

NHS Lothian R&D Conference

28 March 2019

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**The Big Strategic Challenges
for NHS Lothian – how can
Research, Development and
Innovation help?**

Muir Gray 20 years ago....

The three eternal verities of:

Demography

Technology

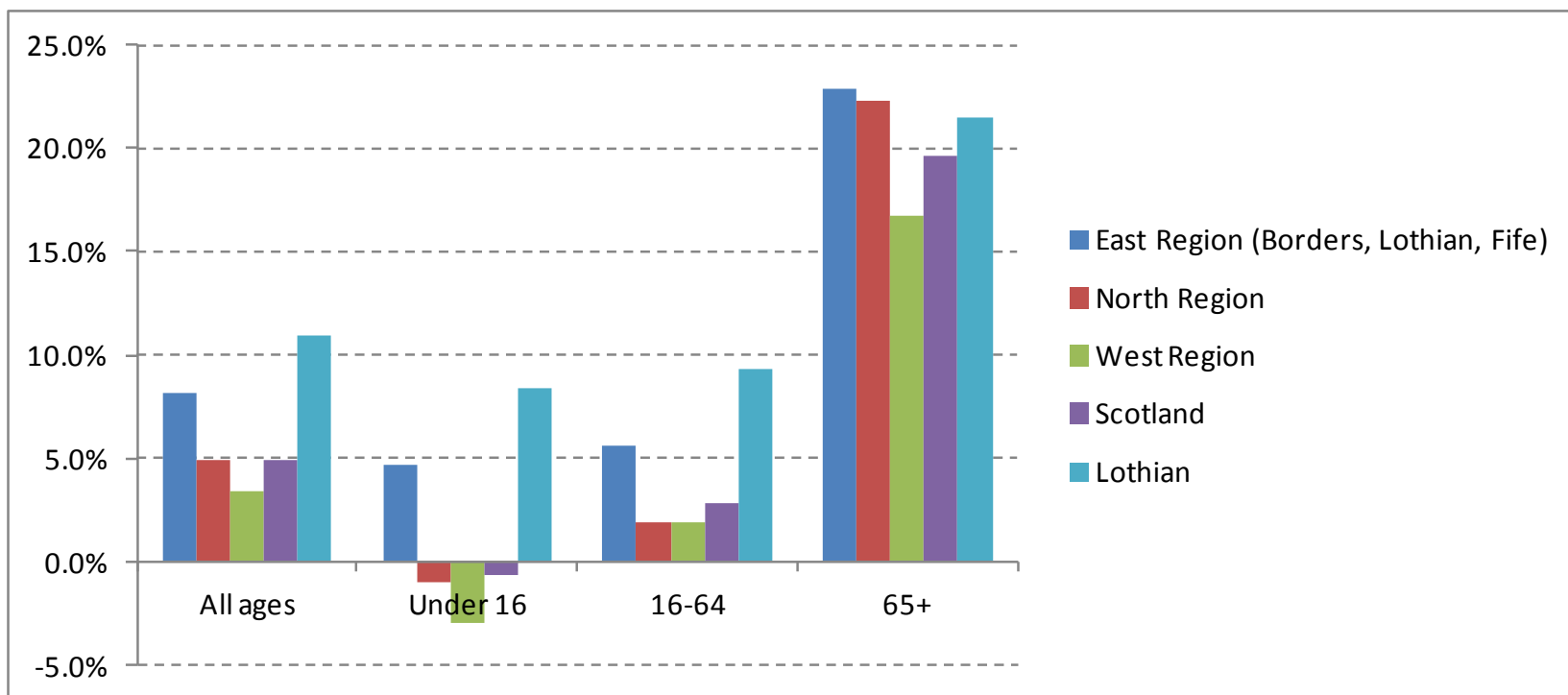
Expectation

**Will mean that the growth in demand
will exceed the growth in resources**

Demand – Resources gap

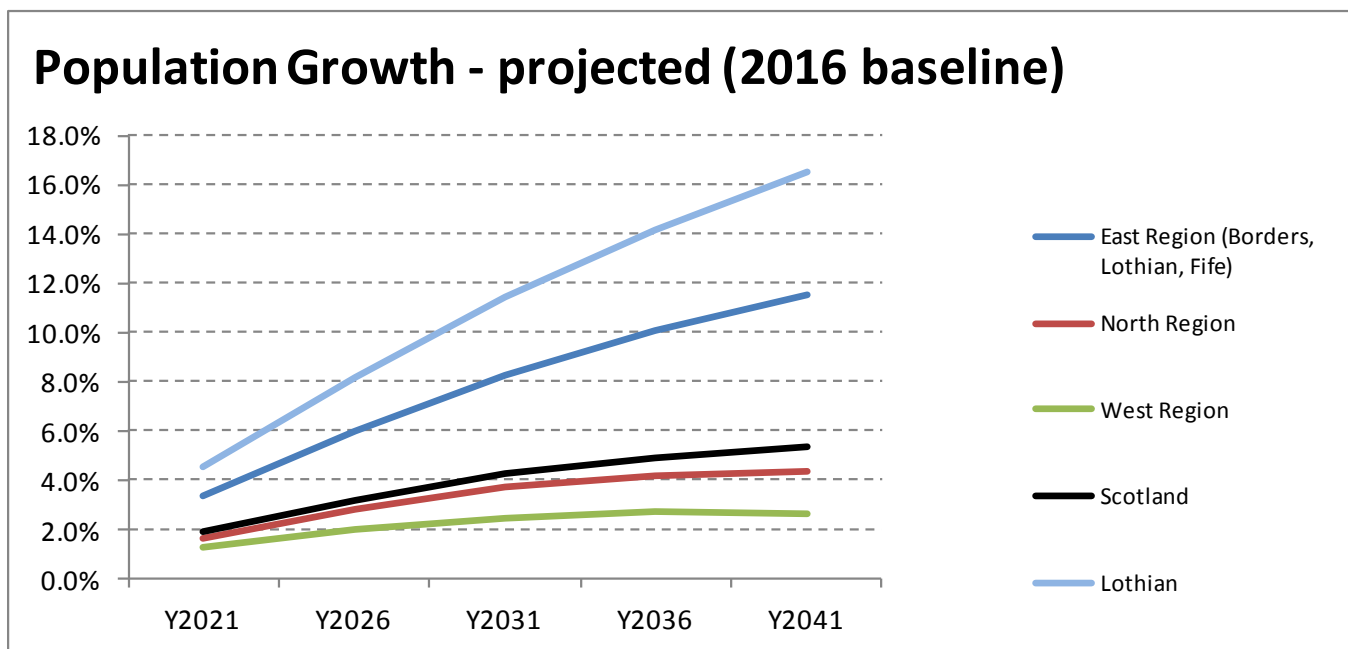


10 Year historic Growth - % by Age Band (2007 – 2017)



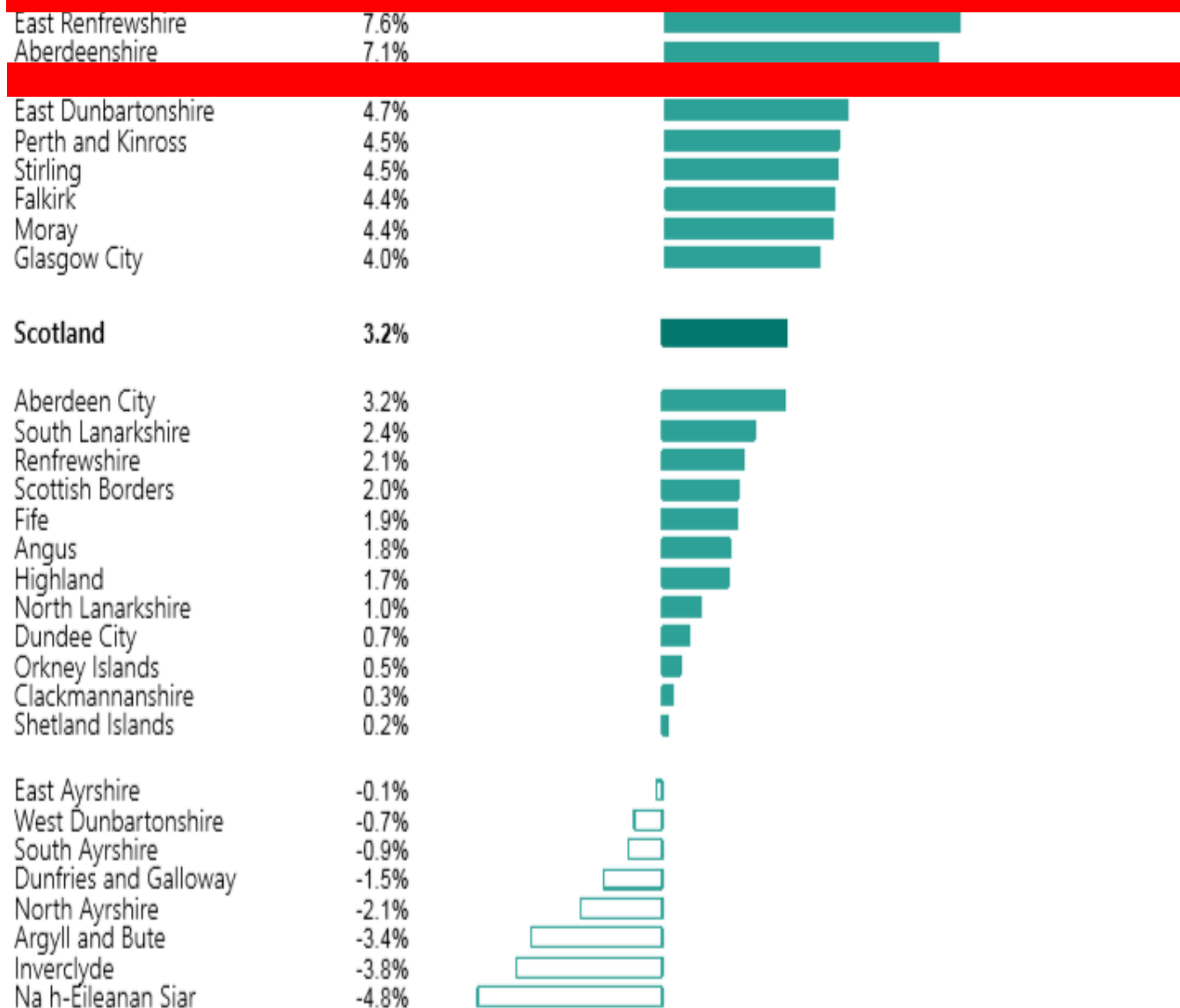
- Lothian rate of growth is highest rate in total and amongst highest in each age band.
- In total, and by age band, the East region has exhibited the highest rate of population growth over last 10 years.
- In most recent year, Lothian had the highest growth rate amongst over 65s.

Forecast Population - % growth (5 year increments, 2016 base)



- East region is expected to grow three times faster than any other region in next 25 years
- Lothian growth rate is projected to be c.11% higher than Scottish average over same period
- Lothian is expected to show highest rate of growth in over 65s over same period.

Projected percentage change in population between 2016 and 2026

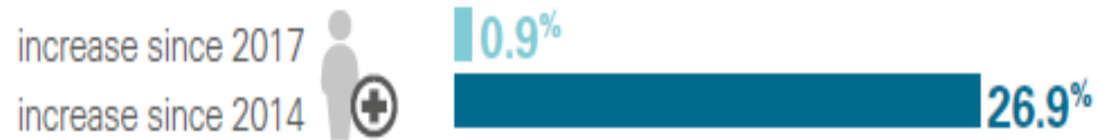


Demand pressures

Indicators of demand and activity for acute services in 2017/18

Demand for secondary care services

305,754 patients waiting for first **outpatient** appointment in March 2018

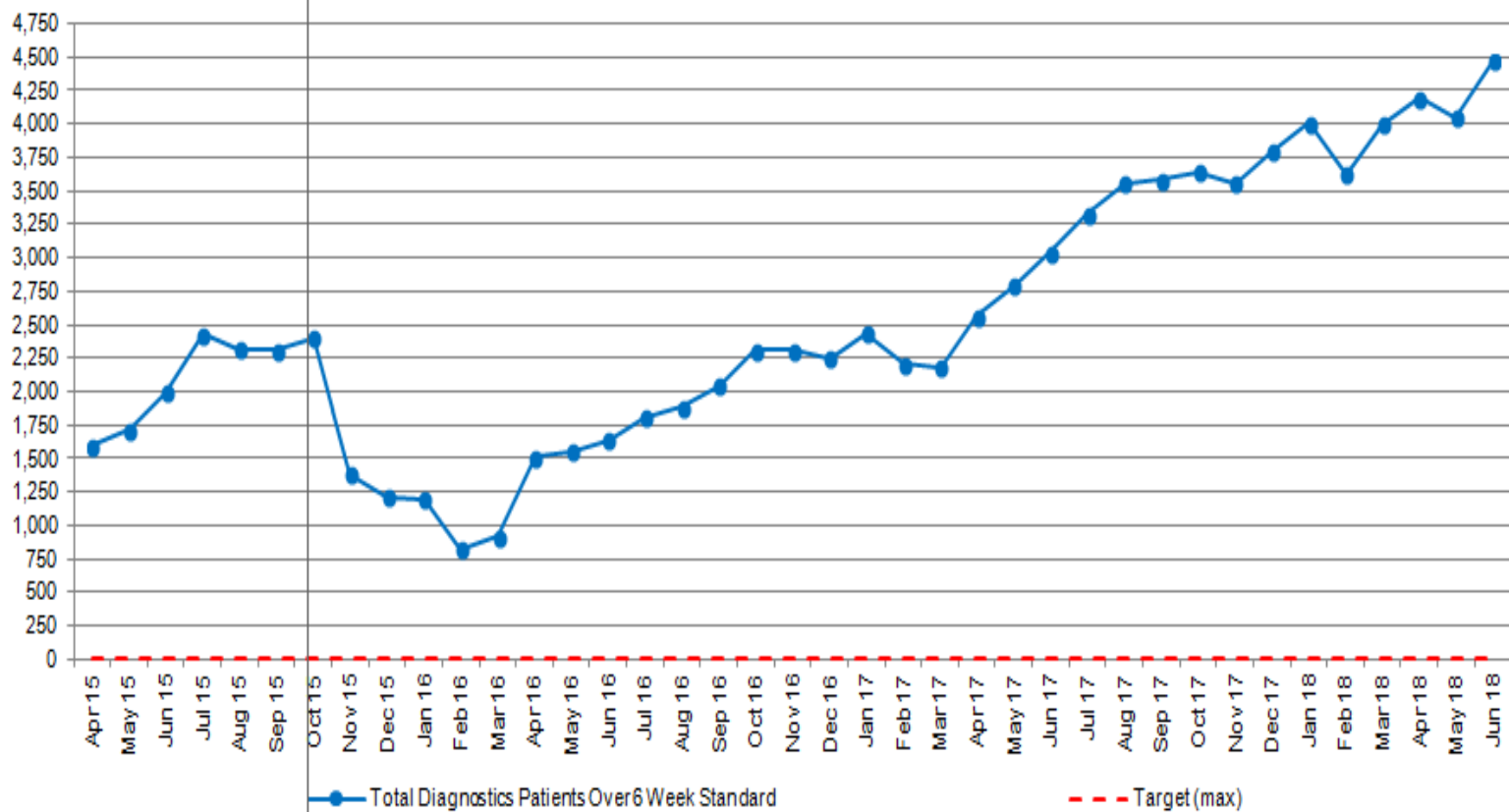


72,837 patients waiting for first **inpatient** appointment in March 2018

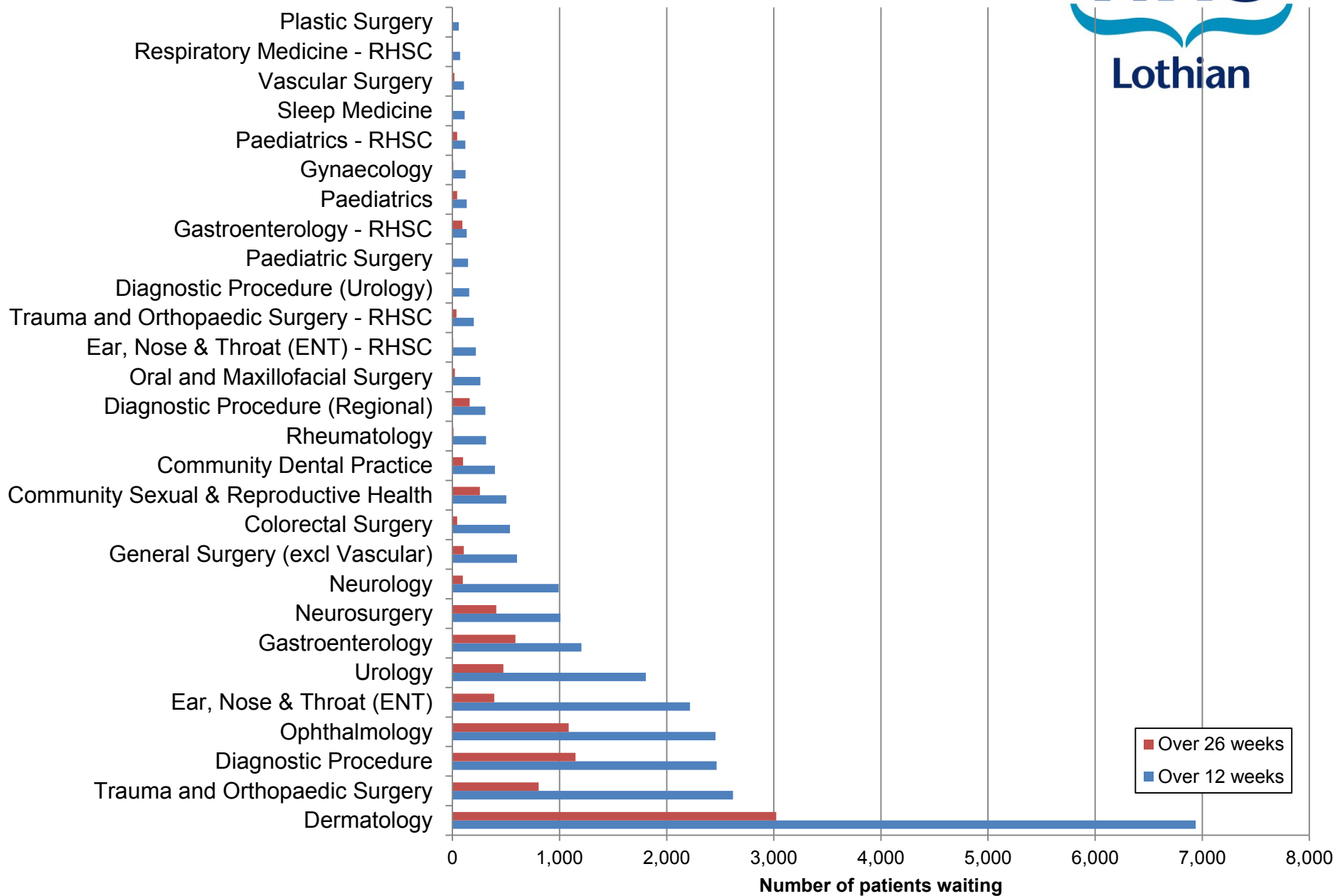


Time Series

Total Diagnostics Patients Over 6 Weeks



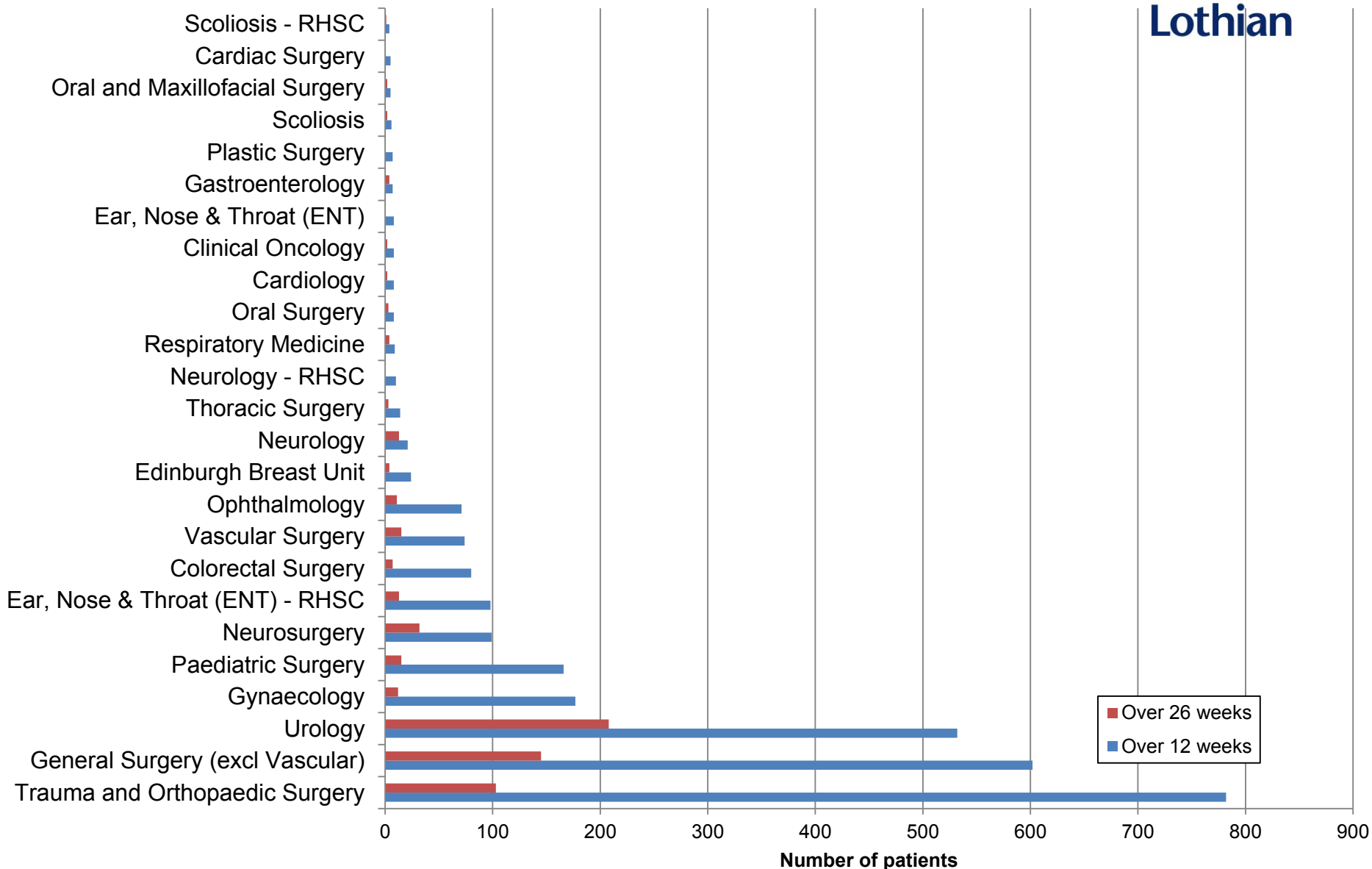
New OP Waits over 26 and 12 weeks
Appointment Status = Initial & Appointment Booked
Sourced on 27/02/19



New IPDC Waits over 12 and 26 weeks

Appointment Status = Initial & Appointment Booked

Sourced on 27/02/19

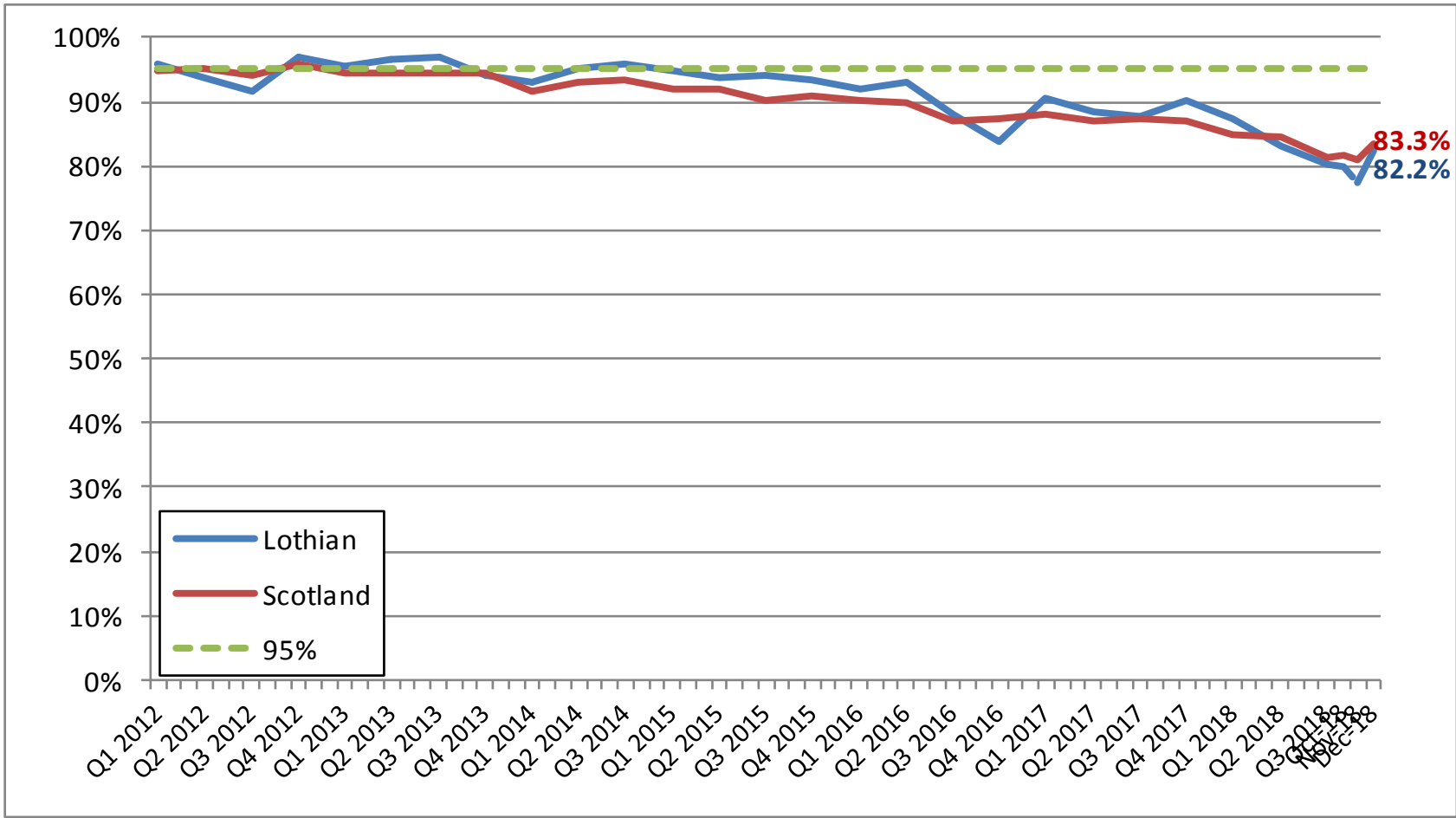


Clinical Risk Matrix

Specialty	The No. of weeks which 9 out of every 10 patients had been seen in quarter ending the January 2019	No. of patients waiting over the 12 week waiting time standard at week ending 19/02/2019	Risk Rating			Risk score
			Risk based on current length of wait for 90% of patients (1-5)	Probability of clinical risk (e.g. cancer) (1-5)	Risk based on number of patients waiting over the waiting time standard (1-5)	
GI Diagnostics*	114	2420	5	5	4	
Dermatology	57	6894	5	4	5	
Gastroenterology	49	1299	4	5	3	
Colorectal	29	539	3	4	3	
Orthopaedics	41	2804	4	2	4	
Urology Diagnostics*	15	526	4	3	2	
Urology	15	1804	2	4	3	
General Surgery	28	622	2	3	3	
ENT (pead)	25	202	3	3	2	
Ophthalmology	43	2535	2	2	4	
Gynaecology	14	119	2	4	2	
ENT (adult)	34	2102	2	2	3	
Vascular	24	117	2	3	2	
Orthopaedics (paed)	22	199	2	2	2	
Paed. General Surgery	-	133	1	3	2	
Breast	6	2	1	4	1	

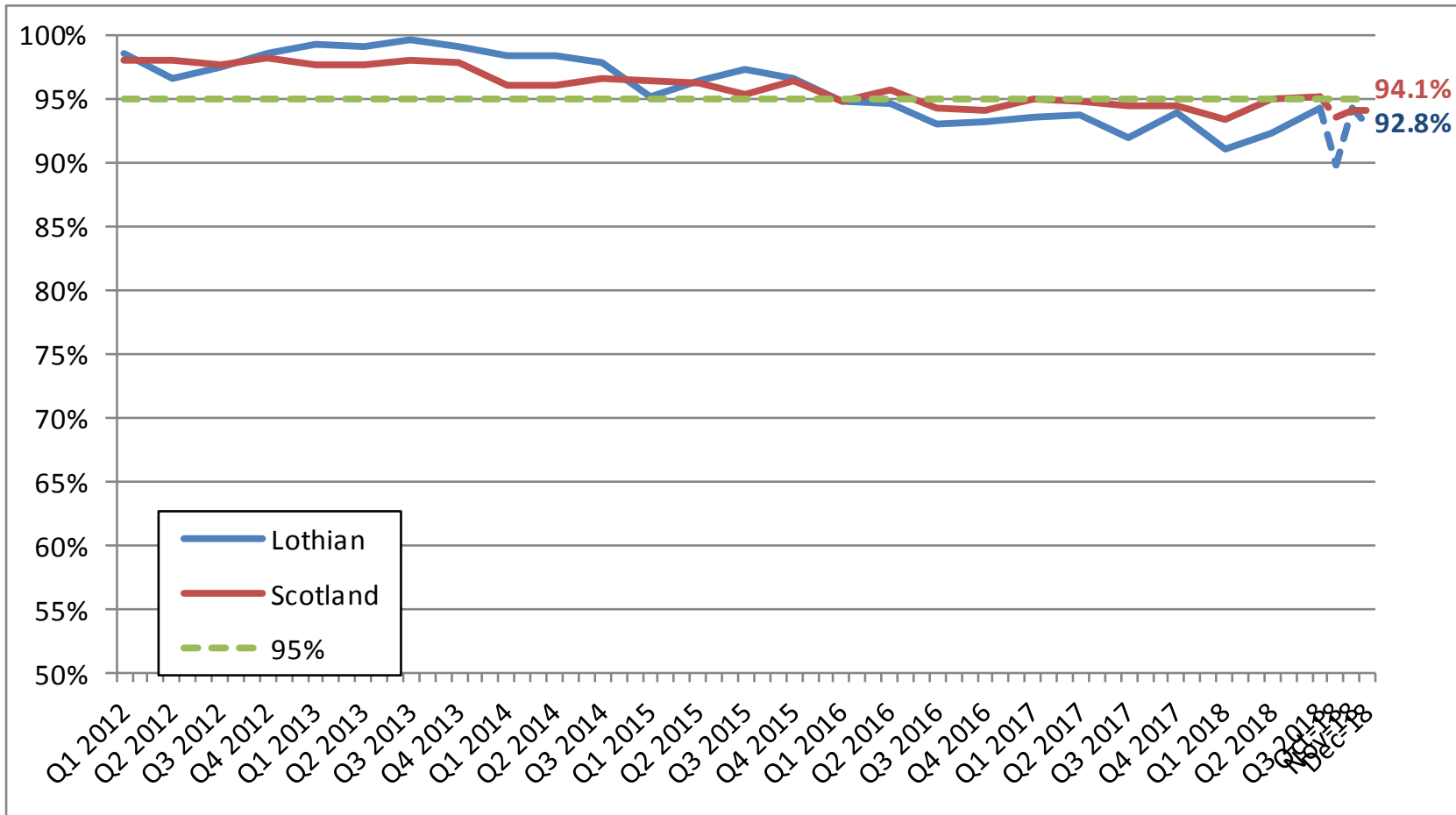
Cancer waiting times

62 day performance

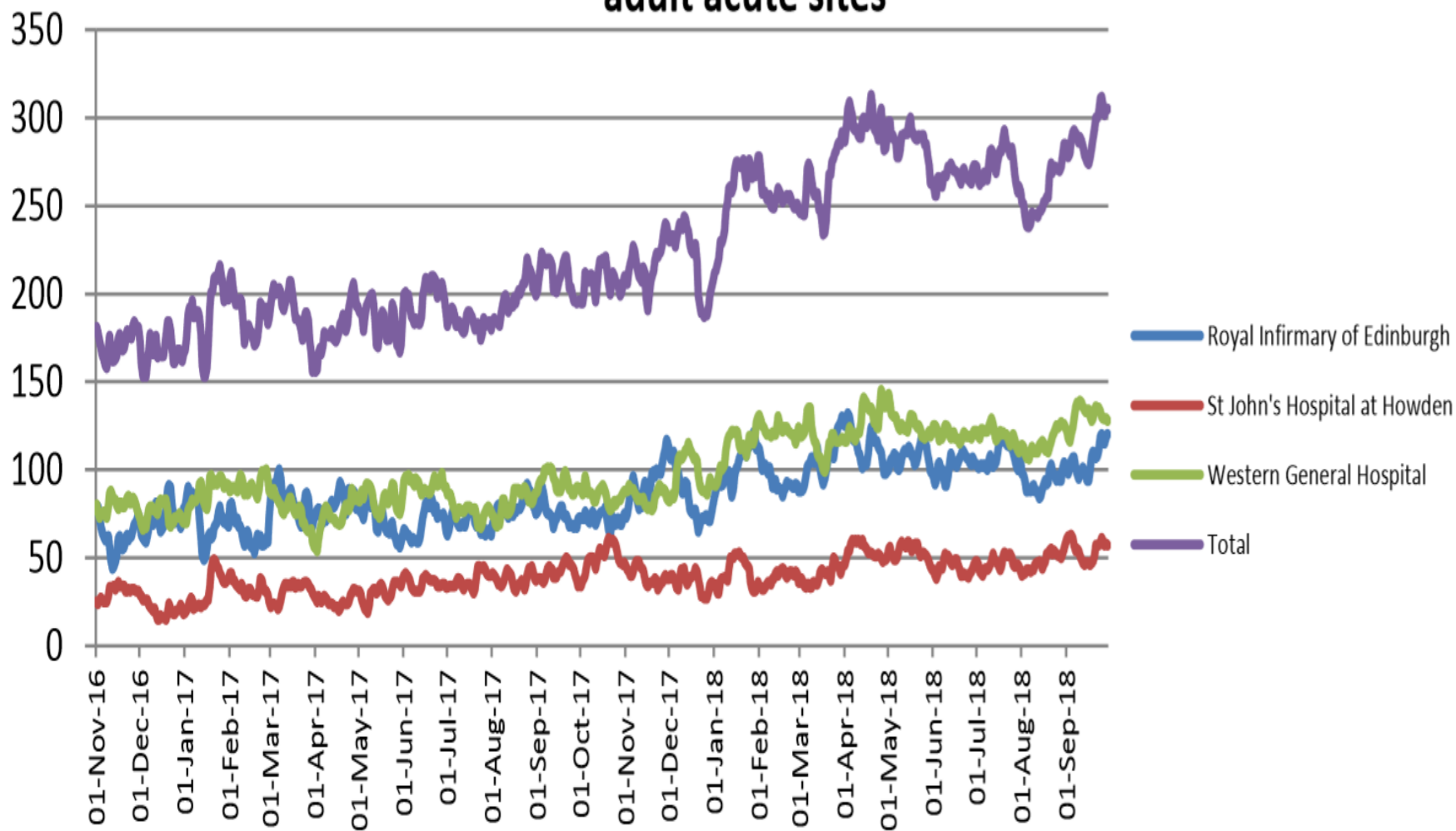


Cancer waiting times

31 day performance



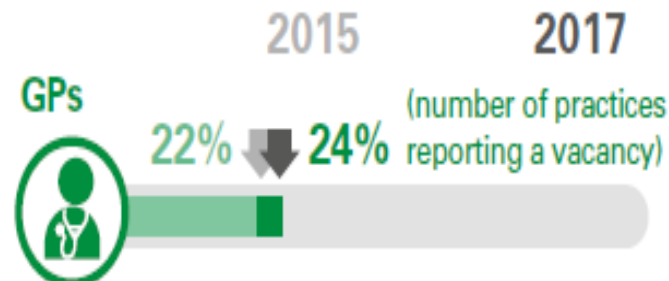
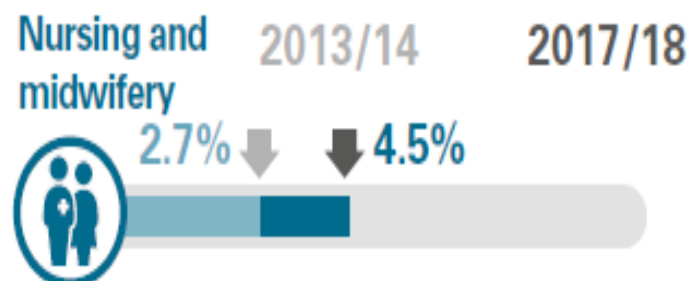
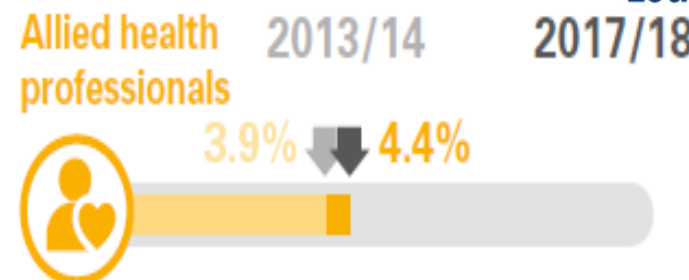
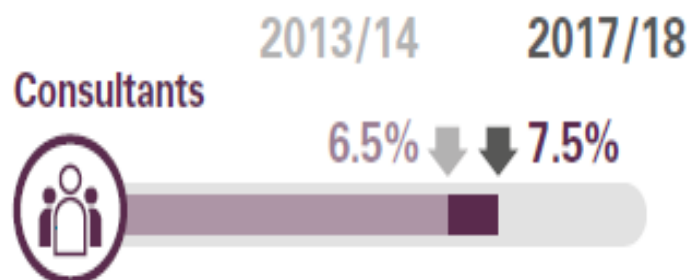
Average number of beds occupied by delayed discharges per day in adult acute sites



Workforce Challenge

- Gaps in many medical specialties – general practice, psychiatry, paediatrics, radiology and CCT projections fall short of demand
- Nursing – supply less than required, ageing workforce, retiral cliff, gaps in health visiting, district nursing, theatres and critical care
- Social care – major challenges to recruit and retain staff in care homes and home care roles

Vacancy rates



Percentage of vacancies open long term



60% of consultant vacancies open at least six months



30% of nursing and midwifery and AHP vacancies open three months or more



27% of filled GP vacancies took more than six months to fill

Medical Workforce – GI (NHS Scotland)



GI – 5 years minimum. These are the numbers currently within the training programme. Trainees must complete foundation and core medical training (minimum 4 years). The average trainee will take longer to CCT. In programme attrition and post CCT attrition c.20-25%. The CCT outputs will vary and are only an estimate.

Estimated CCT outputs by year.

2017	2018	2019	2020	2021	Total
4	4	11	9	10	38

Consultants Vacancies as at March 2017

15.3 vacancies (wte) out of 132. 3wte total establishment = 11.6%wte vacancy rate (June 18 – 14.6wte out of 122.5wte = 11.9%)

Estimated retireals

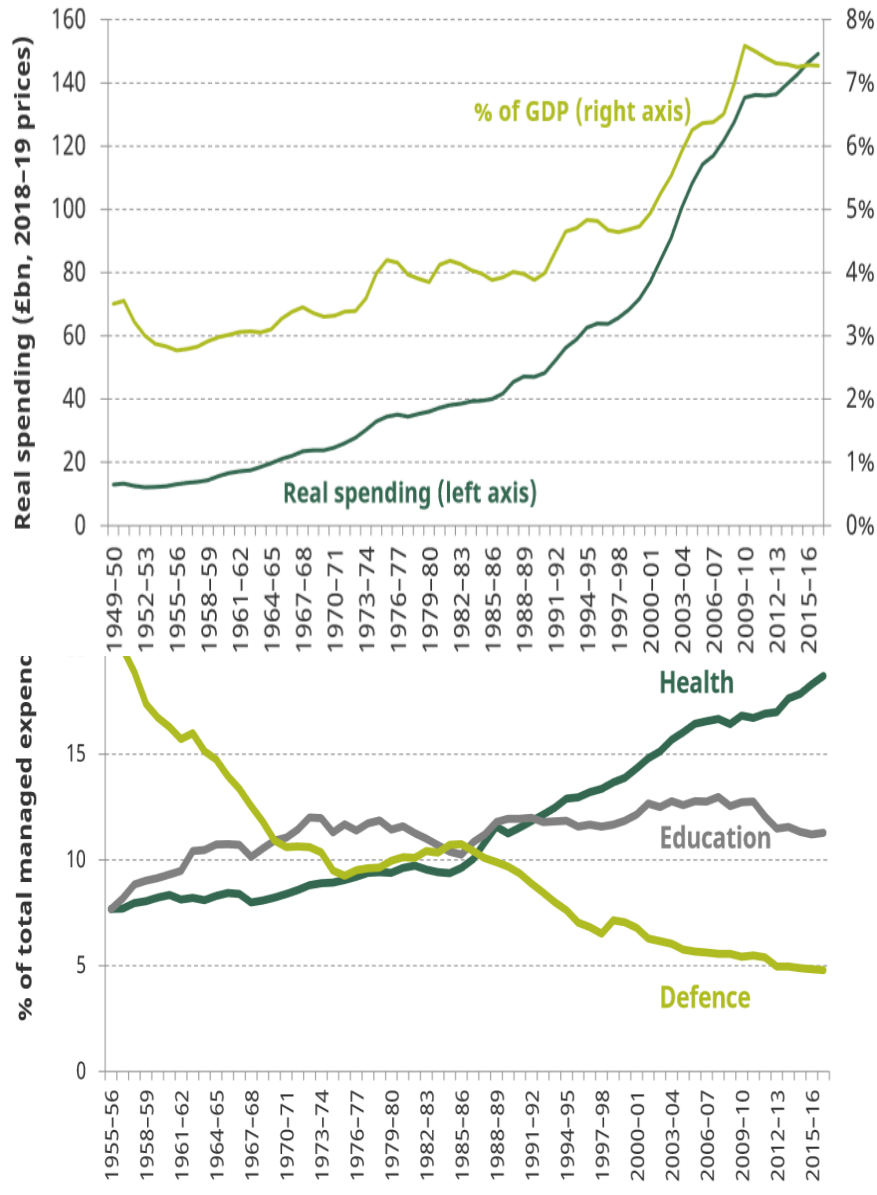
Based upon 2016 data and assumption that all aged 61 will retire = 23.4wte retireals by 2022. A headcount of 27 individuals.

Requirement to maintain current consultant establishment

23.4wte (retrialals) + 15.3wte (vacancies) = 38.7

However the following need to be built into data

- Post CCT attrition which is estimated to be c20-25%
- Growth
- Participation rate
- External NHSS recruitment



**NHS – a
seventy year
national
priority**

NRAC



NHS Lothian baseline – NRAC Shares



	2014-15	2015-16	2016-17	2017-18	2018-19
NRAC Target Share	14.36%	14.50%	14.66%	14.76%	14.80%
Allocated Share	14.37%	14.32%	14.43%	14.62%	14.65%
Gap (Allocated v Target)	0.00%	-0.18%	-0.23%	-0.14%	-0.16%
Revenue Impact (£m)	0.4	-13.9	-13.0	-12.0	-14.1
Cumulative Position (£m)	0.4	-13.5	-26.5	-38.6	-52.7

- Lothian budget allocation lags behind NRAC share
- Over 5 years this represents an accumulated shortfall of £53m
- Current NRAC gap is £14.1m (rising to £14.9m in 2019/20)

Note – excludes effect of any non-recurrent funds allocated in year

Need to reconcile



- Availability of financial resources
- With the availability and affordability of workforce resources
- With rising demand for services and addressing deteriorating access performance across primary care, secondary care and social care

The Gap.....



Can only be met by a combination of:

- Prevention of demand
- Mitigation of growth in demand
- Addressing irreducible net growth in demand through:

1. Workforce substitution – self management, digital health systems, Artificial Intelligence, robotics

2. Paying more through taxation or insurance or charging – the extra £20bn or so

Getting Serious about Prevention

- Broader collaboration required
- Need to get traction
- Initial focus on areas with real evidence base around IHI Triple Aim – improved health, patient experience and reduced per capita cost
- Looked at Diabetes, smoking, mental health
- Consensus around picking one area and getting really serious about achieving a step change and then build from there

Type 2 Diabetes



- Prevalence growing sharply
 - Costs around 10% of total health budget
 - Prevention and reversal (remission) achievable
 - Cost reductions possible counted in the tens of £millions
-
- Strategy extends way beyond health and social care
 - Full commitment to regional programme across all 6 councils/IJBs/HBs

Lothian Weight Management Experience with Diabetes UK



- 5 Lothian practices involved – patients with early T2D
- 24% achieved weight loss of 15kg or more
- 46% achieved remission
- 87% of those losing 15kg or more achieved remission
- Mean weight loss 10kg
- Budget less than 200k pa

Disruptive Innovation



- AI – Gastro USOC 40 referral letters a minute
- Process automation – finance – invoice reconciliation and payment
- Robotics – Laparoscopic prostatectomy, general surgery
- Primary Care – same day access hub in Musselburgh – partnership with NHS 24

- Digital primary care – Attend Anywhere, Babylon, Smart triage, ePharmacy
- Digital self-care and prevention – Smart Health communities, Self Management of care – wearables and telehealth – alternative to return outpatients, Big Data – population health, Patient portal and data access
- Virtual clinical workforce – Intelligent automation to augment existing workforce, robotics and automation, decision support
- Digital Hospital – virtual clinics, paperless integrated records

Innovation Test Bed and Data Loch Initiatives



- Harnessing the power of multi sectoral regional collaboration
- Health and social care
- Edinburgh and South East Scotland City Deal
- NHS Lothian, NHS Fife, NHS Borders
- 6 Health and Social Care Partnerships
- University sector
- Industry, corporates, start ups
- Third sector

Innovation pathway

Problem or strategic priority

Unmet need or gap

Idea generation

Solution development

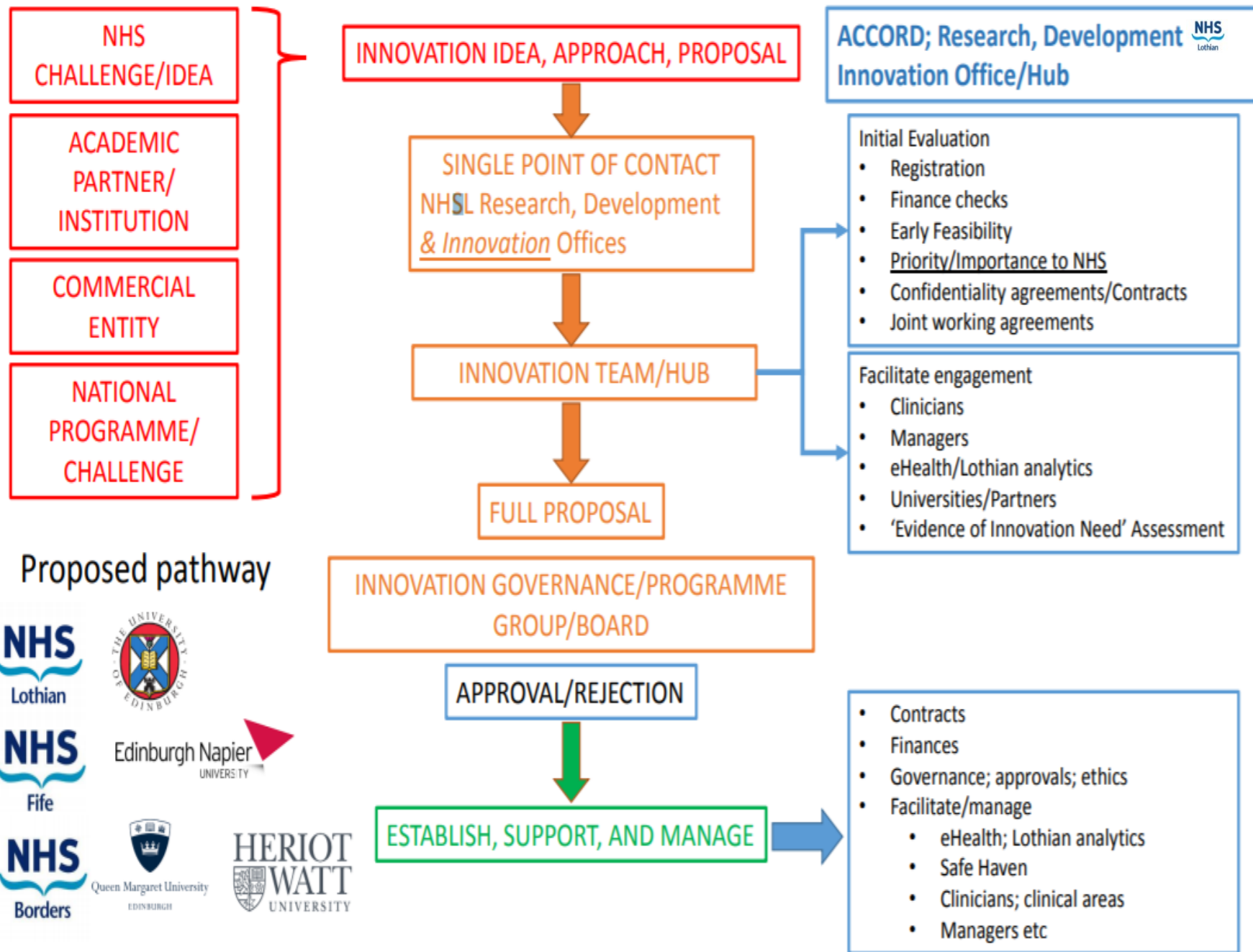
Testing

Evaluation
(clinical
and
economic)

Procurement
and
Implementation

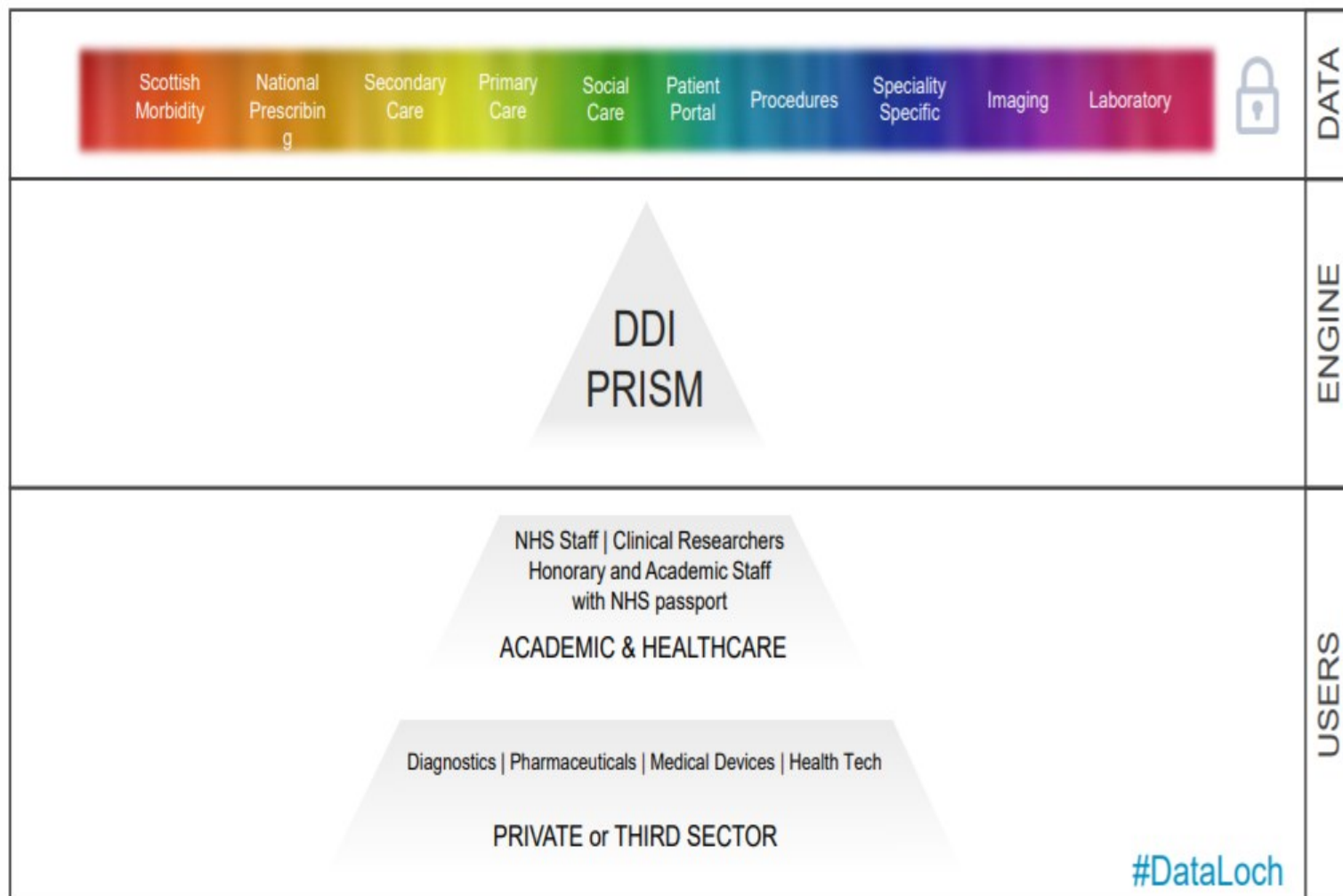


Potential Entry Points



Innovation Test Bed Strategic Projects

- Care Homes
- COPD
- Frailty
- Obesity



DataLoch : Data Driven Innovation



- After years of trying the stars have suddenly aligned:
- 5 year programme
- 3 phases – design, testing and implementation
- Health and social care integrated data
- Technical team to create the DataLoch
- Analytic DDI Prism team to support its use
- Pooling resources from CSO, Research bodies and City Deal