

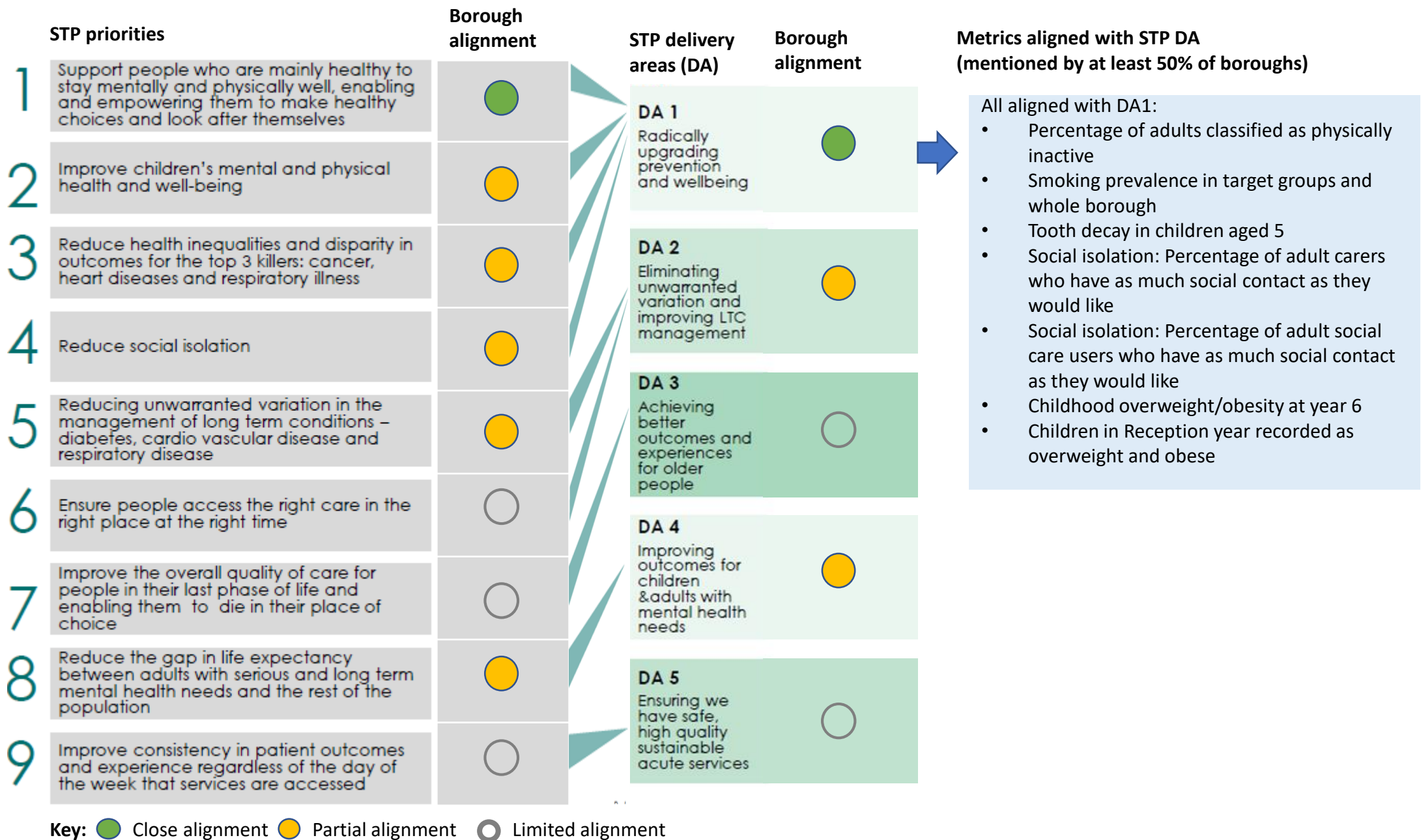
# POPULATION HEALTH ANALYTICS (LONDON)

Henry Ireland  
Imperial College Health Partners



**JSNA**

# Summary of priorities and delivery area alignment in NWL



# Priority alignment across NWL

## NWL STP priorities

	Brent*	Ealing	Harrow	Hillingdon	Hounslow	H&F	K&C	WCC
1 Support people who are mainly healthy to stay mentally and physically well, enabling and empowering them to make healthy choices and look after themselves	●	●	●	●	●	●	●	●
2 Improve children's mental and physical health and well-being	●	●	●	●	●	●	●	●
3 Reduce health inequalities and disparity in outcomes for the top 3 killers: cancer, heart diseases and respiratory illness	●	●	●	●	●	○	○	○
4 Reduce social isolation	●	●	●	●	○	○	○	●
5 Reducing unwarranted variation in the management of long term conditions – diabetes, cardio vascular disease and respiratory disease	●	●	○	●	●	●	●	●
6 Ensure people access the right care in the right place at the right time	●	○	○	●	○	○	○	○
7 Improve the overall quality of care for people in their last phase of life and enabling them to die in their place of choice	○	●	●	○	○	○	○	○
8 Reduce the gap in life expectancy between adults with serious and long term mental health needs and the rest of the population	○	●	●	○	○	●	●	●
9 Improve consistency in patient outcomes and experience regardless of the day of the week that services are accessed	○	○	○	●	○	●	●	●

Key: ● Close alignment ● Partial alignment ○ Limited alignment



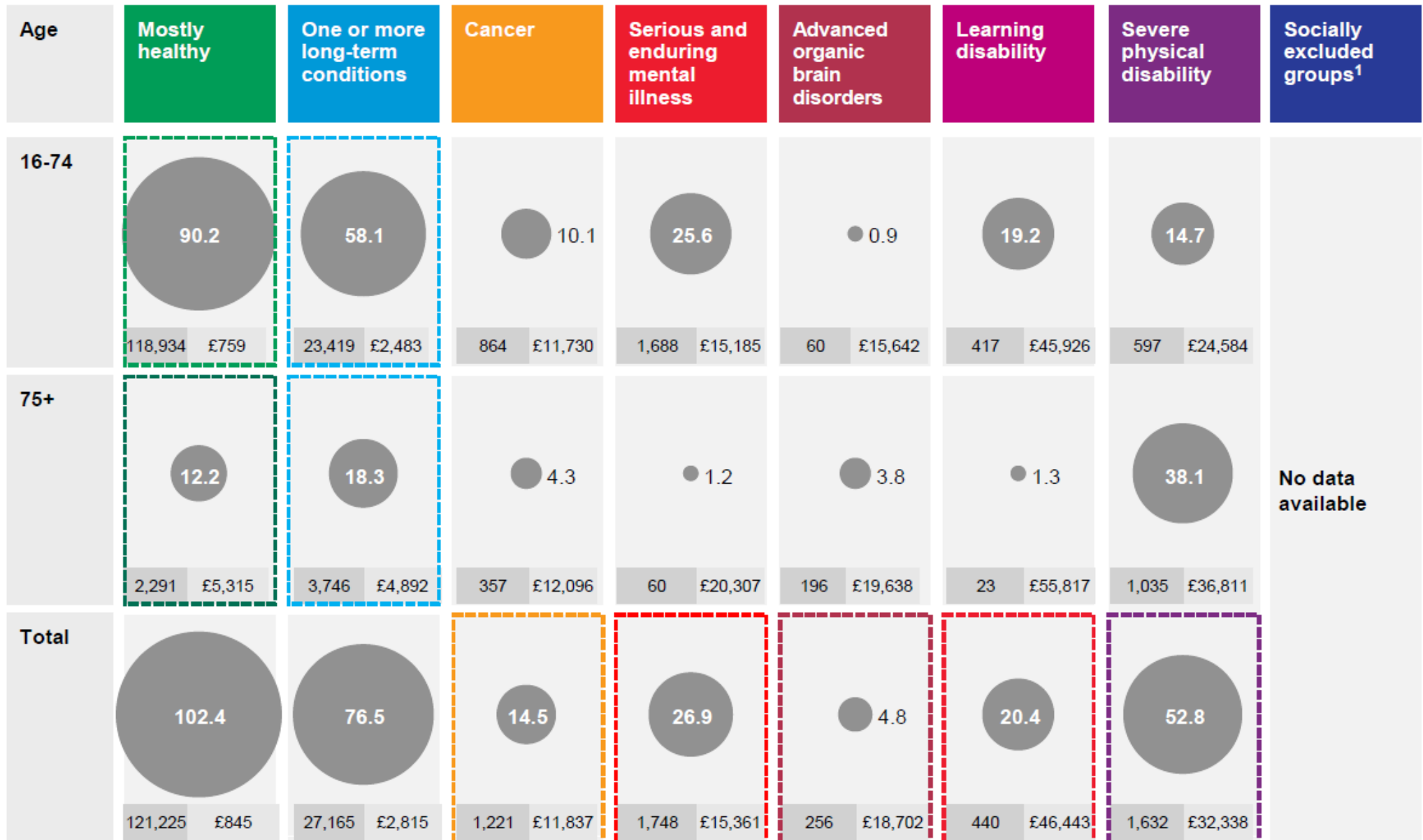
# Segmentation

# Total annual cost per population group

£ million

Number of people x £ y Average cost per capita, £

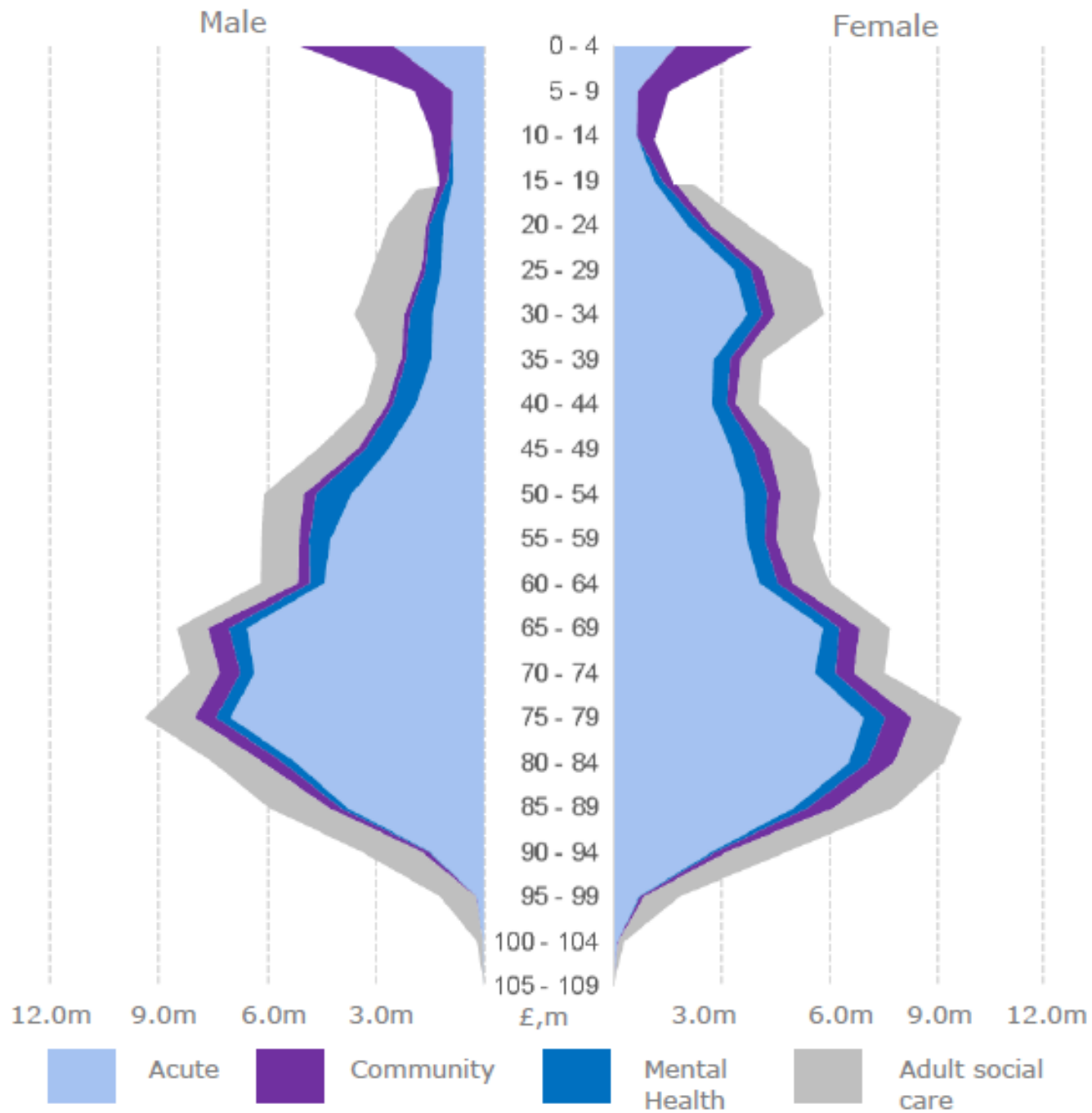
● Total annual cost □ Identified groups



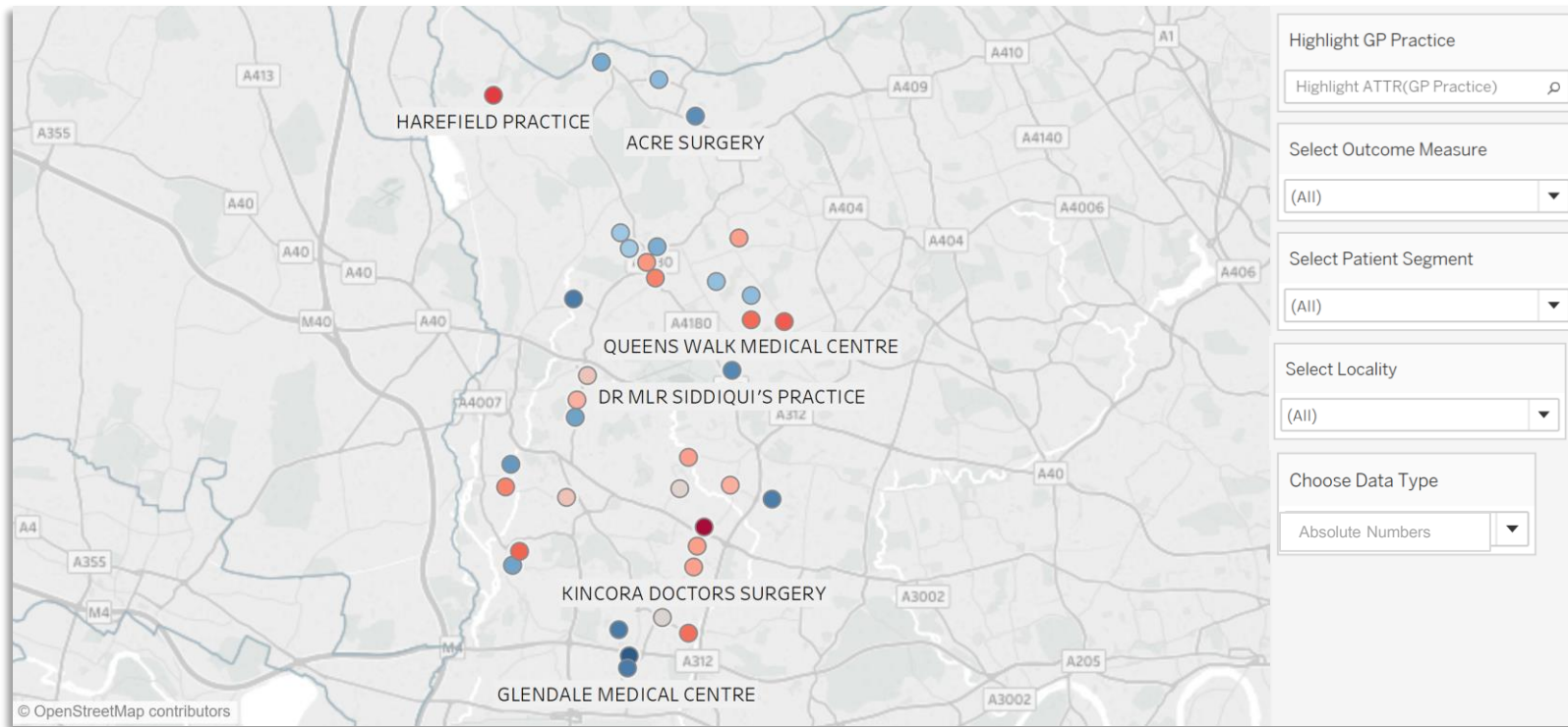
Note: The dataset includes a subset of the population of Hammersmith and Fulham; it represents ~90% of the population of that borough

1 For example, the homeless, people with alcohol and drug dependencies

Source: Integrated data-set from H&F, ICP data warehouse, FIMS 2012/13, CLCH budget, WLMHT budget, LA Budget, McKinsey analysis



# Which practices are **driving** activity?

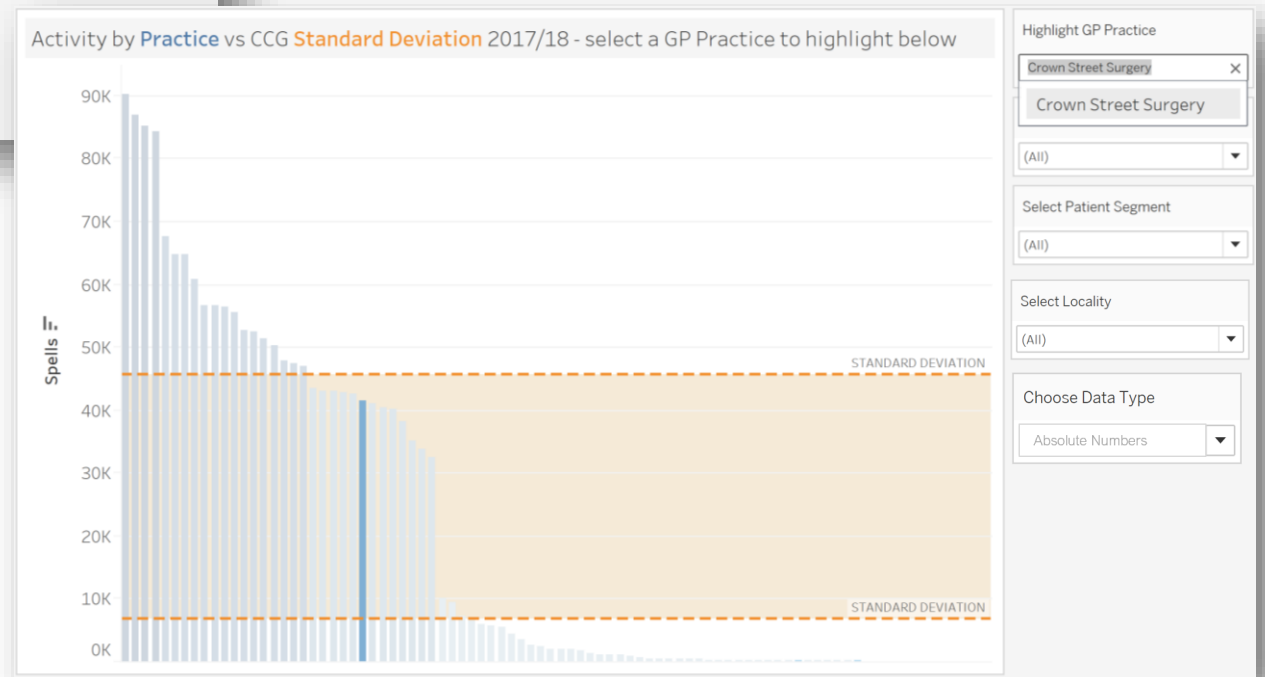
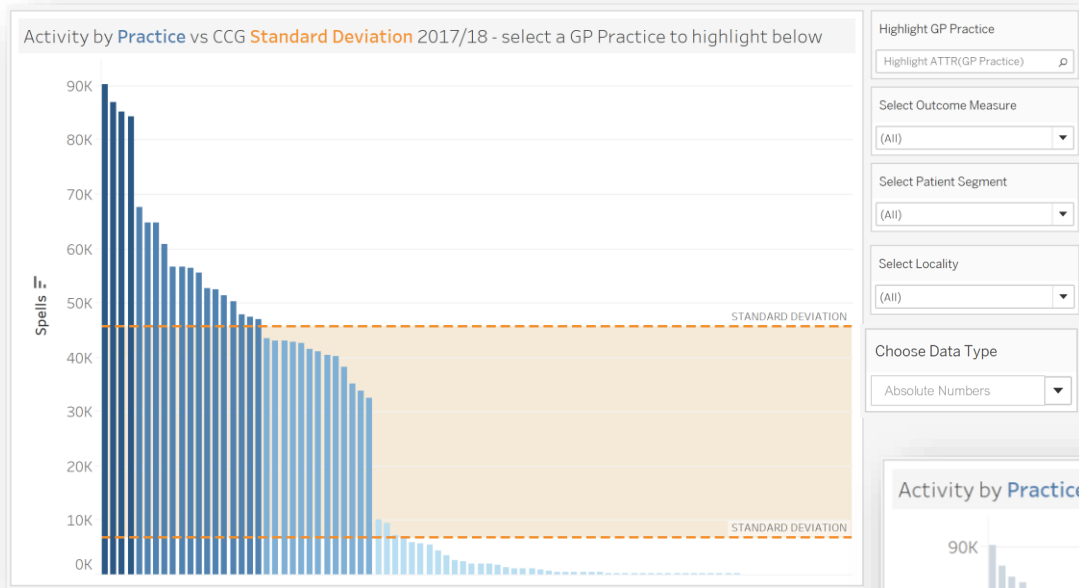


Note: This draft dashboard contains dummy data for demo purposes only

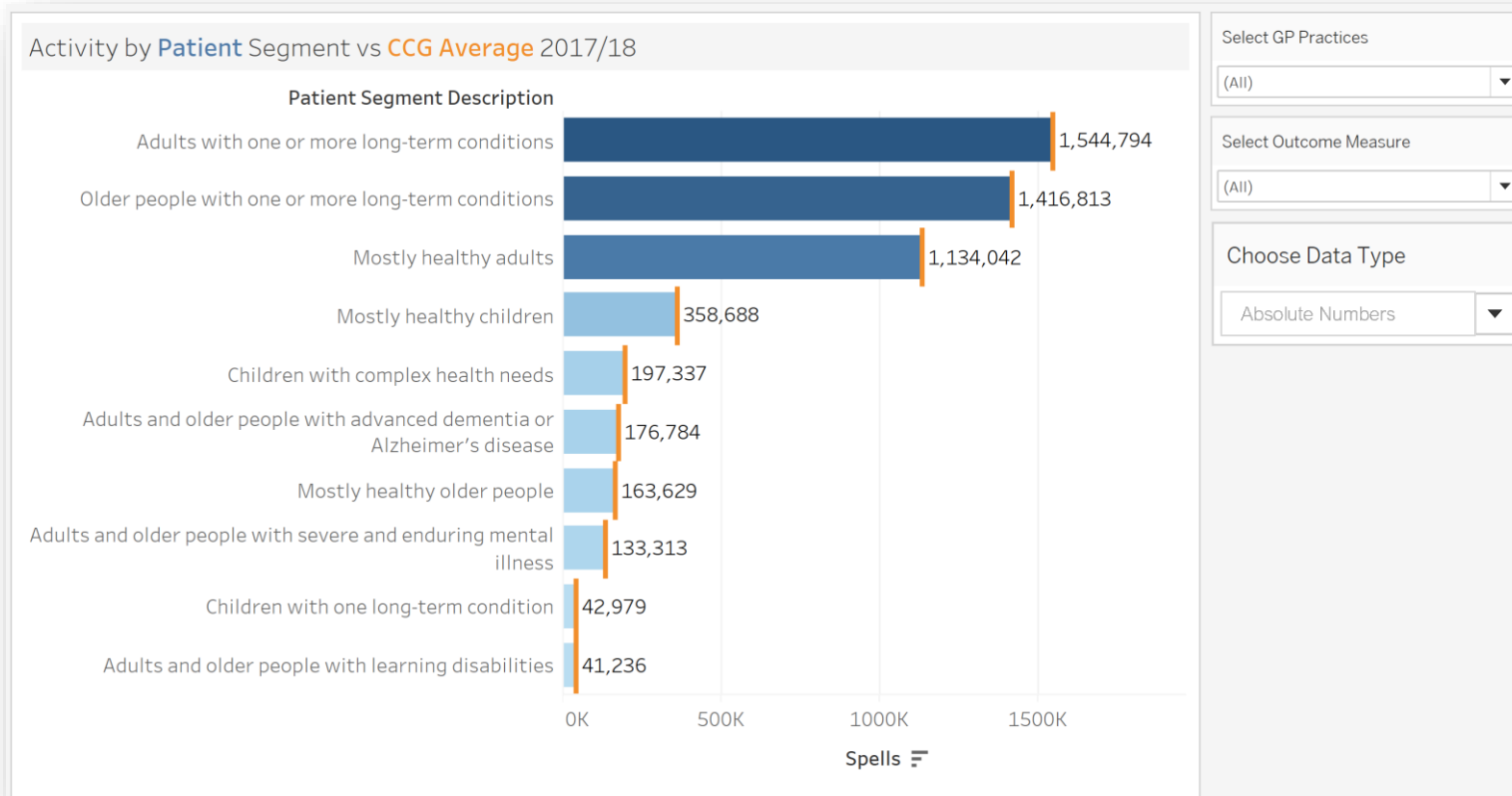


# Is my practice an **outlier**?

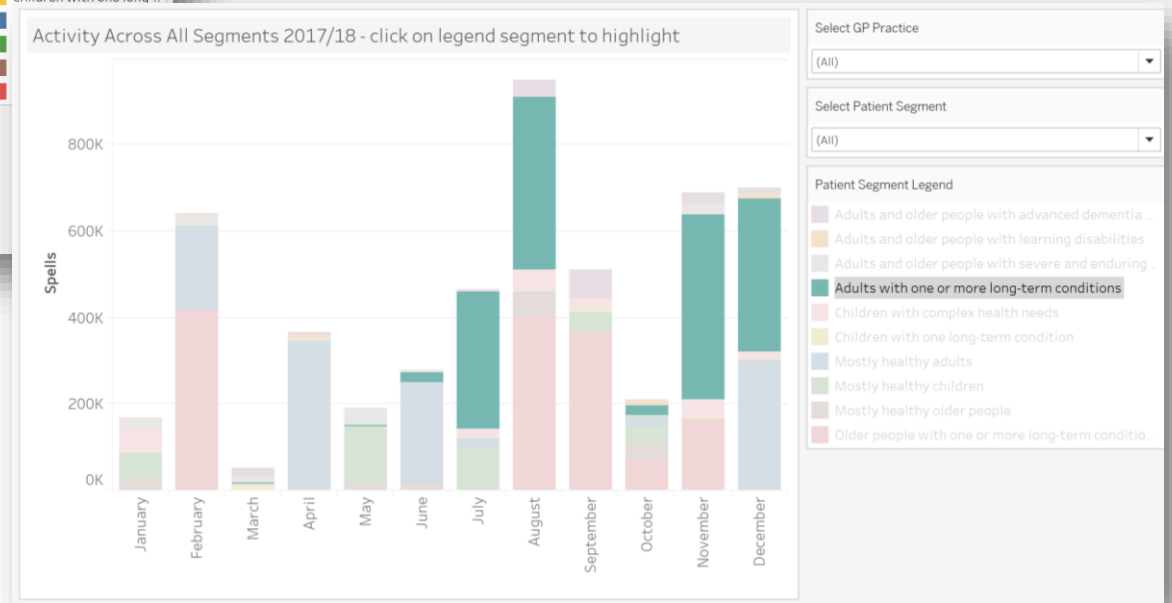
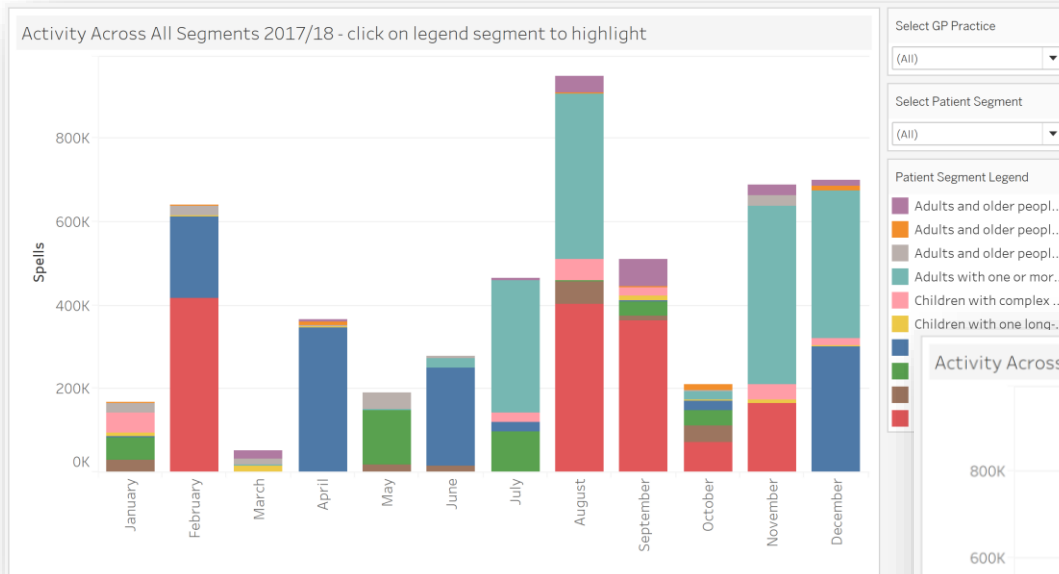
## How does my practice **compare** to my peers?



# How does my practice **compare** to the CCG average across all segments?



# Page 4: Which segments are **driving** my practices' overall activity





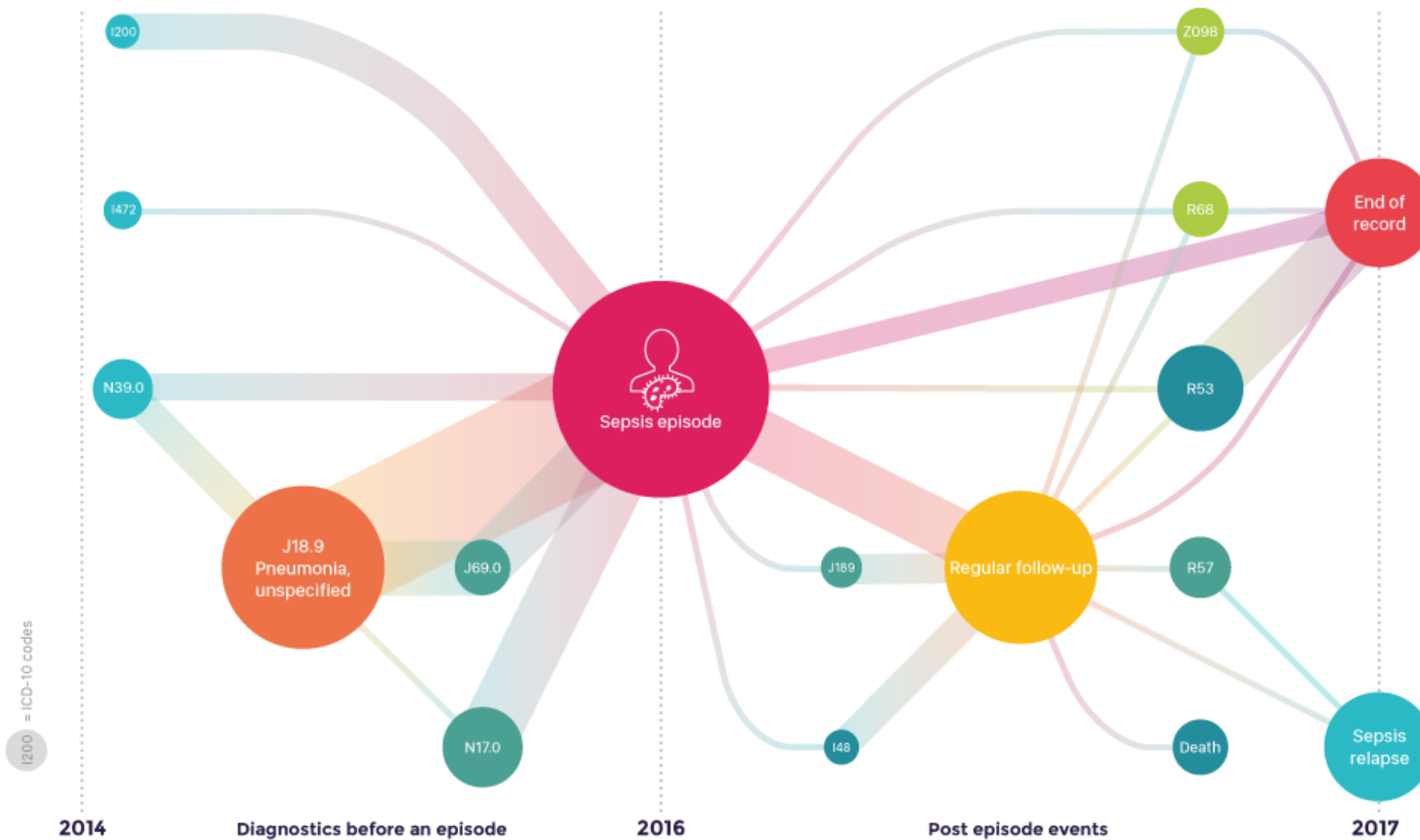
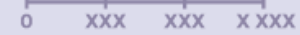
Care pathways

### Bowtie analyses: the study of patient pathways in sepsis (fictitious illustration)

Types of hospitalization



Number of patients

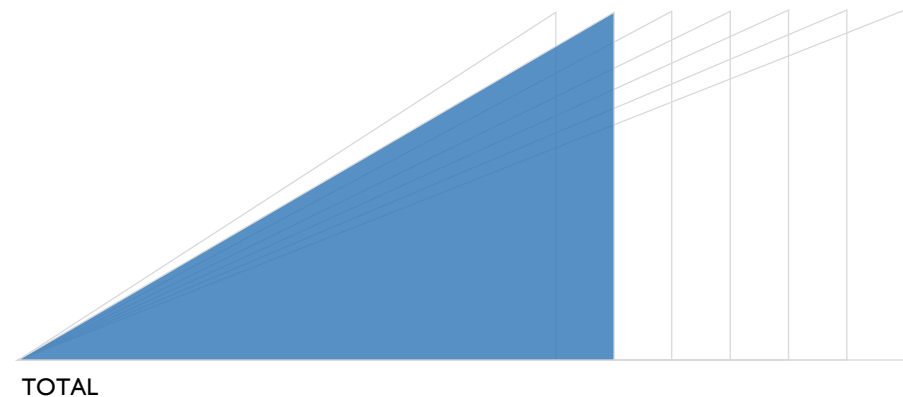
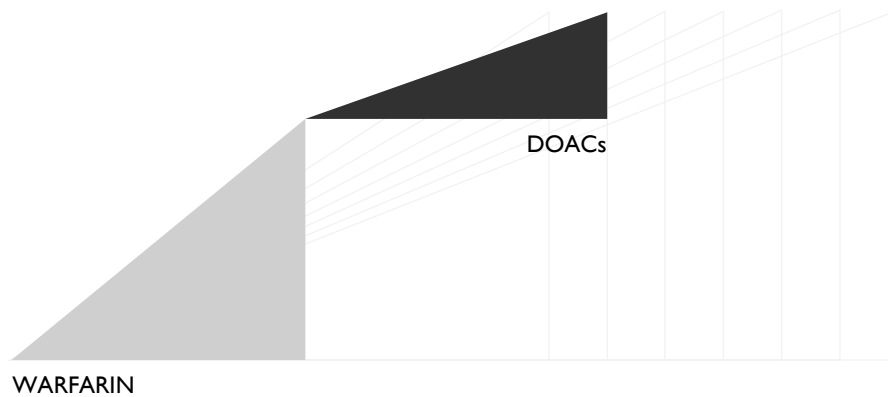


# Health economics



# 70% Warfarin / 30% DOACs

	WARFARIN	DOAC	OVERALL
NUMBER OF PATIENTS	555,000	236,000	786,000
SPEND	£159m	£163m	£322m
POPULATION HEALTH GAIN (QALYs)			161,410
AVERAGE INDIVIDUAL HEALTH GAIN			0.205



← £322m TOTAL SPEND →

11%  
INCREASED SPEND

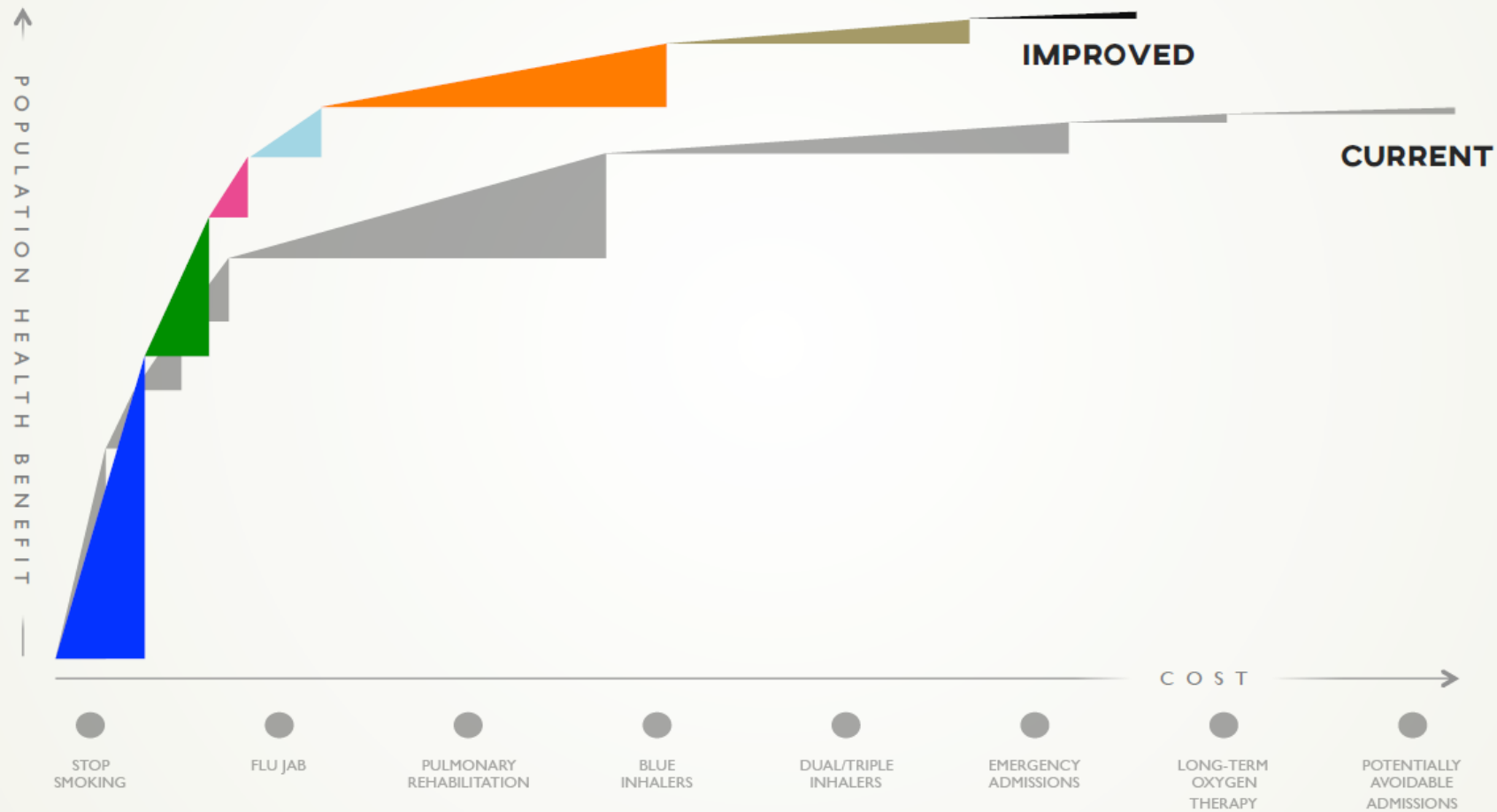
0%  
EXTRA POPULATION HEALTH GAIN

EACH £1 SPENT BUYS  
**4 hrs 23 mins**  
OF A QALY

(CONTRASTED WITH 80% WARFARIN / 20% DOACs SPLIT)

## CURRENT VS IMPROVED

By arriving at this point together, the STAR process can help stimulate a discussion around the current situation, an improved future scenario, and how we might move from one to the other.





# QALYs per £1



# Population health/disease dashboards

# Welcome to the Suspicion of Sepsis (SOS) Insights Dashboard

Suspicion of sepsis<sup>1</sup> (SOS) describes emergency admissions with infection that can cause sepsis. It is based on a validated set of 200 ICD10 codes that can be used to create reports from NHS administrative data. In England, SOS is the admission code in 1.9 million emergency admissions per year and is responsible for 25-38% of emergency admissions. An SOS code confers three to six times the mortality of non-SOS codes and SOS is the cited reason for admission in 60% of patients who die.<sup>2</sup>

More recent analysis of HES admissions data in March 2018, that excludes emergency admissions with a length of stay of less than one day, reveals that the percentage of all emergency admissions that contains an SOS code is 38% and the percentage of emergency bed days that contains an SOS code rises to nearer 50%.

We have constructed a national dashboard for SOS codes and a sepsis subset based on two of the SOS ICD10 codes – A40 and A41. The dashboard provides insights into the numbers of emergency admissions, rates of survival, and lengths of stay linked with a range of different factors – admissions with a length of stay of less than one day have been excluded. The data are provided over a number of years to facilitate measurement of the impact of improvement strategies, focussed on the use of measurement in improvement to support local teams in determining the innovations to be shared and in identifying best practice.

The dashboard is not just an information tool to be viewed in isolation; it is accompanied by strong narrative and supporting materials to enable as wide an audience as possible to engage with and use the analysis appropriately in order to benefit patients.

**Patient  
Safety  
Collaborative**

The SOS dashboard is not intended as a league table for comparing Trusts but it is designed to enable organisations to see an overall picture of hospital patients coded in the SOS category, allowing them to assess the scale at a local, regional, and national level. The dashboard provides intelligence to clinicians and managers as to whether interventions and innovations in sepsis / infection care are improving outcomes for patients. It will also help clinicians and managers plan and prepare local services better - understanding the level of sepsis and ensure adequate provision. The dashboard can also provide insights, such as recognising which types of infection most frequently lead to deterioration in patients or enabling assessment of organisations against themselves over time.

Start



# Suspicion of Sepsis



Watch Dr Matthew Inada-Kim's thoughts on why this dashboard is so important to healthcare professionals in their understanding of Sepsis

Sepsis is the severe end of infection or 'infection with badness' and is a massive healthcare problem with high estimated mortality and burden, but one without a gold standard diagnostic test or a stable definition. Patients with infection define their level of 'badness' by where they are cared for, with less unwell patients remaining at home, whilst those who are more compromised being admitted to acute hospitals as emergency admissions (SOS).

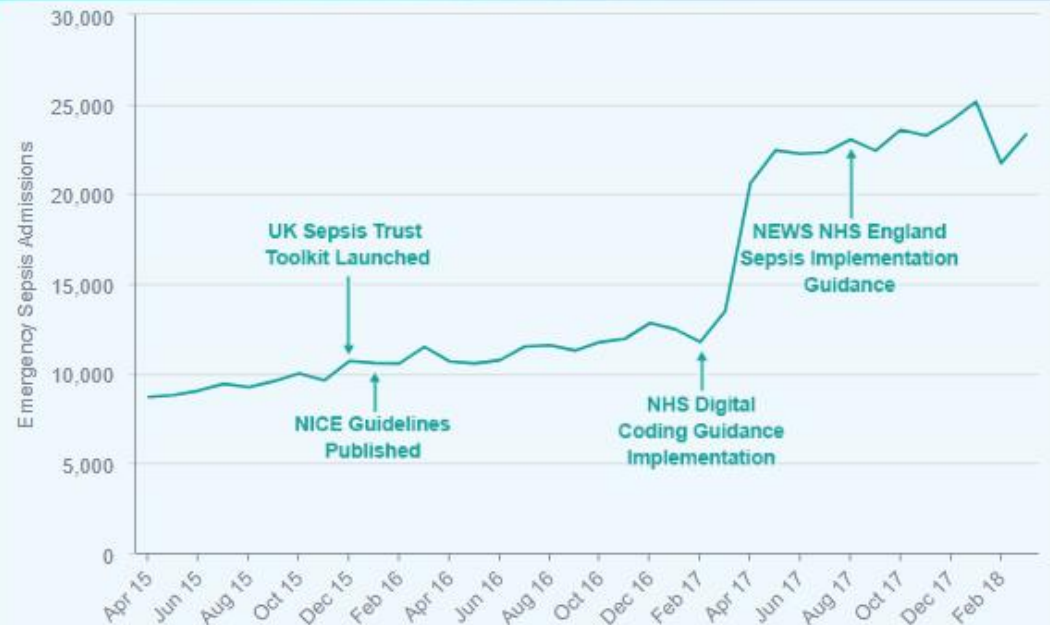
Determining sepsis numbers and outcomes in a population from NHS administrative data has been an extremely challenging and wicked problem, compounded by:

- The absence of a single, stable sepsis definition
- The absence of a gold standard test for sepsis
- Poor consistency of practice amongst clinicians and coders - clinicians have not reliably documented sepsis, even when treating patients with obvious evidence.

As a consequence, attempts to measure sepsis over time have shown large swings in numbers recorded based on the variable interplay between these three factors.<sup>1</sup> This dashboard displays hospital episode statistics (HES) data from NHS Digital and should be interpreted with the above observations in mind.

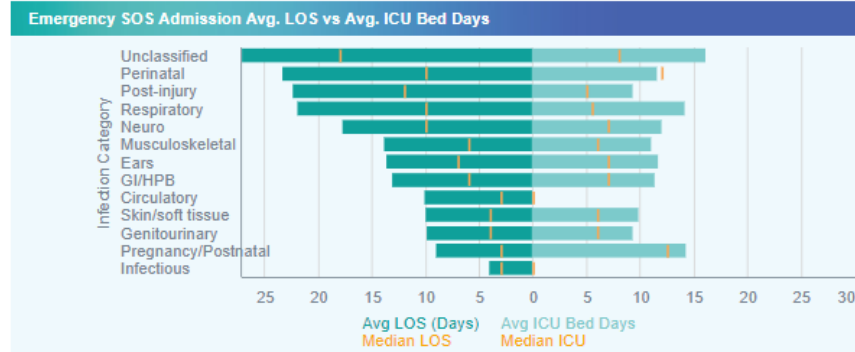
Please navigate through this dashboard by clicking the navigation tabs below which will provide both data and narrative for SOS and sepsis activity from admissions and inpatient bed days, through to post discharge insights both in terms of readmissions and survival:

Sepsis Coded Emergency Admissions Over Time

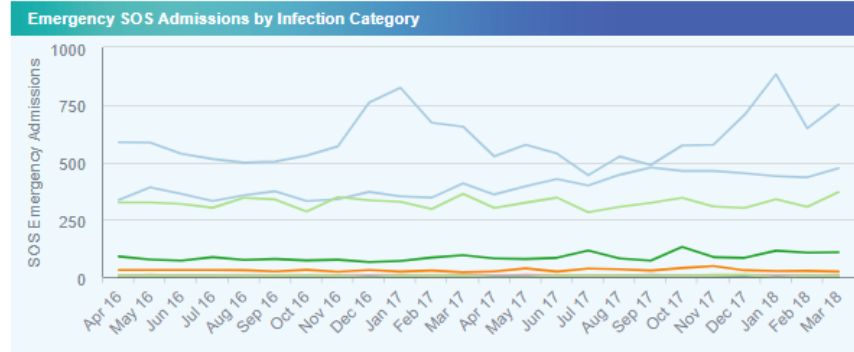


**Bed days.** This page enables a view of key measures that provides insight into what happens to patients with suspicion of sepsis or sepsis when they are in hospital. Insight into trends in bed day utilisation for these patients and the type of bed days they use at both a high and granular level can support the planning of interventions to shorten length of stay through improvements in clinical quality and management of patients with suspicion of sepsis or sepsis. These measures also enable us to see whether there has been any impact of interventions implemented at this stage of the pathway.

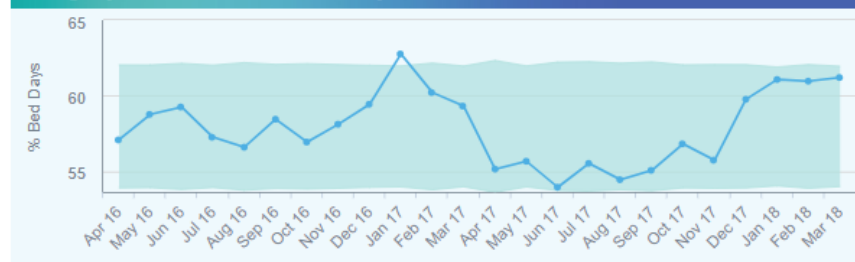
Imperial College Healthcare NHS Trust



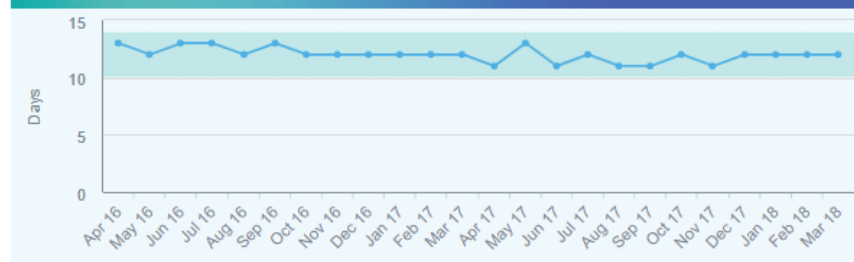
All Infection Categories



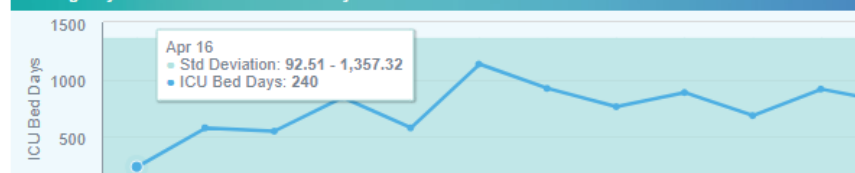
### Emergency SOS Admissions % Of All Bed Days



### Emergency SOS Admissions Avg. LOS



### Emergency SOS Admissions ICU Bed Days



# Atrial Fibrillation High Impact Intervention Tool

Start

Patients on AF Register (QOF 2016/17)  
**25,609 Patients**

Predicted AF Population (2016/17)  
**39,820 Patients**

PROTECT Opportunity Gap  
**4,676 Patients**

DETECT Opportunity Gap  
**14,211 Patients**

Population Landscape

## POPULATION LANDSCAPE i

PROTECT

DETECT

AF Business Case

Cost Impact

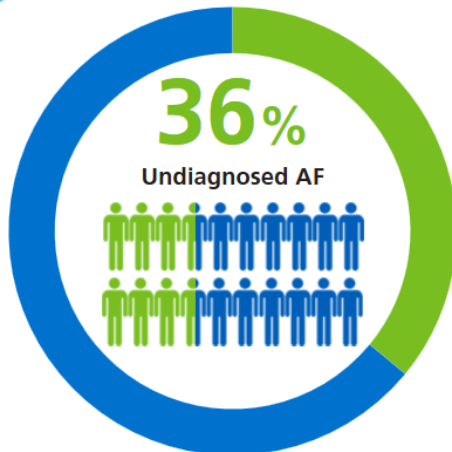
Disclaimer

Contact Support

Business Case

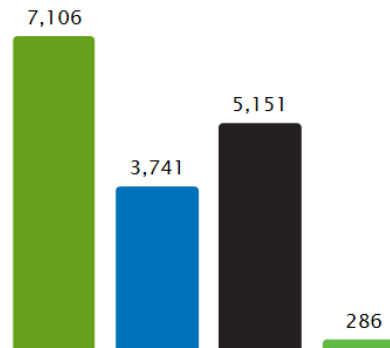
References

**A SIGNIFICANT NUMBER OF PEOPLE REMAIN UNDIAGNOSED WITH AF**



**RISK OF STROKE**  
NUMBER OF PATIENTS POTENTIALLY AT RISK

■ UNDIAGNOSED AF  
■ TREATED  
■ NOT TREATED  
■ HIGH RISK & TREATED



**14,211 PATIENTS**  
ARE PREDICTED TO HAVE AF, BUT REMAIN UNDIAGNOSED

RIGHTCARE CLUSTER AVERAGE

0

THIS WILL ONLY DISPLAY IF A CCG IS SELECTED

**PROTECT** 4,676 patients

With AF remain untreated and at risk of stroke

**DETECT** 14,211 patients

With AF remain unidentified and at risk of stroke

**SIZE OF THE PRIZE**  
BY OPTIMALLY TREATING AF  
OVER THE NEXT 3 YEARS

**681**  
STROKES SAVED

**£10,068,466**  
SAVED



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