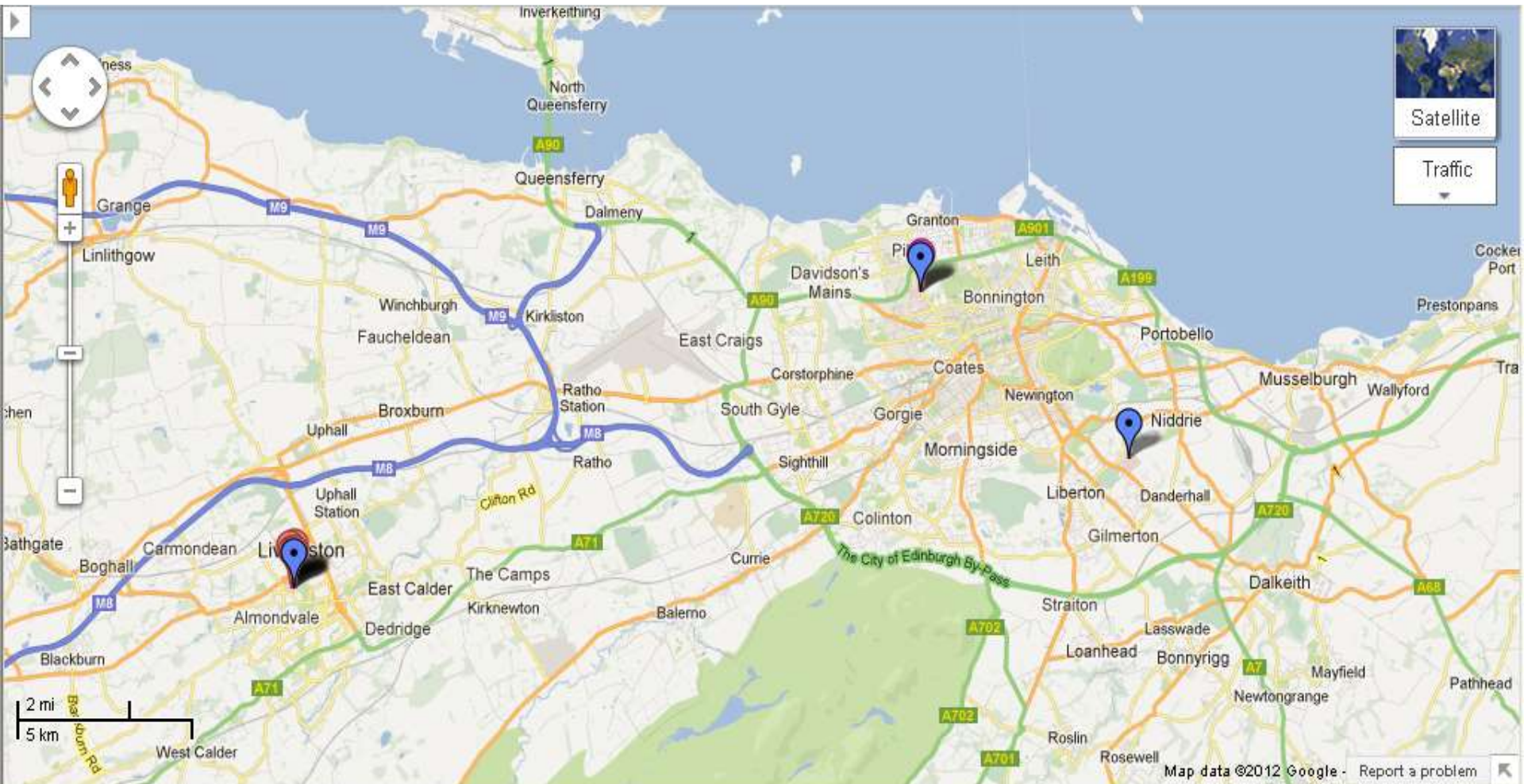
The future

December 2012 – further round of invest to save bids

Successfully acquired funding for a satellite OPAT
run at St Johns hospital in Livingston

Estimated treatment numbers of 300 patients/year

3 nurses, 0.1 wte pharmacist



- NHS Scotland now wholly different to NHS in England and Wales
no competition,
no commissioning
funding grants for pockets of work with defined outcomes
- Excellent manager who realised potential of OPAT and supported its development all the way
- Anxiety amongst ID colleagues and other specialties that OPAT would mean bed closures so very important to sell savings as efficiency gains – beds filled by patients who need to be there
- Conservative estimate in numbers of patients treated
- Patient feedback – very powerful tool
- Fought hard for 7 day a week service