Primary care modelling

City of Westminster

NHS
West London
Clinical Commissioning Group

NHS
Central London
Clinical Commissioning Group

Purpose and Scope of Work

Purpose

To develop an understanding of:

- The likely population size and profile for Westminster over the next 15 years.
- The likely burden of disease of this population
- How the new models of care being developed within the local health economy may impact on the use of primary care by this population

Scope and phasing as presented to Health and Well Being Board in November

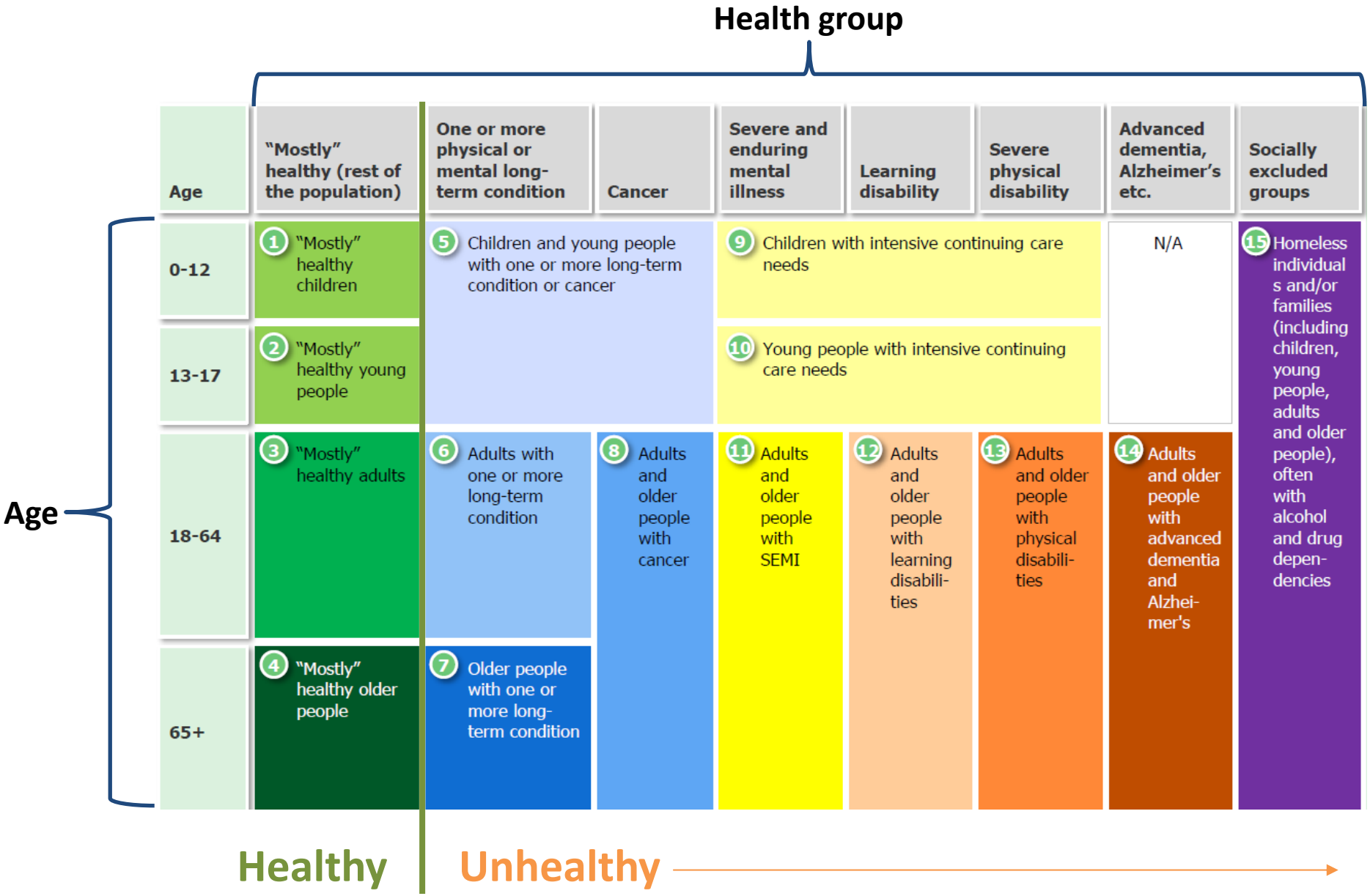
Phase 1	**Establishing a borough-wide base set of projections and subsequent disease burden that all agencies are content to use as a single agreed set of figures**
Phase 2	Overlay the impacts of regeneration, housing and infrastructure plans on the estimates modelled and build a tool that enables the manipulation of these impacts according to a number of variables. This will include the mapping of the existing provision of GP services both in terms of numbers of clinicians and also physical estate.
Phase 3	A joint analysis of how the needs of the Westminster population will impact on the demand for frontline services (including primary care) with a view to this informing the analysis that will be used by the local authority, NHS England, CLCCG and NWLCCG to plan for future primary care provision. This analysis completed by the project will include the identification of local authority and voluntary sector levers (such as estates and planning policy) that could be used to support the provision of primary care to match population needs.

Phase 1 – Borough Wide Projection Model with Disease Prevalence

Achievements

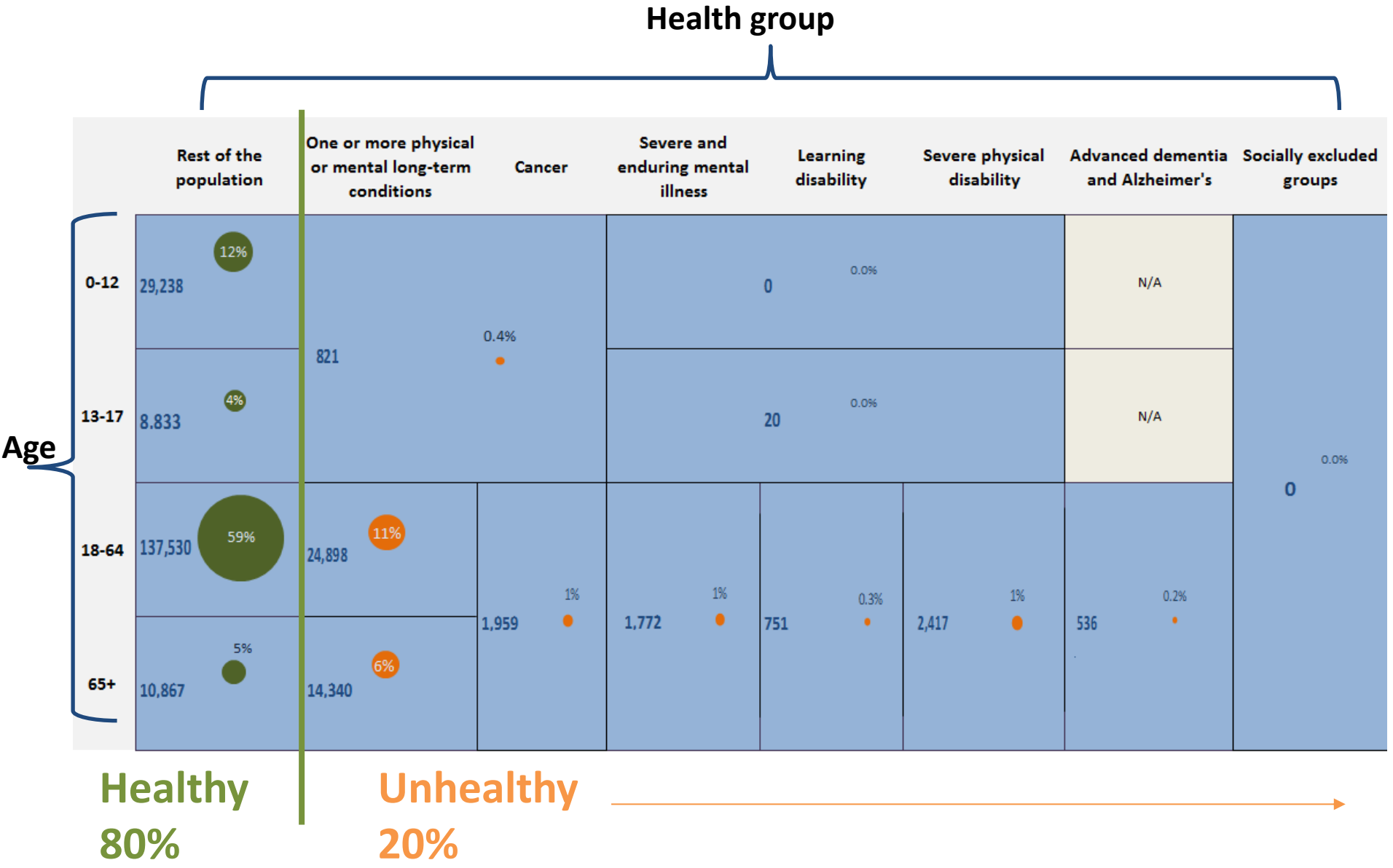
A model has been completed in-house – which enables numbers of likely residents with health and disease prevalence's to be estimated over the next 15 years – based on 1) changing disease prevalence 2) number of people in the population at each age groups

Segmentation of the population: 15 patient groups

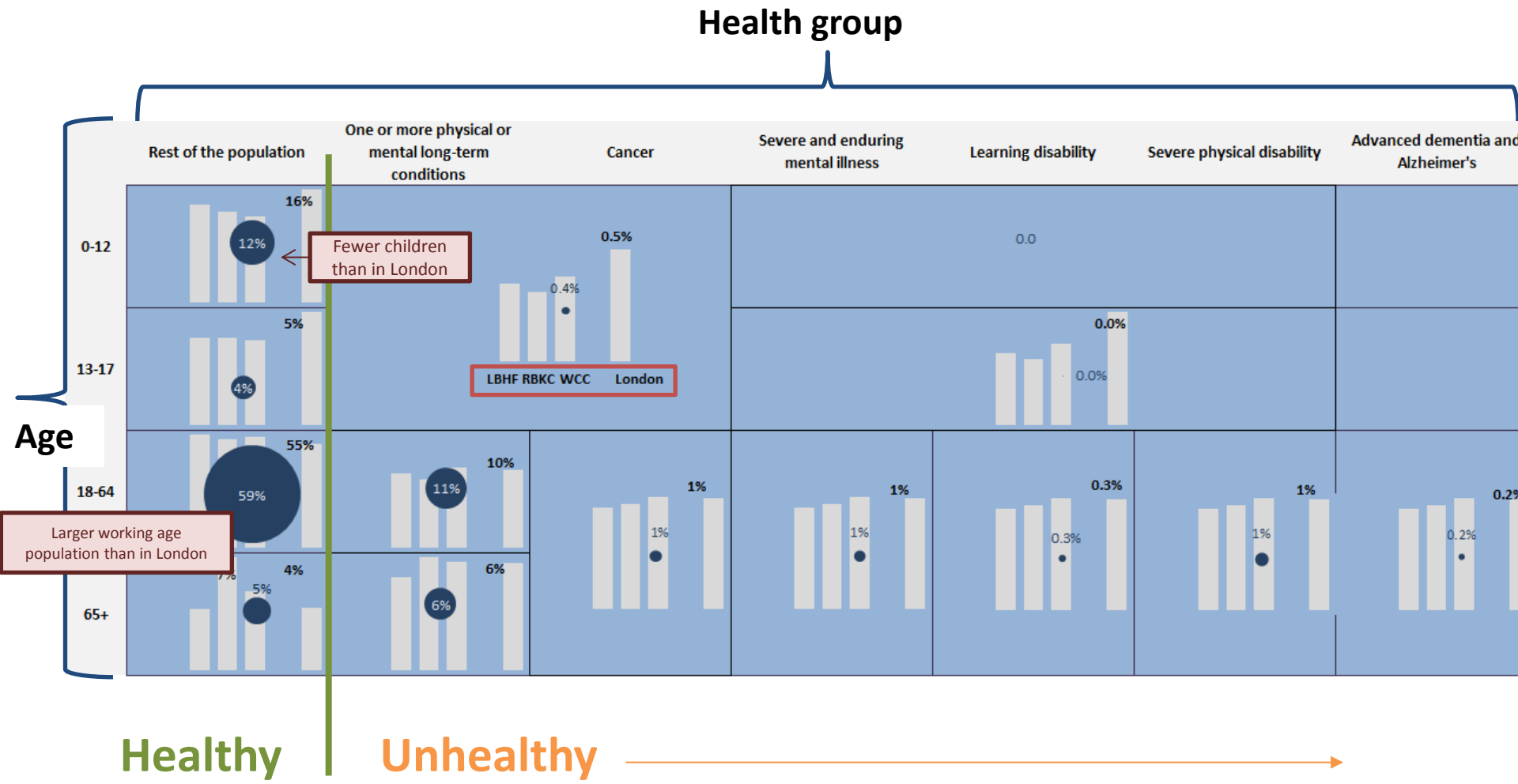


Source: Better care designed around people: New models of care for London's population - Technical Pack November 2014

Number and percentage of the population in each group, WCC 2015

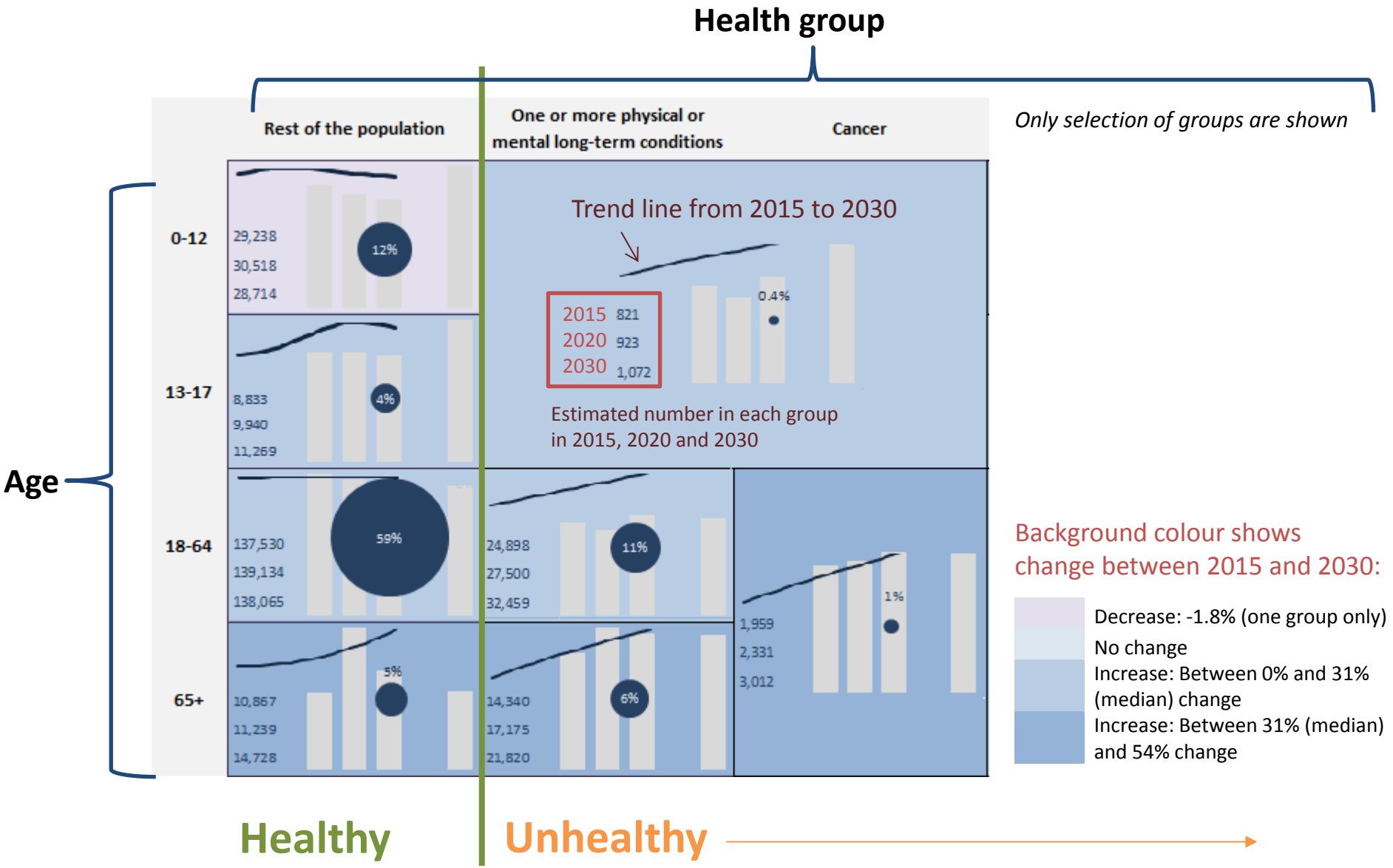


Percentage of the population in each group: comparison to other areas, WCC 2015



- The percentage of the population in Westminster City Council that is unhealthy (20%) is similar to the London average (based on 2011 Census findings).
- However, there are fewer children and a larger working age population.

Trend and change over time, WCC



Selections

The model allows you to make the following selections:

Selection

Population (also select source of projection when changing the selection here):	Source of population projection:	Area:	Number or percentage:	Year to show in addition to 2015 and 2030:	By ward:
LA resident population	*GLA 2014 SHLAA projections*	*WCC / CL CCG*	*Number*	*2020*	*Total for all wards in WCC / CL CCG*

Select the population:
- LA resident population
- CCG resident population
- CCG registered population (currently no trend data available)

Select the source for the population projection
- GLA 2014 SHLAA
- ONS 2012
- CCG resident ONS 2012

Select the area
- LBHF/H&F CCG
- RBKC / WL CCG
- WCC / CL CCG
- Shared services
- London

Instead of the number of people, you can choose to show the **percentage of the age group** (e.g. 18-64) that is in the health group (e.g. long term conditions)

You can choose to add the number of people in each group for **a particular year of interest** (e.g. 2025 instead of 2020 as used in the example)

You can show the data for a **single ward** in Westminster City Council

Example:

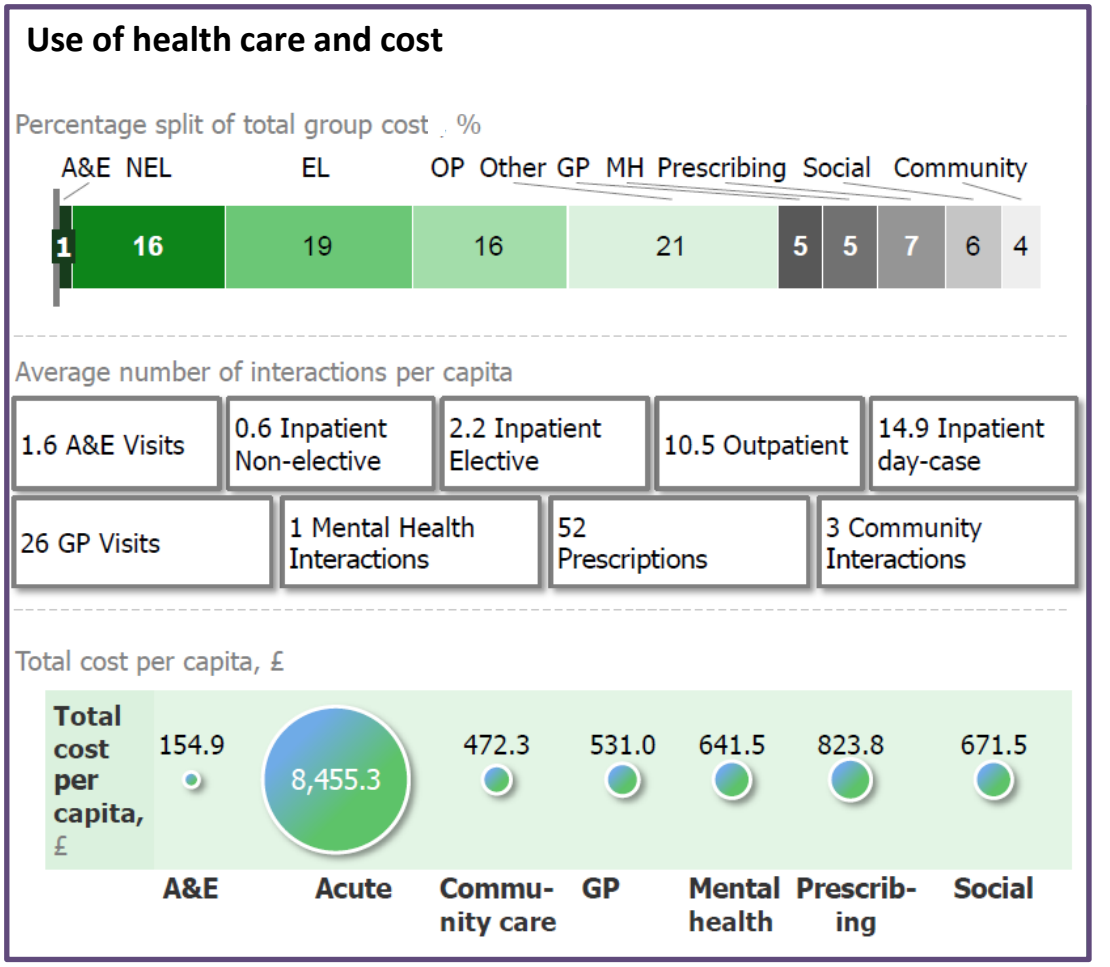
People aged 18 years and over that have any form and stage of cancer

Population size of people 18+ with cancer
2015: 2,000
2030: 3,012
Percentage increase: 54%

Of the total population in WCC, 0.8% are aged 18 years and over and have cancer. This is similar to the London average

Of the population aged 18 years and over 1.0% is estimated to have cancer (and are not categorised in the patient groups 'severe physical disability' or 'learning disability' which are prioritised).

Comparison to single disease sources:
McMillan cancer registry data (aged 18+):
2015: 6,650 (3%)
2030: 11,800 (5%)
(similar to the London average)
QOF (all ages, CL registered population):
2015: 3,115 (1.5%)
2030: N/A
APHO modelled 5 year crude prevalence (all ages):
2015: 1,829 (0.9%)



Phase 2 - Variants on Phase 1 – Ward Variants

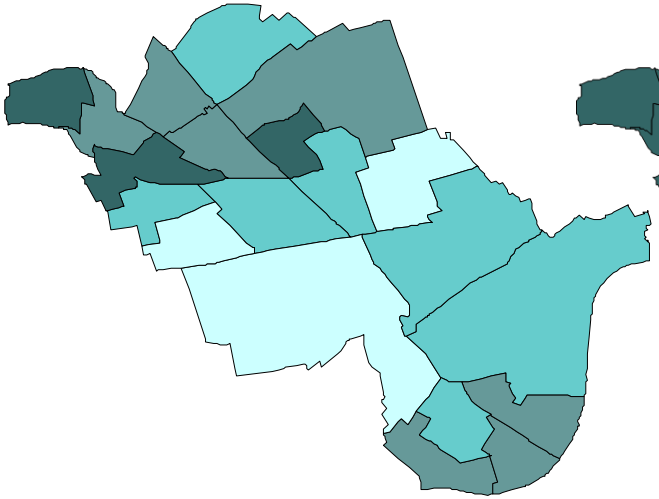
Achievements

The original model has been enhanced to drill the same data down to ward level providing a much more localised view of prevalence and easy comparisons between needs in different parts of the borough

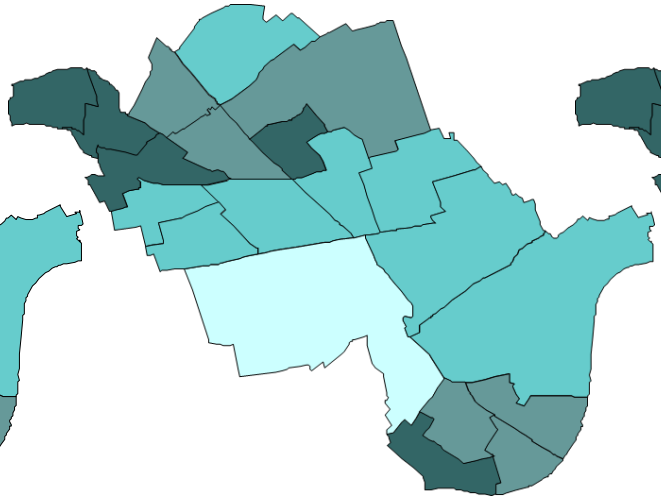
Ward level model

Percentage of the population aged 18 years and over and with cancer

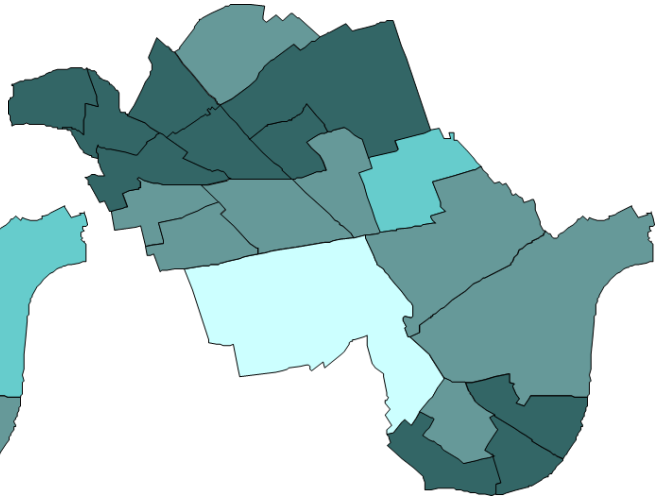
2015



2020



2030



Legend

Quartile	Range
1	0.4% - 0.7%
2	0.7% - 1.0%
3	1.0% - 1.3%
4	1.3% - 1.6%

Westminster average (2015)	0.8%	2
London average (2015)	0.8%	2

Phase 2 - Variants on Phase 1 – Policy Impacts

Achievements

A model has been produced that enables a group of stakeholders to consider what the impacts of a policy / external coming up in the next few years may be on future demographics. This model applies impacts on single age groups to the population base over the next few years, and projects 15 years forwards.

Assumptions

That it is possible to predict impacts over the next few years with sufficient confidence for outputs to have credibility.

- That the current demographic modelling can be made fit for purpose with tools and skills in WCC / CLG / CCGs

Future Developments

- To agree appropriate standards and forums for developing and agreeing input data
- To agree appropriate mechanisms for appraising emerging / on-going policies / issues
- To enable the model to take multiple policy scenarios
- The outputs to be integrated with the borough and ward variant models

Summary of Models so far

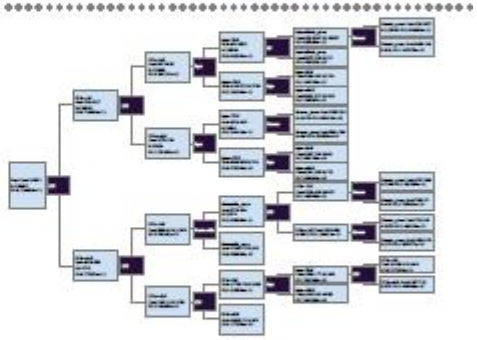
Model	Model Description	Geographic Breakdown			Population Model			Policy Impacts	Ethnicity	Gender	Deprivation
		Borough	Ward	Other	GLA SHLAA 2014	ONS 2012	GP List base				
Model 1	Borough based starting point										
Model 2	As model 1 but at Ward level										
Model 3	As model 1 but with Policy										

Methodology of patient types model for reference

Patient groups developed by London Health Commissioning

1. Review of international grouping models

2. Analysis of integrated health and social care data set



3. Judgment of professionals and patients

Definitions of 15 patient groups

Estimate size of groups in London
based on CCG data on prevalence and population size

Estimate increase by group
Forecasting assumptions including activity forecasting data from NHS England was used to estimate the increase in population by group

From estimates for London to estimates for boroughs

Age	Rest of the population	One or more physical or mental long-term conditions	Cancer	Severe and enduring mental illness	Learning disability	Severe physical disability	Advanced dementia and Alzheimer's	Socially excluded groups	Total
0-12	1,390,000	37,700		0				Less robust data ~6,500 rough sleepers Acute costs roughly double rest of population Est. ~£4k cost/year ~ £26m spend	1,410,000
13-17	442,000			1,000					458,000
18-64	4,660,000	842,000	64,200	61,900	25,500	83,200	17,900		5,610,000
65+	328,000	484,000							955,000
Total[1]	6,820,000	1,360,000	64,800	62,300	26,100	83,200	17,900		8,440,000

London estimates for 2012/13

Age	Rest of the population	One or more physical or mental long-term conditions	Cancer	Severe and enduring mental illness	Learning disability	Severe physical disability	Advanced dementia and Alzheimer's	Socially excluded groups	Total
0-12	1,512,276	45,207		49					1,538,847
13-17	479,150			1,053					498,888
18-64	4,949,538	1,003,650	83,920	69,588	30,694	96,892	22,416		6,081,020
65+	305,680	606,933							1,088,292
Total[1]	7,246,643	1,654,967	84,743	70,044	31,341	96,892	22,416		9,207,046

London estimates for 2020/21

Assume linear increase →

2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030

Divide the total for London in each group across the London boroughs

- using the Census 2011 data on Limiting Long term illness
- by age and population projection

Age	One or more physical or mental long-term conditions
65+	530,100

→ 1.8% in Hammersmith and Fulham
→ 1.9% in Kensington and Chelsea
→ 2.7% in Westminster
→ 5.2% in Bromley
→ 88.4% in other 29 local authorities

Estimated 14,300 with one or more long term conditions aged 65 years and over in Westminster in 2015

From estimates for boroughs to estimates for wards

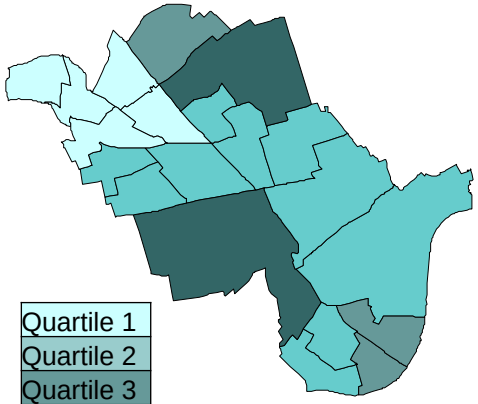
Divide the total for *Westminster* in each group across the electoral wards
- using the Census 2011 data on Limiting Long term illness
- by age and population projection

Age	One or more physical or mental long-term conditions
65+	14,300

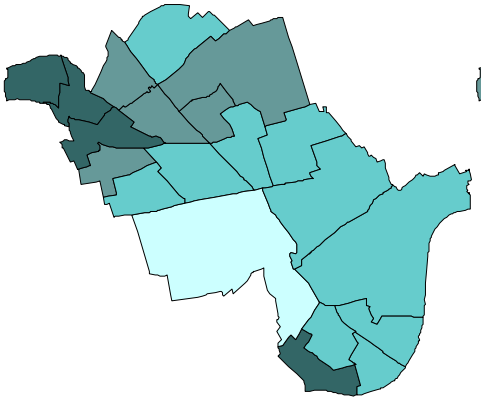
→ 2.3% in Knightsbridge and Belgravia
→ 3.6% in Marylebone High Street
→ 7.6% in Church Street
→ 8.1% in Regent's Park
→ 78.3% in other 16 electoral wards

Estimated 1,100 with one or more long term conditions aged 65 years and over in Church Street in 2015

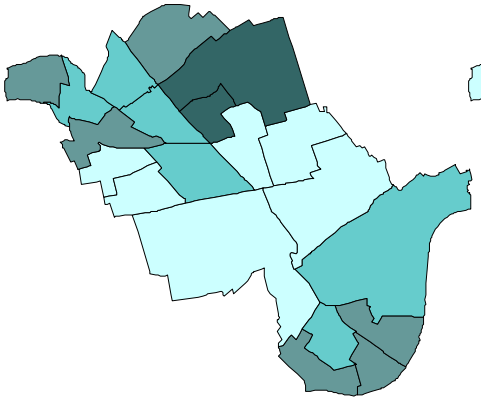
% of population aged 65+



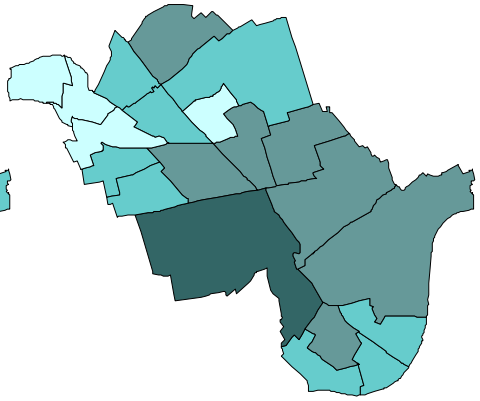
% day to day activities are limited a little or a lot (65+)



% of population aged 65+ and more than one long term condition



% of population aged 65+ and mostly healthy



Quartile 1
Quartile 2
Quartile 3
Quartile 4

Adding the effect of policy shocks to the model

Assuming population moving in or out is as healthy/unhealthy as WCC average:

Westminster estimates in each group → Calculate percentage by age in each group → Apply to new population estimates that include effect of policy shocks

Assuming population moving in or out is different from WCC average:

Change assumptions:
e.g. of the 2000 children aged 0-12 that move away,
50% is mostly healthy (compared to 93% average)
50% is unhealthy (compared to 7% average)

↓

Westminster estimates in each group → Calculate percentage by age in each group → Apply to estimates for the population that is affected by policy shocks → Add or subtract this from estimates for SHLAA population projections