

# Health Economic implications of disease related malnutrition - can we afford not to get it right?

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**Making Undernutrition Every One's Business**

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# What do we know about the costs of Disease Related Malnutrition

- **DRM is common**

1 in 20 subjects of the general population,

about 1 in 3 in care homes and hospitals

about 1 in 10 among those visiting their GP

- **DRM is costly**

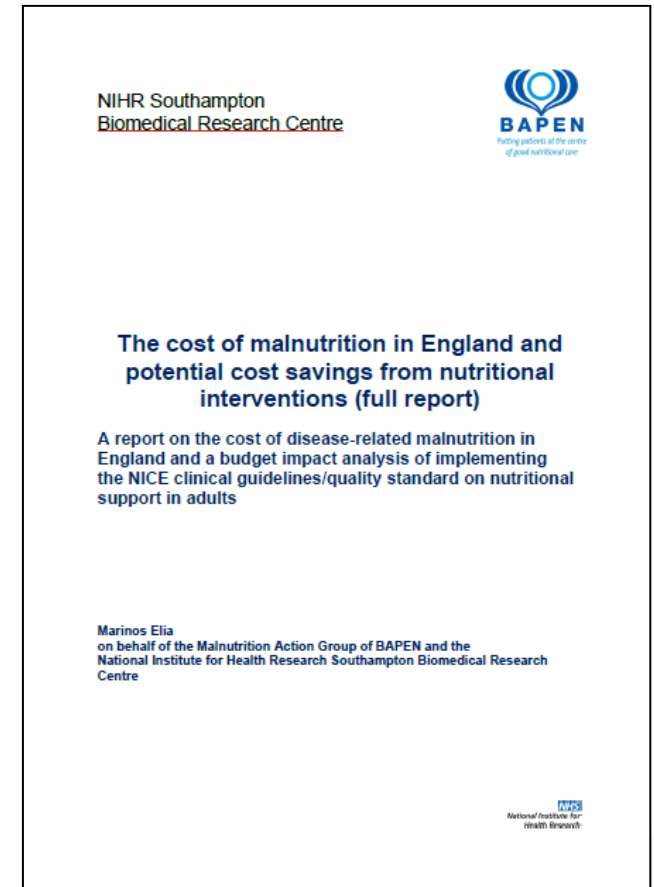
Increased hospital admissions / readmissions and length of stay

Increased risk of dependency / becoming a permanent care home resident

Increased GP visits and prescriptions

# £19.6bn - The most recent estimate of the cost of DRM

- 2015 BAPEN / NIHR report
- For England
- In 2011-12
- **£5239 more** per person.
- Built from age based analysis



# The age based analysis allows extrapolation

**Table A.9** Distribution of expenditure on disease-related malnutrition according to type of care and age group

Type of care purchased	Older adults (≥65 years)		Younger adults (18–64 years)		Children <18 years)		Total	
	£bn	%	£bn	%	£bn	%	£bn	%
Proportions between age groups								
<i>Type of care</i>								
Health care	7.709	50.5	6.736	44.1	0.826	5.4	15.271	100.0
Social care	2.562	58.8	1.517	34.8	0.279	6.4	4.358	100.0
Total	10.271	52.3	8.253	42.0	1.105	5.6	19.629	100.0
2011								
Population (Eng)	<b>8,729,600</b>		<b>33,036,900</b>		<b>11,340,600</b>		<b>53,107,100</b>	
<b>2011</b>								
Cost per person	<b>£1,176.57</b>		<b>£249.81</b>		<b>£97.4</b>		<b>£369.61</b>	

“Expressed per capita population the estimated annual cost of malnutrition is £370”  
BAPEN/NIHR 2015 report

# What could that look like today?

2 key factors

1. Population changes
2. Healthcare inflation

# What could that look like today?

2 key factors

## 1. Population changes

### UK POPULATION

	2011	2018	
Under 18	13,446,200	14,021,853	+4.3%
18-64	39,380,800	40,217,053	+2.1%
Over 65	10,458,200	12,247,920	+17.1%

**£23.5bn\***

\*UK wide cost estimate for 2011 applying age based costs across UK pop.

# The impact of healthcare inflation

## Inflation

This table sets out our latest assumptions for annual increases in unit costs:

Element	2016/17	2017/18	2018/19	2019/20	2020/21
Pay and pensions (including drift and mix effects)	3.3%	2.0%	1.6%	1.6%	2.9%
Drugs	4.5%	4.6%	3.6%	4.1%	4.1%
Capital costs	3.1%	3.2%	3.2%	3.1%	3.1%
Other operating costs	1.7%	1.8%	2.1%	1.9%	2.0%
Overall	3.1%	2.3%	2.0%	2.0%	2.9%

*Low = 2.0%*

*Range*

*High = 3.1%*

**Average = 2.46%**

# What could that look like today?

2 key factors

1. Population changes
2. Healthcare inflation **@2.46% pa**

	Over 65	18-64	Under 18
2011 Cost per person	<b>£1,176.57</b>	<b>£249.81</b>	<b>£97.4</b>
2018 Cost per person	<b>£1,394.76</b>	<b>£296.14</b>	<b>£115.51</b>



# What could that look like today?

## UK POPULATION COST OF DRM in 2018

	2011	2018	
Under 18	13,446,200	14,021,853	+4.3%
18-64	39,380,800	40,217,053	+2.1%
Over 65	10,458,200	12,247,920	+17.1%
	<b>£23.5bn</b>	<b>£30.7bn*</b>	

\*UK wide cost estimate for 2018 using 2018 population and 2.5% HC inflation

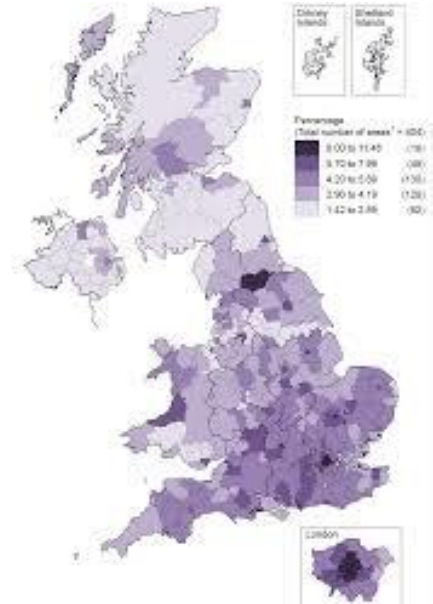
**2018 COSTS AT  
CONSTANT (2011)  
PRICES**

**£25.8bn**

**10%**

# A big number is difficult to interpret – breaking it down for today

- Local Authority Districts detailed population data available for 2016
- LAD for England, Health boards for Wales, N. Ireland and Scotland



## 2 ANALYSES

1. Cost of malnutrition per local authority (UK wide)
2. The impact of deprivation (England only)



Localising the costs of DRM



Deprivation Adj local costs

# Localising the Analysis...

**The total projected cost for the UK in 2016 is £28.6bn.** This is split across England, Scotland, Wales and Northern Ireland as follows.

<b>England</b>	<b>£23,951,747,888</b>
<b>Scotland</b>	<b>£2,397,045,773</b>
<b>Wales</b>	<b>£1,437,092,724</b>
<b>Northern Ireland</b>	<b>£763,430,950</b>
<b>TOTAL UK</b>	<b>£28,549,317,335</b>

# Localising the Analysis...

Country	Local Authority District	Population	Cost of Main
ENGLAND	Adur	63,506	£31,185,419
	Allerdale	96,956	£48,370,324
	Amber Valley	124,645	£59,433,435
	Arun	156,997	£86,333,596
	Ashfield	124,482	£55,161,046
	Ashford	126,151	£55,894,699
	Aylesbury Vale	193,113	£80,372,785
	Babergh	89,498	£46,159,935
	Barking and Dagenham	206,460	£68,456,232
	Barnet	386,083	£150,395,195
	Barnsley	241,218	£107,473,771
	Barrow-in-Furness	67,321	£31,714,402
	Basildon	183,378	£77,608,589
	Basingstoke and Deane	174,588	£73,235,501

# Localising the Analysis...Accounting for deprivation

Local Authority District	Population	Cost of Maln	IMD - Rank of average rank	Deprivation adjusted malnutrition cost (same total)
Adur	63,506	£31,185,419	150	£30,901,138
Allerdale	96,956	£48,370,324	114	£50,823,759
Amber Valley	124,645	£59,433,435	162	£57,706,196
Arun	156,997	£86,333,596	174	£82,102,590
Ashfield	124,482	£55,161,046	70	£61,993,122
Ashford	126,151	£55,894,699	173	£53,248,338
Aylesbury Vale	193,113	£80,372,785	283	£61,872,339
Babergh	89,498	£46,159,935	200	£41,902,892
Barking and Dagenham	206,460	£68,456,232	3	£84,558,612
Barnet	386,083	£150,395,195	157	£147,274,353
Barnsley	241,218	£107,473,771	37	£126,680,207
Barrow-in-Furness	67,321	£31,714,402	44	£37,013,023
Basildon	183,378	£77,608,589	113	£81,674,041
Basingstoke and Deane	174,588	£73,235,501	275	£57,351,768

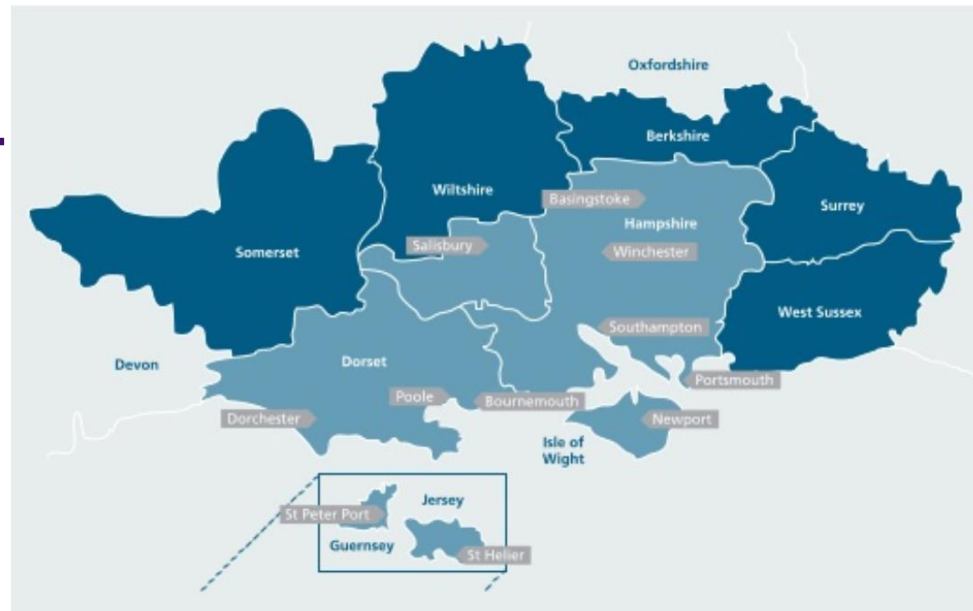
# CCGs in Wessex AHSN..

## 1 Population



WESSEX AHSN	All Ages	<18		18-64		65+	
NHS Dorset CCG	771,884	142,842	19%	440,599	57%	188,443	24%
NHS Fareham and Gosport CCG	200,786	40,415	20%	117,411	58%	42,960	21%
NHS Isle of Wight CCG	139,798	25,200	18%	76,778	55%	37,820	27%
NHS North East Hampshire and Farnham CCG	210,545	47,273	22%	127,193	60%	36,079	17%
NHS North Hampshire CCG	221,875	49,322	22%	133,174	60%	39,379	18%
NHS Portsmouth CCG	214,832	44,000	20%	140,923	66%	29,909	14%
NHS South Eastern Hampshire CCG	212,282	43,177	20%	120,626	57%	48,479	23%
NHS Southampton CCG	254,275	49,901	20%	171,135	67%	33,239	13%
NHS West Hampshire CCG	558,297	112,531	20%	318,339	57%	127,427	23%
1/4 of NHS Wiltshire CCG	122,102	26,267	22%	70,439	58%	25,397	21%
<b>TOTAL</b>	<b>2,906,676</b>	<b>580,928</b>	<b>20%</b>	<b>1,716,617</b>	<b>59%</b>	<b>609,132</b>	<b>21%</b>

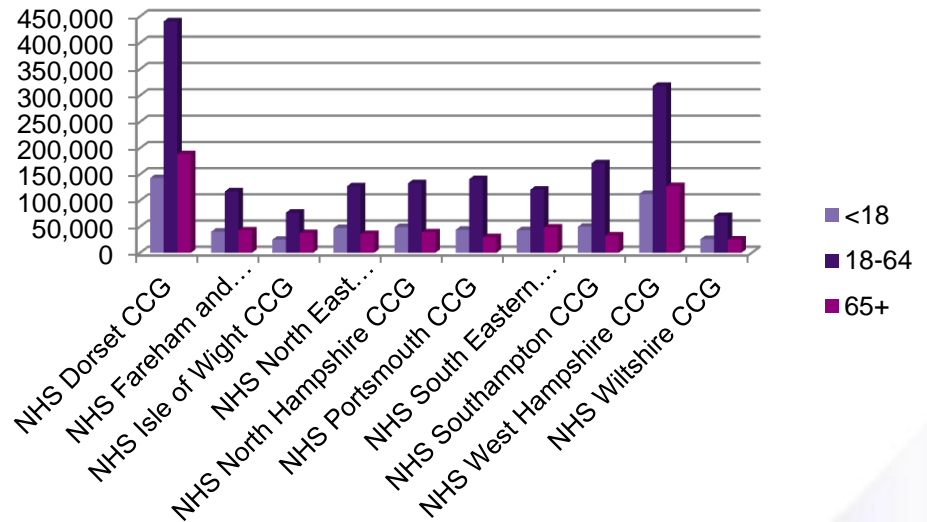
# CCGs in Wessex AHSN..



## 1 Population

### WESSEX AHSN

- NHS Dorset CCG
- NHS Fareham and Gosport CCG
- NHS Isle of Wight CCG
- NHS North East Hampshire and Farnham CCG
- NHS North Hampshire CCG
- NHS Portsmouth CCG
- NHS South Eastern Hampshire CCG
- NHS Southampton CCG
- NHS West Hampshire CCG
- 1/4 of NHS Wiltshire CCG



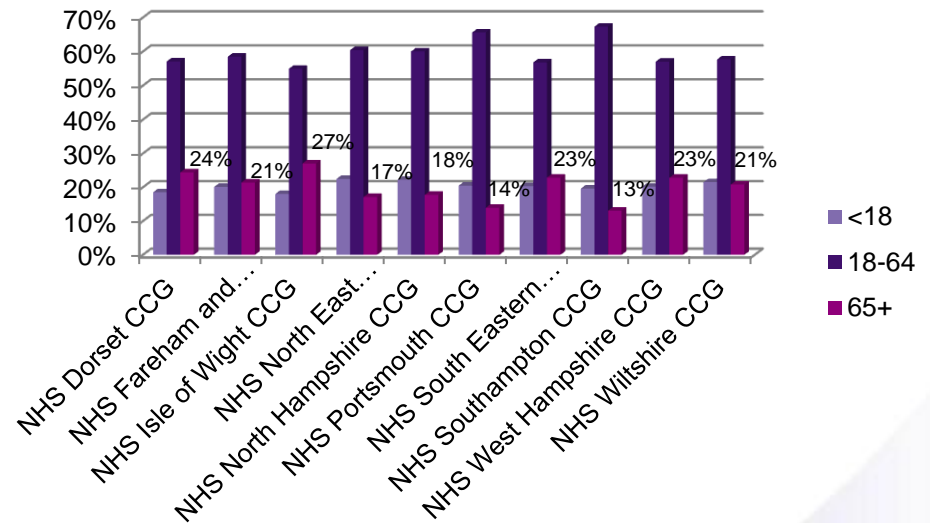
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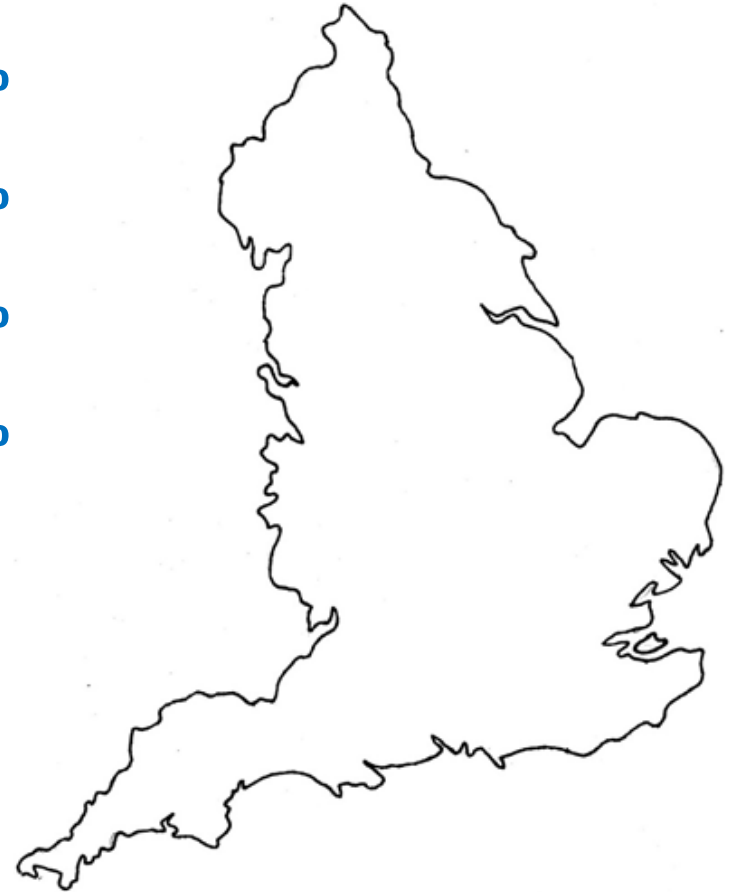
21% of population over 65

How does that compare ?.....

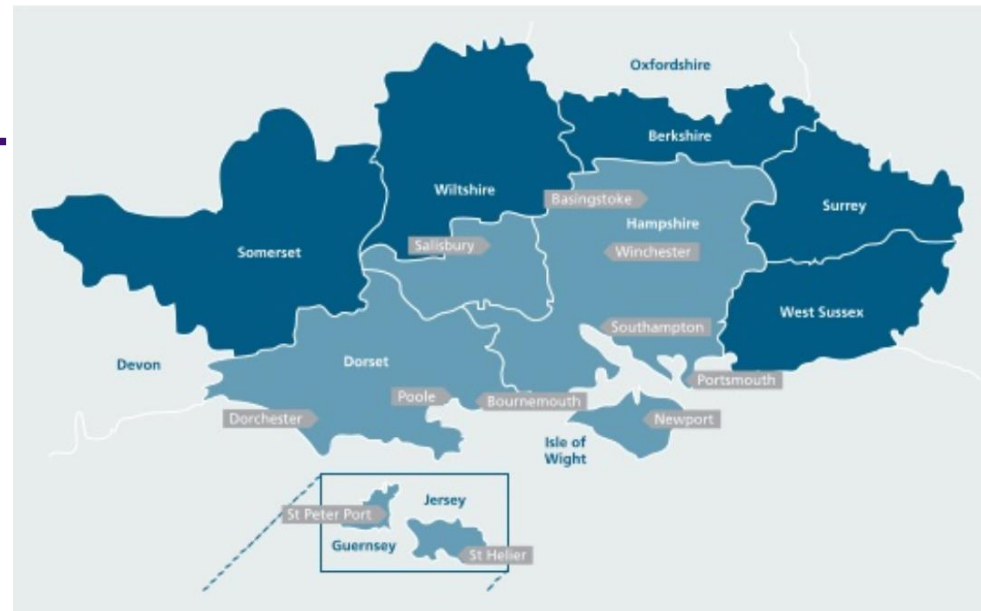


# Proportion of population over 65

- London **12%**
- North of England **18%**
- Midlands and East of England **19%**
- South of England **20%**
  - South Central **18%**
  - South East **20%**
  - **Wessex** **21%**
  - South West **22%**



# CCGs in Wessex AHSN..



## 2 Costs of DRM

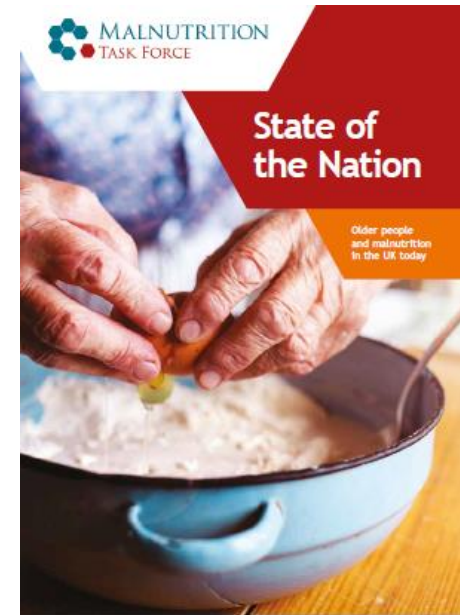
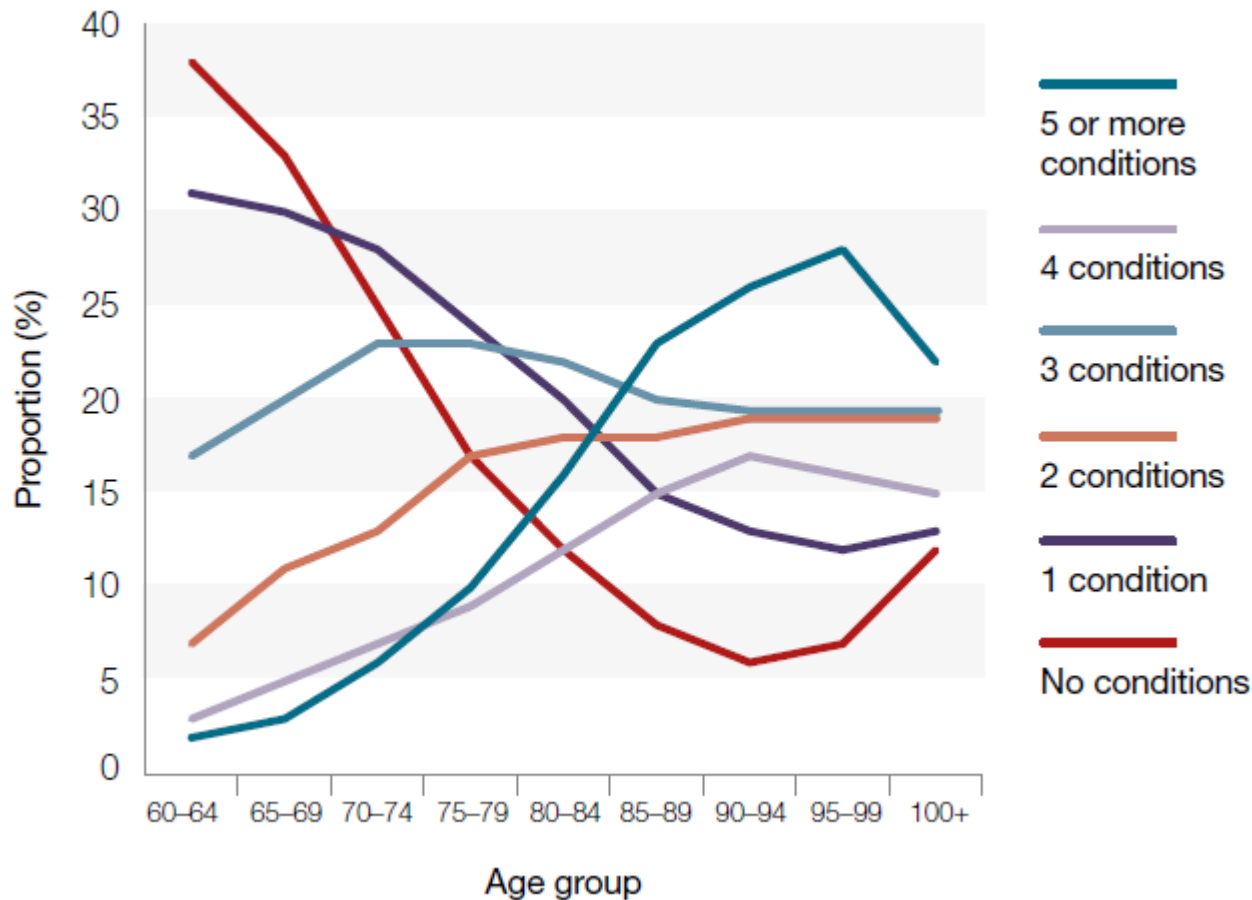
### WESSEX AHSN

NHS Dorset CCG	£	410,609,897
NHS Fareham and Gosport CCG	£	99,550,863
NHS Isle of Wight CCG	£	78,550,486
NHS North East Hampshire and Farnham CCG	£	93,630,950
NHS North Hampshire CCG	£	100,254,435
NHS Portsmouth CCG	£	88,703,598
NHS South Eastern Hampshire CCG	£	108,537,163
NHS Southampton CCG	£	103,004,526
NHS West Hampshire CCG	£	285,556,672
1/4 of NHS Wiltshire CCG	£	59,432,032
<b>TOTAL</b>	<b>£</b>	<b>1,427,830,621</b>

***Disease Related Malnutrition consumes £1.4bn of Health and Social Care costs in the Wessex AHSN region***

# More health problems in later life

## Number of health problems by age group in England, 2014



Source: Age UK and University of Exeter Medical School, 2015<sup>26</sup>

[http://www.malnutritiontaskforce.org.uk/wp-content/uploads/2017/10/AW-5625-Age-UK-MTF\\_Report.pdf](http://www.malnutritiontaskforce.org.uk/wp-content/uploads/2017/10/AW-5625-Age-UK-MTF_Report.pdf)

# CCGs in Wessex AHSN..

## 3 Elderly Population (over 65)



	65-74		75-84		85+	
WESSEX AHSN						
NHS Dorset CCG	99,517	53%	59,775	32%	29,151	15%
NHS Fareham and Gosport CCG	23,393	54%	13,735	32%	5,832	14%
NHS Isle of Wight CCG	21,095	56%	11,463	30%	5,262	14%
NHS North East Hampshire and Farnham CCG	19,793	55%	11,491	32%	4,795	13%
NHS North Hampshire CCG	22,400	57%	12,074	31%	4,905	12%
NHS Portsmouth CCG	16,157	54%	9,393	31%	4,359	15%
NHS South Eastern Hampshire CCG	25,854	53%	15,668	32%	6,957	14%
NHS Southampton CCG	18,036	54%	10,274	31%	4,929	15%
NHS West Hampshire CCG	68,006	53%	40,342	32%	19,079	15%
1/4 of NHS Wiltshire CCG	13,964	55%	7,945	31%	3,488	14%
TOTAL	328,215	54%	192,160	32%	88,757	15%

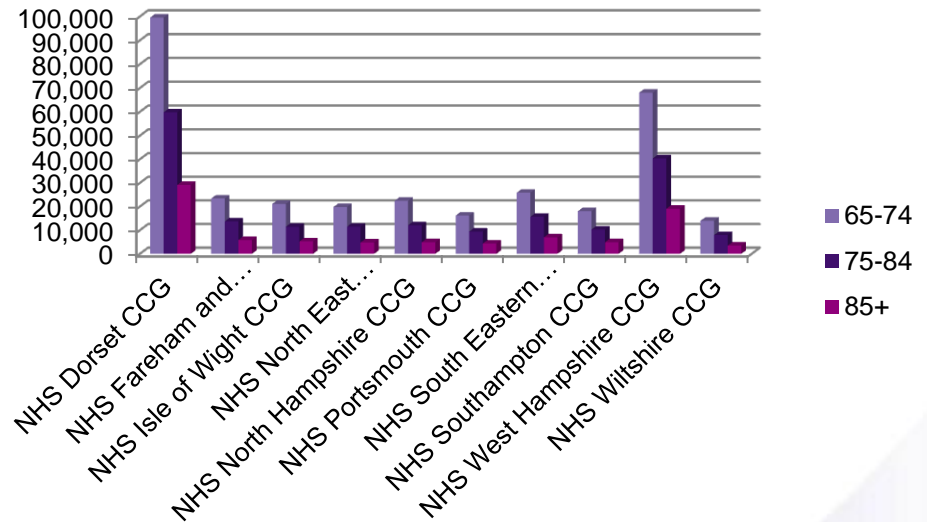
# CCGs in Wessex AHSN..

## 3 Elderly Population (over 65)



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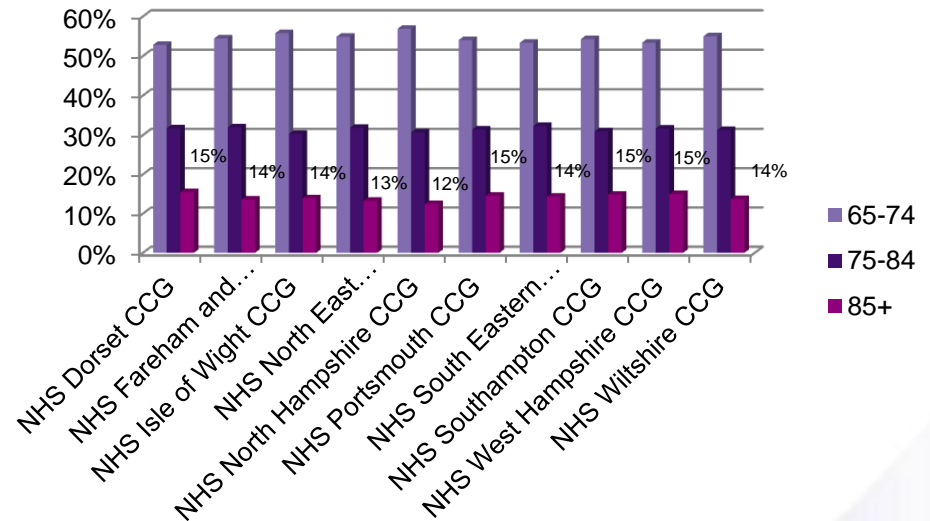
# CCGs in Wessex AHSN..

## 3 Elderly Population (over 65)



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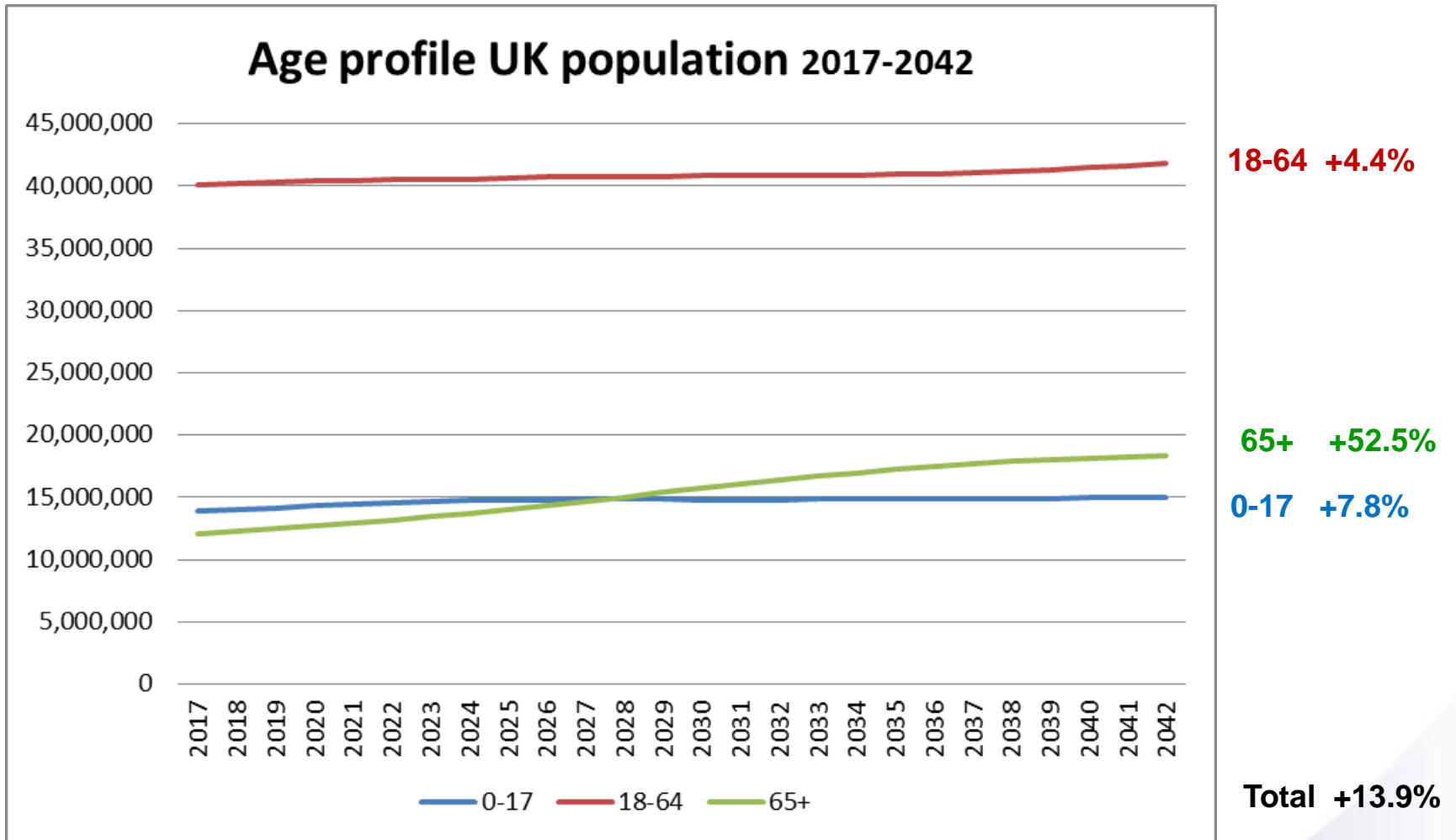
15% of elderly population over 85

# Proportion of over 65's who are over 85

- London 14%
- North of England 13%
- Midlands and East of England 13%
- South of England 14%
  - South Central 14%
  - South East 15%
  - **Wessex 15%**
  - South West 14%



# Taking the long view – what could this look like in 25 years time





# What could that look like today?

2 key factors

1. Population changes
2. Healthcare inflation @**2.46% pa**

	Over 65	18-64	Under 18
2011 Cost per person	<b>£1,176.57</b>	<b>£249.81</b>	<b>£97.4</b>
2018 Cost per person	<b>£1,394.76</b>	<b>£296.14</b>	<b>£115.51</b>
2042 Cost per person	<b>£2,499.21</b>	<b>£530.64</b>	<b>£206.97</b>

# By 2042, the costs of Disease related malnutrition

## UK POPULATION AND COST OF DRM IN 25 YEARS

	2018	2042
Under 18	14,021,853	14,994,473
18-64	40,217,053	41,845,008
Over 65	12,247,920	18,340,255
	<b>£30.7bn</b>	<b>£71.1bn*</b>
	(£461 per capita)	(£946 per capita)

\*UK wide cost estimate for 2042 using 2042 population projections and 2.5% HC inflation rate

# At constant prices – the impact of demographics

## UK POPULATION AND COST OF DRM IN 25 YEARS

	2018	2042
Under 18	14,021,853	14,994,473
18-64	40,217,053	41,845,008
Over 65	12,247,920	18,340,255

£30.7bn

£39.8bn\*

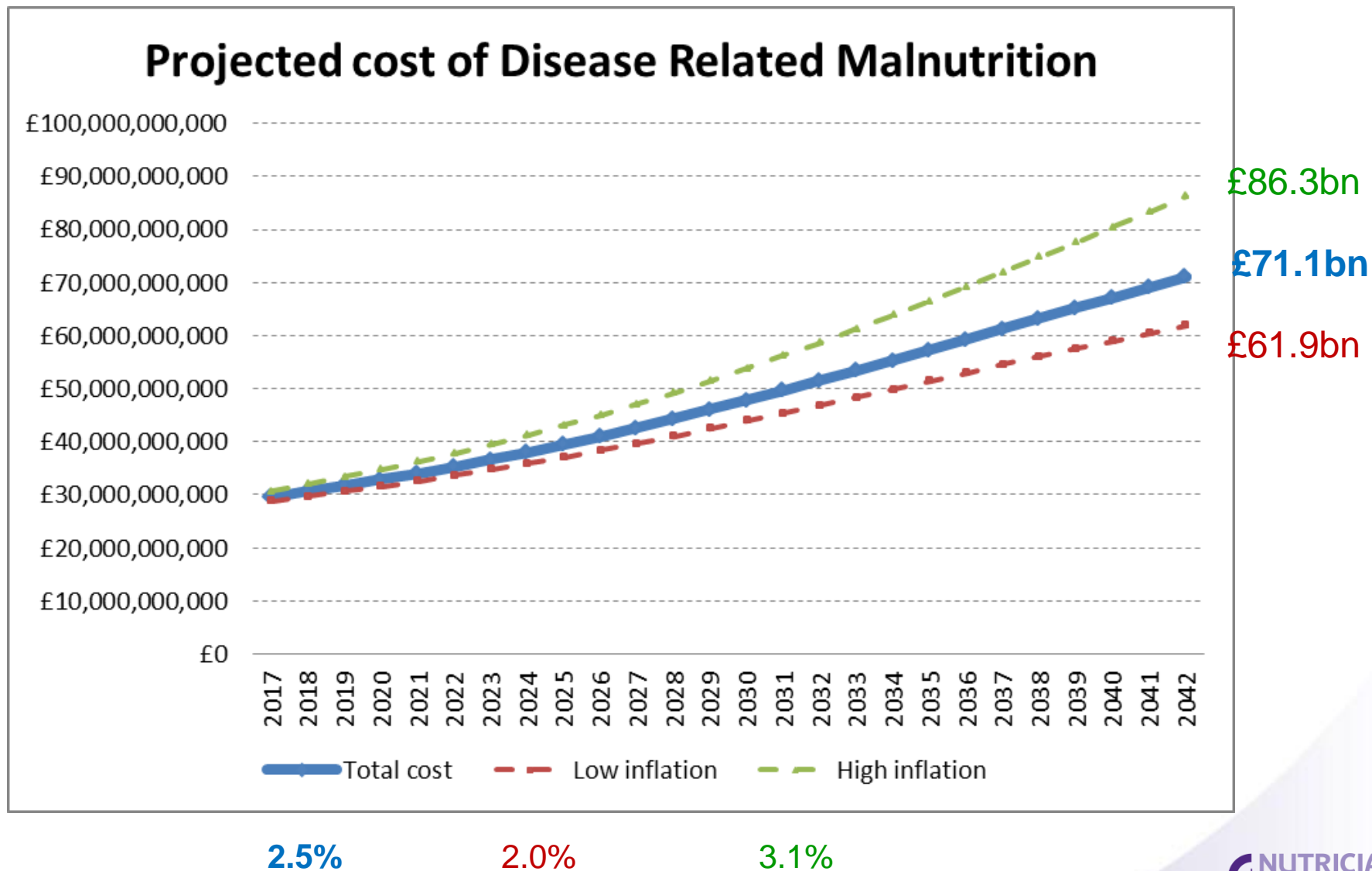
30%

\*UK wide cost estimate for 2042 using 2042 population projections and 0% HC inflation rate (post 2018)

# Key sensitivities

## 1. Healthcare inflation rate

# Adding the impact of inflation

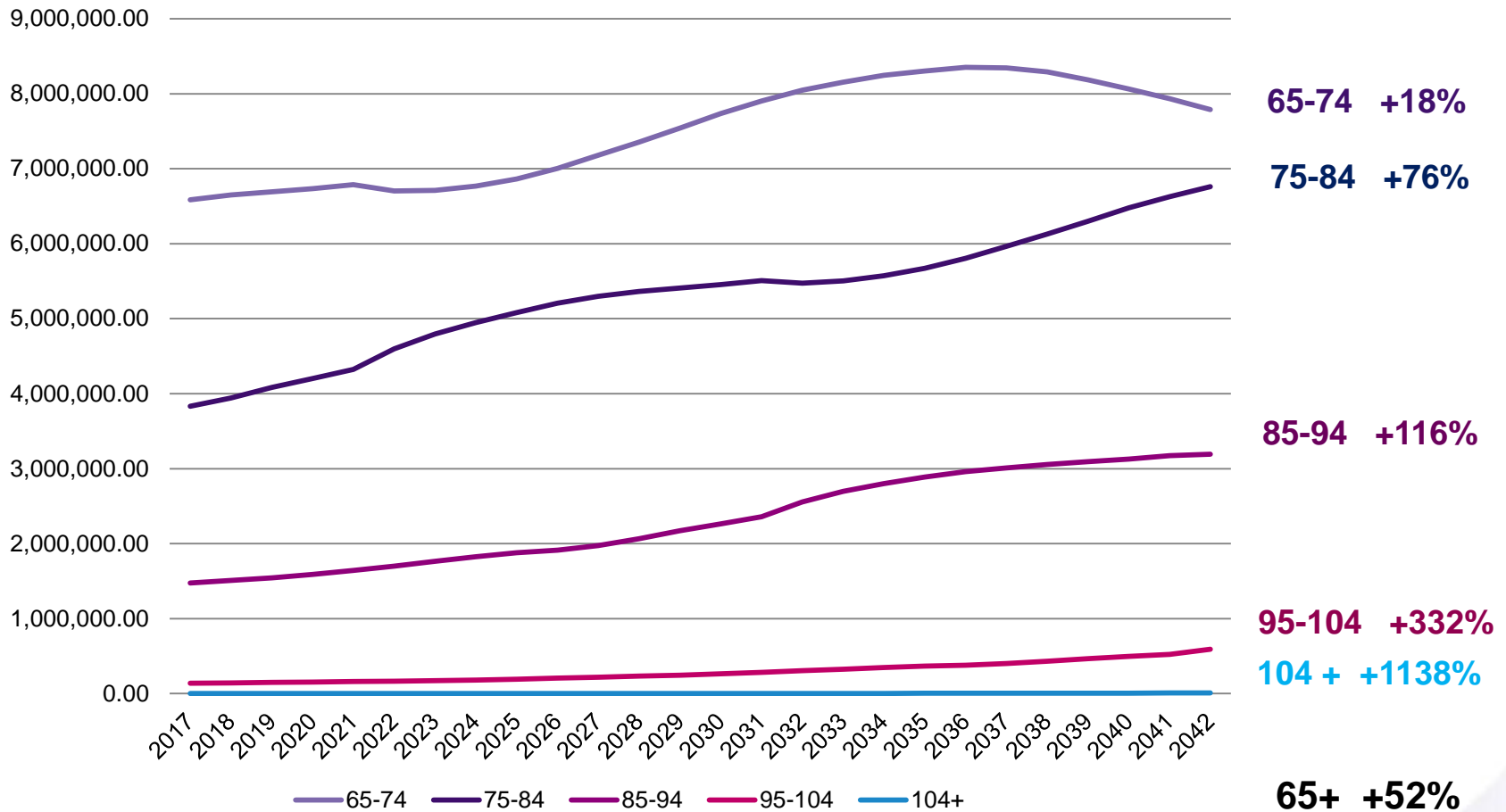


# Key sensitivities

1. Healthcare inflation rate
- 2. Changing burden of DRM as the profile of ageing changes**

# The impact of a more aged population

## Age profile of over 65's 2017-2042



The impact of a more aged population...by 2012,  
what if.....

Core estimate = £71,144,143,434

Costs of managing malnutrition in elderly (+65's)  
increased by.....

1%	£71,602,505,483
5%	£73,435,953,680
10%	£75,727,763,927
25%	£82,603,194,665



# Key sensitivities

1. Healthcare inflation rate
2. Changing burden of DRM as the profile of ageing changes

**+ Changing burden of disease**

**+ Demographic changes (births / immigration / life expectancy)**

**+ MOST IMPORTANT OF ALL.....**

# Are we able to cope?

Given current standards of care....

- This year DRM will cost the UK more than £30bn
- In 15 years time this cost will breach the £50bn mark
- Over the next 25 years the changing population could increase costs in real terms by 30%
- In 25 years time DRM could cost the UK over £70bn

The most important factor is how well we can improve the detection, prevention & management of Disease Related Malnutrition.

# Thank you

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## KEY REFERENCES

- The cost of malnutrition in England and potential cost savings from nutritional interventions (full report). Marion Elia. BAPEN / NHR 2015. <http://www.bapen.org.uk/pdfs/economic-report-full.pdf>
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