



Potential Years of Life Lost (PYLL) from causes considered amenable to health care; a tool to facilitate comparison of initial CCG plans against a range of relevant trends

Purpose

PHE has developed an Excel-based tool to help CCGs review their ambitions. This document is intended to support the use of that tool. It is recommended that users of the tool print this document and read it while using the tool. This guide contains instructions on using the tool with screen-shots, guidance on reviewing the level of ambition and definitions of the various CCG and Local Authority indicators within the tool (Technical Appendix).

Context

NHS England has asked all CCGs, together with their NHS England Area teams to jointly produce five-year strategic plans (2014/15 to 2018/19) setting out their health outcome ambitions against seven overarching outcomes selected from the NHS Outcomes Framework. One of the key outcome measures is Potential Years of Life Lost (PYLL) for conditions amenable to healthcare (NHS OF Indicator 1a).

Public Health, either within PHE or local authorities, are already supporting some CCGs to understand their PYLL indicator, and to set stretching but deliverable ambition for improvement over the next five years.

CCGs have submitted initial plans to NHS England and are required to submit final plans no later than 27th June 2014. The plans are PYLL rates for the 2013 baseline year and each financial year between 2014/15 and 2018/19. CCGs were instructed to take the 2012 PYLL rate as the 2013 baseline. An internal analysis of these plans revealed that for many CCGs, initial plans set a higher (less ambitious) target trajectory than most analyses of trajectories would suggest, and the message for these CCGs is that final plans should be a lower trajectory i.e. more ambitious.

Using the tool

The tool contains graphs and data tables in two sheets. The CCG sheet is of primary importance. The Local Authority sheet provides equivalent data for constituent/'parent' local authorities which is useful context.

CCG graph and data table

The following steps correspond to the numbered instructions in the tool (left-hand side), and also illustrated in the tool screen-shot below.

Step 1 – Select CCG

The tool contains data for all 211 CCGs in England. Users must select the CCG of interest from the drop-down box (top-left shaded green). Graphs in both the CCG sheet and the Local Authority sheet are updated by this selection.



Step 2 – Enter CCG initial plan data

The tool is not pre-populated with CCG plan data and users are therefore required to enter their initial CCG plan data and compare this against a range of forecast PYLL rates for their CCG, CCG peer-groups and England. This will reveal how realistic/stretching their initial plans are. Users may find it useful to re-enter new values to visualise alternative levels of ambition. The data-entry cells are shaded pink and invite the user to enter the relevant PYLL rate when they are clicked. When the user opens the tool, these cells are empty. In the example screen-shot, the first three values (up to and including 2015/16) have been entered by the user and the remaining three values (2016/17 to 2018/19) are yet to be entered. You may wish to save a copy of the tool once CCG plan data have been entered.

Step 3 – Select comparator trajectories

By default the graph displays the CCG plan (as input at Step 2), CCG actual values for 2010, 2011 and 2012 and 'local' trajectories for the CCG and CCG peer-group.

This default position allows comparison between the CCG plan, the actual PYLL values, the best estimate of what would happen if the historic CCG rate of improvement continues and a comparison with the best estimate for the rate of improvement for a group of 10 demographically similar CCGs.

If the CCG plan is higher on the graph than the 'local' trajectories it indicates that the CCG is planning a lower level of improvement in reducing potential years of life lost from causes considered amenable to healthcare than that which is forecast from the historic rate of improvement. In order to justify this lower level of ambition, CCGs would need to provide evidence that they believe that historic trends will not continue.

Alternative comparators can be selected. To prevent the graph being overcrowded and obscuring data-points three other data series ('national' trajectories for the CCG and for the CCG peer-group and England) have been switched off. Click on data-series names next to the tick-boxes to add or remove data series.

Step 4 – Consider the Local Authority position for context

A table is provided that summarises the relationship between the CCG and Local Authority geographical boundaries and estimates of Local Authority populations within the CCG. This information relates to the Local Authority graphs and data tables in the second sheets that are accessed by clicking the button.

When setting the final plan PYLL rates the following should be considered;

- 1) Plans should be stretching, i.e. the plan PYLL rates should be at least as low as a forward extrapolation of historic local trends unless there is a justification (see 'local' trajectories later).
- 2) Compare the initial CCG plan against all of the other relevant PYLL rates. If for example, the CCG plan is higher than the peer-group PYLL rate, can this be justified



- 3) There is greater potential for those CCG's with more deprived populations to achieve greater reductions in PYLL rates because they have greater proportions of people dying at earlier ages and from causes that are considered amenable to health care.
- 4) Nationally, different mortality causes within those considered amenable to health care are reducing at different rates, e.g. CHD and Stroke are falling at over 5% per annum whereas 'amenable' cancers are falling at 1.3% per annum. To some extent 'local' trajectories' take account of potentially divergent trend by disease group. However, CCGs with a greater proportion of deaths in the currently faster declining mortality groups than nationally, might expect their overall PYLL rate to decline at a faster rate than a simple extrapolation of their historic data suggests.

(1) Select CCG

(2) Enter CCG plan

(3) Select graph data

(4) Go to LA graphs

Potential Years of Life Lost from causes considered amenable to healthcare
A tool to facilitate comparison of initial CCG plans against a range of relevant trends

[Click to print page](#)

1) Please select the CCG of interest from the drop-down box below
03Q NHS Vale of York CCG

2) Please enter the initial CCG plan PYLL rate for the years 2013 to 2018/19 in the table below

Year	CCG initial plan
2013 baseline	2300
2017/18	2200
2018/19	2100

Please enter 2015/16 PYLL rate in the tick boxes to view any combination of data series.

3) If the graph is too crowded, tick the boxes to add/remove CCG data series:

- CCG initial plan
- CCG actual
- CCG following 'local' trajectory
- CCG following 'national' trajectory
- 10 most similar CCGs following 'local' trajectory
- 10 most similar CCGs following 'national' trajectory
- England

4) NHS Vale of York CCG is comprised of 5 LA's (either whole or part)

Lower-Tier Local Authority (LTLA)	LTLA population in CCG (2012)	LTLA % of CCG population (2012)	% of LTLA population in CCG (2012)
York UA	200,018	57.8%	100.0%
Selby	84,144	24.3%	100.0%
Ryedale	25,195	7.3%	48.4%
East Riding of Yorkshire	21,383	6.2%	6.4%
Hambleton	15,314	4.4%	17.1%

NHS Vale of York CCG 346,054 100% n/a

Click the button below to view equivalent graphs and data tables for local authority areas relevant to this CCG

[Click to view Local Authority charts](#)

NHS Vale of York CCG (registered population)
Potential Years of Life Lost, Directly Standardised Rate per 100,000

3-year period	Year	CCG initial plan	CCG actual	CCG actual following 'local' trajectory	CCG actual following 'national' trajectory	10 most similar CCGs following 'local' trajectory	10 most similar CCGs following 'national' trajectory	England registered population
2001-03	2002							2916.2
	2003							2803.0
	2004							2706.9
2004-06	2005							2603.7
	2006							2517.0
	2007							2428.7
2007-09	2008							2344.5
	2009							2264.3
	2010		2051.5					2187.7
2010-12	2011		2066.6	2022.9	2022.9	1903.6	1903.6	2114.7
	2012		1950.6	1960.2	1965.5	1841.7	1849.6	2045.0
	2013	2300.0		1839.5	1908.1	1782.7	1795.5	1978.5
	2014	2200.0		1840.7	1850.7	1726.2	1741.5	1914.9
	2015	2100.0		1783.6	1733.2	1672.3	1687.5	1854.2
	2016			1728.4	1735.6	1620.6	1633.5	1796.2
	2017			1674.8	1678.4	1571.5	1579.4	1740.6
	2018			1622.9	1621.0	1524.4	1525.4	1687.7

Local Authority graphs and data tables

These graphs and data tables contain PHE calculated Local Authority PYLL rates that are not directly comparable with the HSCIC calculated CCG PYLL rates. This is primarily because the Local Authority rates are for resident populations whereas the CCG rates are for registered populations (list-inflation of GP registers decreases PYLL rates for registered populations). There are also other methodological differences between the two including choice of standardising population, year of ONS Life Tables and the Census base of population estimates. The HSCIC may revise their methods in future data releases.



What value does the Local Authority data add?

- These graphs use the 2001 ONS Cluster as the peer-group to benchmark Local Authorities against. It is useful for all CCGs to have an alternative peer-group comparator, but particularly so for the 101 CCGs with 1:1 relationship with a Local Authority as their historic LA data is also their historic CCG data.
- The constituent local authorities forming a CCG may have very different level of PYLL rates and combined with information on the relative sizes of their contribution to the overall CCG population (see % of LTLA population in CCG, Step 4), this may give extra insight into the geographical focus of planned interventions.
- The constituent local authorities forming a CCG may have divergent trends, and combined with information on the relative sizes of their contribution to the overall CCG population (see % of LTLA population in CCG, Step 4), this may also give extra insight into the geographical focus of planned interventions.

The CCG selection in the CCG sheet determines which local authorities appear in this sheet. In this example NHS Vale of York CCG has been selected. Graphs and data tables are populated for the five local authorities that overlap the CCG boundary. The screen-shot shows the first of these which is York Unitary Authority.

As in Step 3 of the CCG graph, data series displayed in each graph can be independently switched on or off using the tick boxes.



You have selected NHS Vale of York CCG
NHS Vale of York CCG is comprised of 5 LA's (either whole or part)
York UA Local Authority

Click to print 1-9 pages

Relationship with the CCG
100% (or 200,018 persons) of the York UA LA population is within NHS Vale of York CCG. This represents 57.8% of the total CCG population.

Click to return to the CCG chart

Tick boxes to add/remove LA data series

Local Authority actual
 Local Authority 'local' trajectory
 Local Authority 'national' trajectory
 ONS Cluster
 ONS Cluster following 'local' trajectory
 ONS Cluster following 'national' trajectory
 England

You have selected NHS Vale of York CCG
NHS Vale of York CCG is comprised of 5 LA's (either whole or part)
Selby Local Authority

Click to return to the CCG chart

Tick boxes to add/remove LA data series

Local Authority actual
 Local Authority 'local' trajectory
 Local Authority 'national' trajectory
 ONS Cluster
 ONS Cluster following 'local' trajectory
 ONS Cluster following 'national' trajectory
 England

York UA LAD (resident population)
Potential Years of Life Lost, Directly Standardised Rate per 100,000

Selby LAD (resident population)
Potential Years of Life Lost, Directly Standardised Rate per 100,000

York UA Local Authority District (resident population)							
Potential Years of Life Lost, Directly Standardised Rate per 100,000							
3-year period	Year	York UA	York UA 'local' trajectory	York UA 'national' trajectory	ONS cluster 'Prospering Smaller Towns'	ONS cluster 'Prospering Smaller Towns' 'local' trajectory	ONS cluster 'Prospering Smaller Towns' 'national' trajectory
2001-03	2002	3223.7	3033.8		2875.0	2897.2	3319.2
	2003		2929.0			2772.2	3197.2
	2004		2827.8			2680.4	3080.9
2004-06	2005	2522.1	2730.1		2582.4	2591.5	2970.3
	2006		2635.8			2505.7	2864.8
	2007		2544.8			2422.6	2764.3
2007-09	2008	2399.6	2456.9		2340.0	2342.3	2688.5
	2009		2372.0			2264.7	2577.2
	2010		2290.1			2189.7	2490.0
2010-12	2011	2306.1	2210.9		2121.0	2117.1	2406.9
	2012		2194.6	2231.8		2046.9	2327.6
	2013		2060.9	2160.7		1973.1	1986.9
	2014		1989.6	2092.9		1913.5	1924.5
	2015		1920.9	2028.0		1850.1	1864.9
	2016		1854.6	1966.0		1788.8	1807.9
	2017		1790.5	1906.7		1723.5	1753.4
	2018		1728.6	1850.0		1672.2	1701.2

Selby Local Authority District (resident population)					
Potential Years of Life Lost, Directly Standardised Rate per 100,000					
3-year period	Year	Selby	Selby 'local' trajectory	Selby 'national' trajectory	ONS cluster 'Prospering Smaller Towns'
2001-03	2002	3326.9	3268.5		2875.0
	2003		3090.5		
	2004		2922.2		
2004-06	2005	2683.4	2763.0		2582.4
	2006		2612.5		
	2007		2470.2		
2007-09	2008	2348.3	2335.6		2340.0
	2009		2208.4		
	2010		2088.1		
2010-12	2011	1986.5	1974.4		2121.0
	2012		1866.8	1922.4	
	2013		1753.1	1861.2	
	2014		1669.0	1802.6	
	2015		1578.1	1746.7	
	2016		1492.1	1693.3	
	2017		1410.3	1642.1	
	2018		1334.0	1593.2	



TECHNICAL APPENDIX

1. Clinical Commissioning Group PYLL indicator definitions

1.1 CCG actual

NHS Outcomes Framework, Domain 1: Preventing people from dying prematurely, Overarching Indicators: Indicator 1a Potential Years of Life Lost (PYLL) from causes considered amenable to health care, directly standardised rate per 100,000 persons for the single years 2010, 2011 and 2012. This is the estimated rate for the CCG registered population. The data and methods document can be downloaded from the HSCIC Indicator portal at

https://indicators.ic.nhs.uk/download/Clinical%20Commissioning%20Group%20Indicators/Data/CCG_1.1_I00767_D_V5.xls

https://indicators.ic.nhs.uk/download/Clinical%20Commissioning%20Group%20Indicators/Specification/CCG_1.1_I00767_S_V4.pdf

The calculation uses 2001 Census based population estimates, the in-year England population to standardise and 2012-based ONS Life Tables for expectation of life at different ages.

1.2 CCG following 'local' trajectory

In simple terms, this is our best estimate of the future PYLL trend in the CCG if the historic rate of improvement in the CCG continues.

The baseline 2010-12 value is the average of the three '1.1 CCG actual' (registered population) values for the single years 2010, 2011 and 2012. Subsequent values are a trajectory equal to the relative reductions from a 'best fit' exponential line fitted through the estimated PYLL for the CCG resident population on the four observations 2001-03, 2004-06, 2007-09 and 2010-12.

These four CCG resident population PYLL values are population weighted averages of Lower-Tier Local Authority (LTLA) resident population PYLL values. In terms of statistical bias, this method of estimating CCG resident population PYLL values is perfect for some CCG (94 CCGs with 1:1 relationship with the LTLA), but less than ideal for other CCGs (28 CCGs are wholly contained within an LTLA, and 89 CCGs are composed of several LTLA's either whole or part). This was necessary because pre-2010 CCG values were un-obtainable, and historical values are essential for forecasting.

1.3 CCG following 'national' trajectory

Put simply, this is the PYLL rate trend in the CCG if it mirrors the anticipated England rate of reduction. The method is slightly more sophisticated than this, in that the divergent trajectories of five amenable cause-specific mortality groups are factored into the forecasts.

Due to the lack of availability of PYLL data for CCG registered populations, this method also applies trends in CCG resident population PYLL to determine trends in CCG registered populations.

As in 1.2 above, the baseline 2010-12 value is the average of the three '1.1 CCG actual' values (registered population) for the single years 2010, 2011 and 2012. Subsequent annual values are



calculated by applying the anticipated annual national rates of reduction to this baseline 2010-12 value, from 2012 through to 2018. This is an exponentially reducing trend.

For each CCG (resident population) and for each forecast year (2012 to 2018), five cause-specific PYLL values were calculated by applying the national annual % reduction figures (table below). These were totalled to achieve a single PYLL value for the CCG resident population in each forecast year. By dividing each forecast PYLL rate by the 2010-12 baseline PYLL rate a percentage value for each forecast year is generated (e.g. NHS Darlington CCG (resident population) 2012 to 2018: 96.5%, 93.1%, 89.9%, 86.8%, 83.9%, 81.1% and 78.5%). These percentage values (resident based) were then applied 2010-12 baseline PYLL rates (registered population) to generate forecasts of PYLL rates in CCG registered populations if national mortality trends were to prevail.

The five national cause-specific rates of reduction were calculated by fitting exponential lines through England PYLL data. They are summarised in the table below.

Amenable cause	Annual % reduction (England)
Coronary heart disease	5.52%
Stroke	5.39%
Pneumonia	2.43%
Amenable cancers	1.30%
Other amenable	1.42%

1.4 Ten most similar CCGs following 'local' trajectory

This is the combined future PYLL rate trend in the ten CCGs that are most demographically similar, if the collective historic rate of improvement in these CCGs continues.

The 'closest' CCG method was developed by NHS England. The methodology and lookup file are available at <http://www.england.nhs.uk/resources/resources-for-ccgs/comm-for-value/>

The PYLL rate calculation is the same as in '1.2 CCG following 'local' trajectory', except that all PYLL rates are population weighted averages of the ten CCG values.

1.5 Ten most similar CCGs following 'national' trajectory

This is the combined future PYLL rate trend in the ten CCGs that are most demographically similar, if the each CCG's PYLL rate declines at the same rate as anticipated nationally, accounting for divergent trends in five amenable cause-specific mortality groups.

The 'closest' CCG method was developed by NHS England. The methodology and lookup file are available at <http://www.england.nhs.uk/resources/resources-for-ccgs/comm-for-value/>

The PYLL rate calculation is the same as in '1.3 CCG following 'national' trajectory', except that all PYLL rates are population weighted averages of the ten CCG values.

1.6 England

This is an estimate of the PYLL rate in the England registered population from 2002 to 2018.



Again, due to the lack of availability of PYLL data for CCG registered populations, this method also uses trends in the national resident population PYLL to determine trends in the national registered population PYLL.

Exponential trend models were fitted to the England resident population PYLL rates for 2001-03, 2004-06, 2007-09 and 2010-12 (four values) in each of the five amenable cause-specific mortality groups. This generated fitted annual PYLL rates for years 2012 through to 2018 in each of the five amenable cause-specific mortality groups. These were totalled to give overall England (resident population) 'smoothed' PYLL rates for 2012 to 2018. An index was calculated for each year, equal to the ratio of the annual value divided by the average of the 2010, 2011 and 2012 values.

The equivalent 2012 to 2018 PYLL rates for the England registered population were generated by multiplying the 2010-12 PYLL for England (registered population) by this index. These are the 'England actual' values presented in the tool.

2. Lower-Tier Local Authority (LTLA) PYLL indicator definitions

2.1 Local Authority actual

Potential Years of Life Lost (PYLL) from causes considered amenable to health care, directly standardised rate per 100,000 persons for the periods 2001-03, 2004-06, 2007-09 and 2010-12 for the Lower-Tier Local Authority (LTLA) resident populations. This was calculated by PHE using 2011 Census based population estimates, the 2013 European Standard Population to standardise and 2013-based ONS Life Tables for expectation of life at different ages.

2.2 Local Authority 'local' trajectory

This is an estimate of what the PYLL rate will be in the LTLA resident population if the historic rate of improvement in that area continues. It is calculated by fitting an exponential trend line through the four data points in '2.1 Local Authority actual' above, and extrapolating this line forward to the year 2018.

2.3 Local Authority 'national' trajectory

This is an estimate of what the PYLL rate will be in the LTLA resident population if it reduces at the anticipated national rate of improvement. It is calculated for the years 2012 to 2018 by repeatedly applying the national annual percentage reduction figures in '1.3 CCG following 'national' trajectory' above to each LTLA's 2010-12 baseline PYLL rate in each of the five mortality groups, and totalling to get a single PYLL rate for each forecast year. In other words, the 2012 rate is a result of applying the reduction figures to the 2010-12 rate, the 2013 rate is a result of applying the reduction figures to the 2012 rate, the 2014 rate is a result of applying the reduction figures to the 2013 rate, and so on up to the year 2018.

2.4 ONS Cluster

This is the PYLL rate for all of the LTLAs that are in the same ONS Cluster (ONS 2001 Area Classification) as the selected Local Authority for the periods 2001-03, 2004-06, 2007-09 and 2010-12. It is calculated by taking the population weighted average of the PYLL rates of the LTLA's in each



ONS Cluster. The population weights are the ONS mid-year population estimates (2011 Census-based) for each three-year period.

A definition of the ONS 2001 Area Classification can be found at the following link <http://www.ons.gov.uk/ons/guide-method/geography/products/area-classifications/national-statistics-area-classifications/national-statistics-2001-area-classifications/index.html>

2.5 ONS Cluster 'local' trajectory

This is an estimate of what the PYLL rate will be in the ONS Cluster if the combined historic rates of improvement in the cluster's constituent local authorities continue. It is calculated by fitting an exponential trend line through the four data points in '2.4 ONS Cluster' above, and extrapolating this line forward to the year 2018.

2.6 ONS Cluster 'national' trajectory

This is the combined future PYLL rate for all of the LTLAs that are in the same ONS Cluster as the selected Local Authority, if the PYLL rate in each constituent LTLA declines at the same rate as anticipated nationally, accounting for divergent trends in five amenable cause-specific mortality groups. It is calculated for the years 2012 to 2018

These PYLL rates are a population weighted average of the 2012 to 2018 PYLL rates in '2.3 Local Authority 'national' trajectory'. The ONS 2012 mid-year population estimate for LTLAs was used as the population weight for all years from 2012 to 2018. This is a potential source of minimal bias as this method assumes that the relative sizes of LTLAs remains constant throughout this period, which is likely to be less valid towards 2018.

2.7 England

This is an estimate of the PYLL rate in the England resident population from 2002 to 2018.

PYLL rates for 2001-03, 2004-06, 2007-09 and 2010-12 were calculated by PHE using 2011 Census based population estimates, the 2013 European Standard Population to standardise and 2013-based ONS Life Tables for expectation of life at different ages. Exponential trend models were fitted to these four PYLL rates in each of the five amenable cause-specific mortality groups.

This generated fitted annual PYLL rates for years 2012 through to 2018 in each of the five amenable cause-specific mortality groups. These were totalled to give overall England (resident population) 'smoothed' PYLL rates for 2012 to 2018.

For technical queries please contact David.Merrick@PHE.gov.uk

For other queries please contact Sue.Baughan@PHE.gov.uk