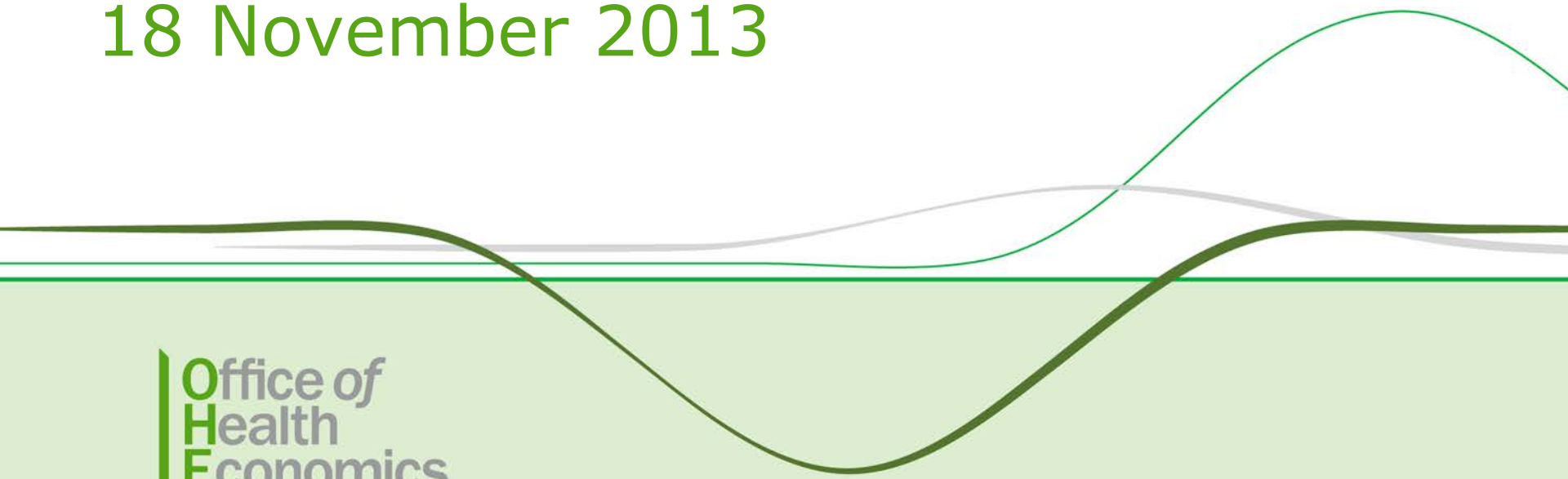
UK NHS Medicines Bill Projection: Methodology and Results 2013–2018

18 November 2013



Office of Health Economics

Research

Outline

- Publication in *PharmacoEconomics*
- The OHE model
- Summary of industry and external engagement
- Building blocks and structure of the model
- Adjustments
- ABPI forecast to 2018

Publication in *PharmacoEconomics*

O'Neill, P., Mestre-Ferrandiz, J., Puig-Peiro, R. and Sussex, J. (2013)
Projecting Expenditure on Medicines in the UK NHS

- **Objective**: develop and test an improved method to project NHS pharmaceutical expenditure in the UK for the period 2012–2015
- **Method**: product-by-product, bottom up approach – taking into account the impact of entry of generic and biosimilars on prices and quantities as well as the uptake of newly launched medicines
- **Results**: robustness of methodology evidenced by actual 2012 sales being within the projected range – for the total market
- **Conclusions**: the developed methodology provides a useful framework for projecting UK NHS medicines expenditure over the medium term

The OHE Model

Bottom-up projection: built up from pack level to total market

Detailed company input on more dynamic therapy areas (covering approx. 80%+ of the market)

Public data and industry intelligence used to:

- Generate current position
- Create erosion curves after loss of exclusivity (LoE)
- Identify future new products and their likely uptake

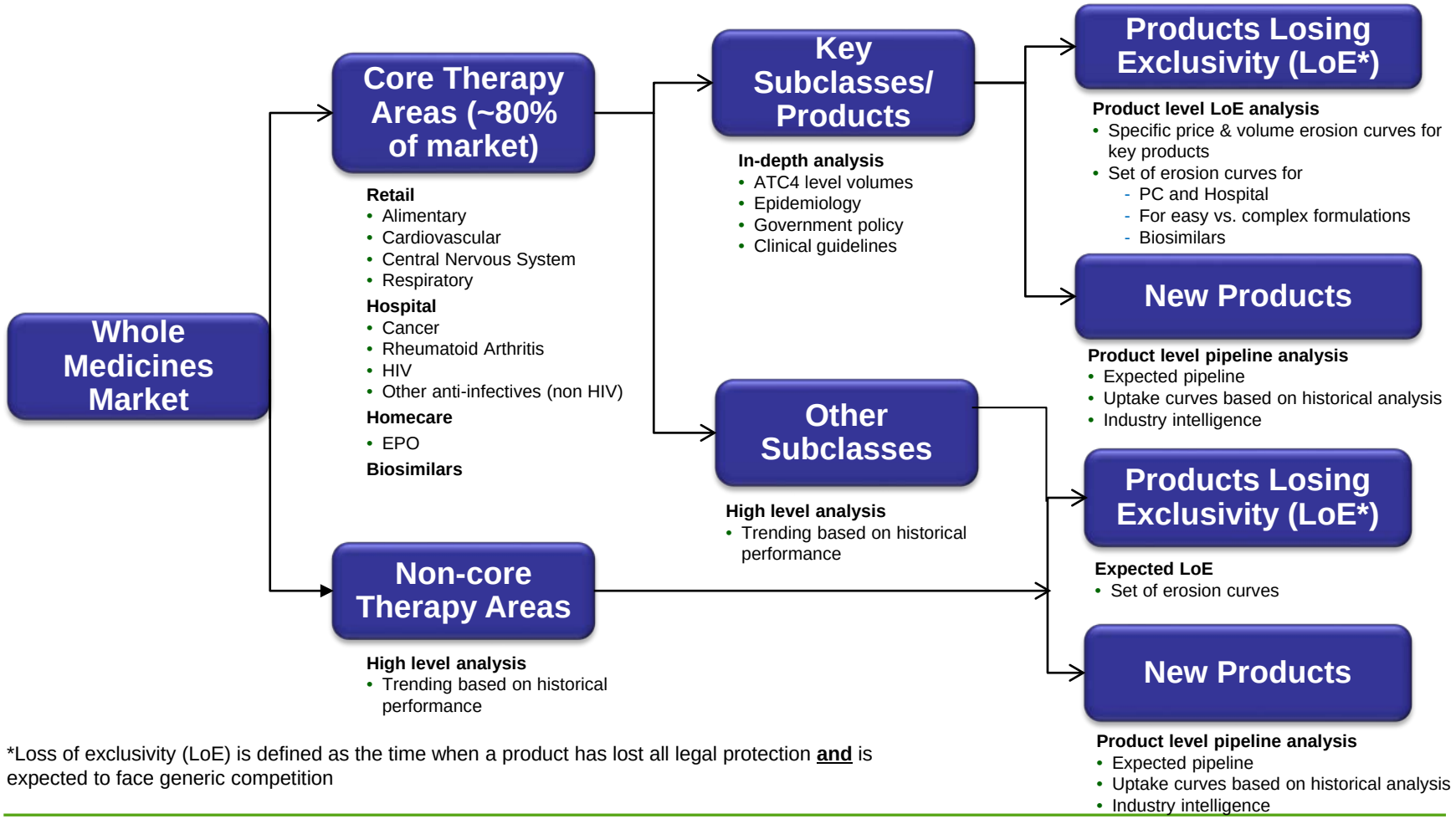
Keep model at list prices (based on IMS data), but evaluate and list **adjustments** to reflect where IMS list prices are discounted

- e.g. level of discounts in the hospital market, value of brand equalisation deals, home care

Account for degree of "cannibalisation" of sales from new launches

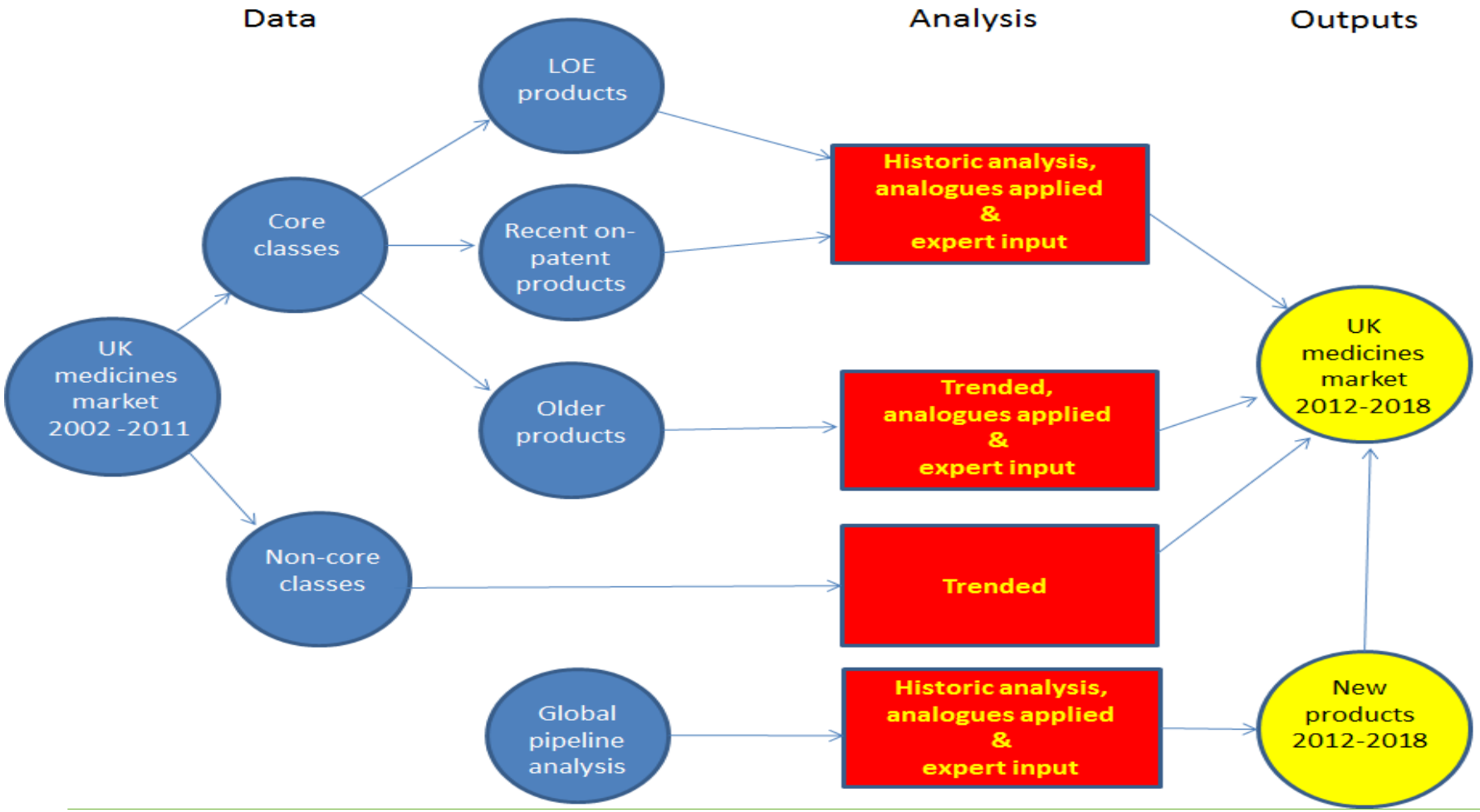
Scenarios – focus on ranges, rather than point estimates

Overview of Projection Method



*Loss of exclusivity (LoE) is defined as the time when a product has lost all legal protection **and** is expected to face generic competition

Structure of the Model

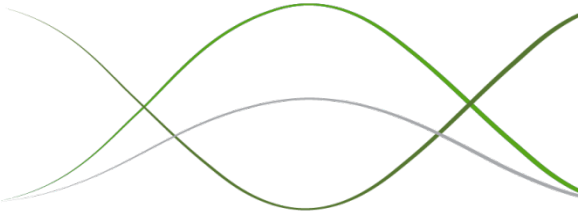


Scenarios

Notes: ATC Anatomic Therapeutic Chemical, ATC4 categories indicate the chemical/therapeutic/pharmacological subgroup, CV cardiovascular, LOE loss of exclusivity, SSRI selective serotonin re-uptake inhibitors, SNRI serotonin–norepinephrine reuptake inhibitors, TA therapeutic area, anti-TNF anti-tumour necrosis factor

Estimate range	New product launches – Attrition rates	New product launches - Uptake curves	New product launches – Year 1 sales	Cannibalisation of sales for future launches	LOE - Generics	LOE – Biosimilars (Cancer and TNFs)	Non-core areas / all therapy area growth	Genericisation of established products
Baseline	Match count of future launches to launches during 2003 - 2010	Current uptake curves per therapy area (TA)	Current year 1 sales per TA	25% of sales of future launches are additive. For oncology: 75% of sales of future launches are additive	Use current erosion curves	TNFs and Cancer: less aggressive than difficult 2ry care. Cancer less aggressive than TNFs (for earlier years)		
Low	10% fewer launches relative to 2003-2010	Use 'average' uptake curves for TA with higher than average uptake curves	Current year 1 sales per TA - 10%	10% of sales of future launches are additive. For oncology: 50% of sales of future launches are additive	For TA with less than aggressive erosion curves, use 'average'	10 percentage points more aggressive than baseline for all LOE products	Both core and non-core areas growth reduced from trend by 2% p.a.	Additional 1% reduction in 'recent' branded growth for key ATC4 with generics (Diabetes, CV, SSRI/SNRI)
High	10% more launches relative to 2003-2010	Use 'average' uptake curves for TA with lower than average uptake curves	Current year 1 sales per TA + 10%	40% of sales of future launches are additive. For oncology: 100% of sales of future launches are additive	For TA with more than aggressive erosion curves, use 'average'	Cancer: 10 percentage points less aggressive than baseline		

Summary of Industry and External Engagement



Core Team

- OHE: Phill O'Neill, Ruth Puig-Peiro, Jorge Mestre-Ferrandiz, Jon Sussex
- ABPI: Geoff Bailey, Alison Clough
- A.T. Kearney: Sol Magaz, Ayesha Kanji
- Industry: John Kearney (Amgen), Rob Day (Pfizer), Tricia Porter (GSK), Tim Williams (MSD)

Expert input into core therapy areas (e.g. trending, LoE, pipeline analysis and uptake curves)

Hospital survey

- Level and trends in discounting

Homecare survey

- Data not picked up by IMS
- Level of discounting

Building Blocks of the Model: Structure

Four "types" of products

1. **LoE** products between 2012 and 2018
    - Distinguishing between generics and biosimilars
2. **Future launches** (launched between 2012 and 2018)
3. **Recent launches** (launched between 2007 and 2011)
4. **Non-recent** (launched before 2007), **non-LoE** products

Adjustments

A number of adjustments have been made:

1. Value of brand equalisation deals in primary care
2. Level and trends of discounts in hospital sector
3. Size of homecare channel (not picked up by IMS)

We have results at GROSS and NET level. Following slides report NET results

Projection Results

2014 to 2018 – NET (incl. branded discounts)

Total UK NHS medicines bill projected to increase by 3.5 – 4.7% CAGR [**baseline: 4.1%**] to between £16.1 – 17.4bn [baseline: £16.7bn] (2007-11 was 3.5% CAGR)

- Primary care by 2.4 – 3.0% p.a. [baseline: 2.8%] (2007-11 was 0.9% CAGR)
- Secondary care by 5.2 – 7.4% p.a. [baseline: 6.3%] (2007-11 was 10.0% CAGR)

Branded medicines bill, including biosimilars, projected to increase by **1.8% - 3.6% CAGR** [**baseline: 2.6%**] to between £11.2 – 12.4bn [baseline: £11.7bn] (2007-11 was 3.7% CAGR)

- Primary care by 0.3% to 1.3% p.a. [baseline: 0.8%] (2007-11 was 1.4% CAGR)
- Secondary care by 3.8% to 6.6% p.a. [baseline: 5.1%] (2007-11 was 9.2% CAGR)

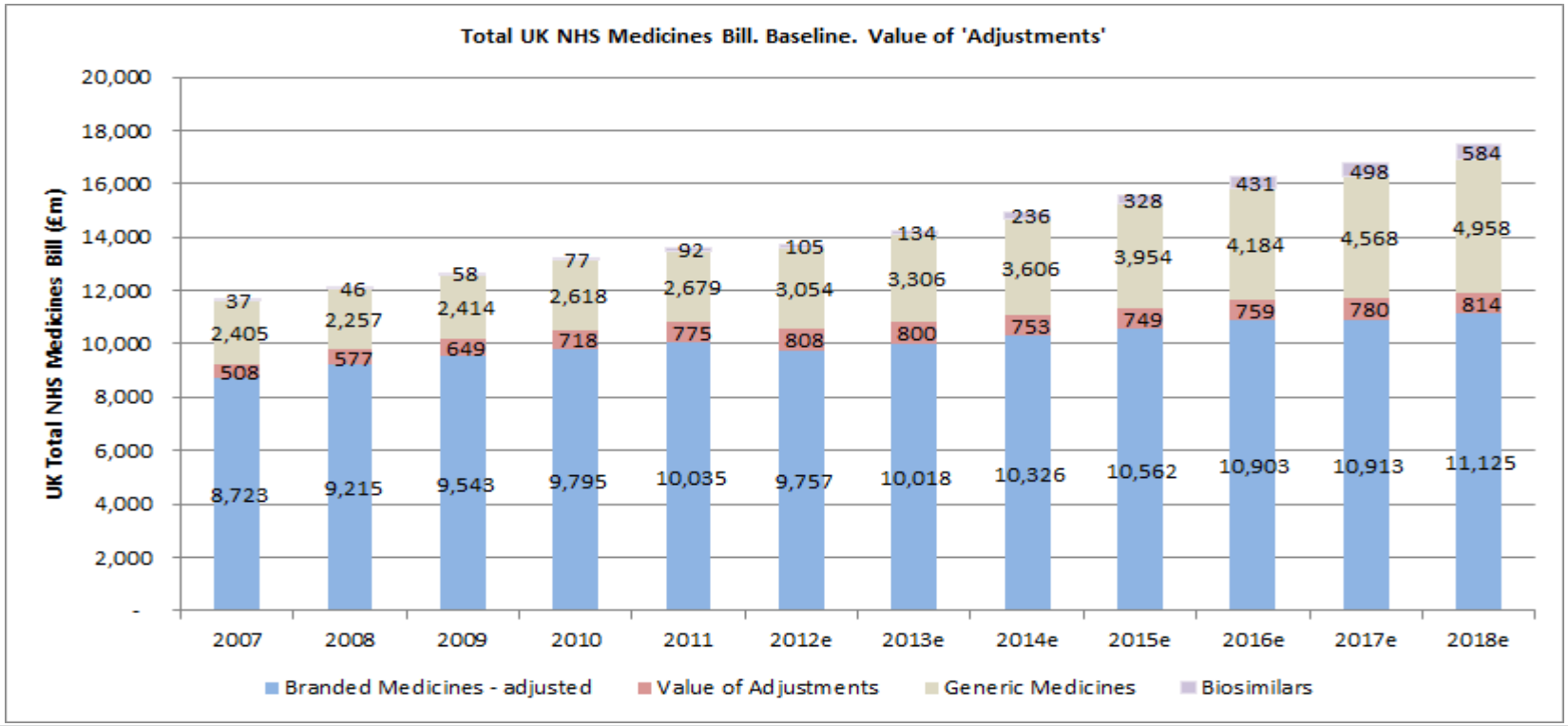
Comparison 2007–2011 / 2011–2015e / 2011–2018e / 2014–2018e

Baseline – Growth rate (NET)	2007 - 2011	2011 – 2015e	2011 – 2018e	2014-2018e (range)
Total	3.5%	3.8%	3.8%	**4.1% (3.5% - 4.7%)**
Total primary care	*0.9%*	*1.4%*	*1.9%*	*2.8% (2.4% - 3.0%)*
Total secondary care	*10.0%*	*8.1%*	*7.1%*	*6.3% (5.2% - 7.4%)*
Total branded (incl. biosimilars)	3.7%	1.8%	2.1%	**2.6% (1.8% - 3.6%)**
Branded primary care	*1.4%*	*-1.5%*	*-0.5%*	*0.8% (0.3% - 1.3%)*
Branded secondary care	*9.2%*	*7.5%*	*6.3%*	*5.1% (3.8% - 6.6%)*

Year-on-Year Growth Rates

Baseline – Growth rate (NET)	2013 – 14e	2014 – 15e	2015 – 16e	2016 – 17e	2017 – 18e	2014-2018e (range)
Total	*5.3%*	4.8%	4.5%	3.0%	4.3%	**4.1% (3.5% - 4.7%)**
Total primary care	*2.7%*	*3.0%*	*3.3%*	*1.4%*	*3.4%*	*2.8% (2.4% - 3.0%)*
Total secondary care	*9.7%*	*7.7%*	*6.4%*	*5.4%*	*5.6%*	*6.3% (5.2% - 7.4%)*
Total branded (incl. biosimilars) [RANGES]	4.0% [3.4 – 3.7%]	3.1% [2.2 – 3.6%]	4.1% [3.4 – 4.8%]	0.7% [-0.3 – 2.8%]	2.6% [1.7 – 3.0%]	**2.6% (1.8% - 3.6%)**
Branded primary care	*1.2%* [0.9 – 0.3%]	*0.8%* [0.2 – 0.7%]	*2.9%* [2.7 – 3.1%]	*-2.1%* [-2.7 – 0.4%]	*1.6%* [1.0 – 1.1%]	*0.8% (0.3% - 1.3%)*
Branded secondary care	*8.5%* [7.3 – 9.3%]	*6.5%* [5.2 – 7.9%]	*5.7%* [4.4 – 7.1%]	*4.5%* [3.1 – 5.9%]	*3.9%* [2.6 – 5.4%]	*5.1% (3.8% - 6.6%)*

Summary: Brands vs. Generics vs. Biosimilars. Value of Adjustments (Baseline Scenario)



Total UK medicines bill (£m): Baseline	2007	2008	2009	2010	2011	2012e	2013e	2014e	2015e	2016e	2017e	2018e
Generics	2,405	2,257	2,414	2,618	2,679	3,054	3,306	3,606	3,954	4,184	4,568	4,958
Biosimilars	37	46	58	77	92	105	134	236	328	431	498	584
Brands	9,231	9,792	10,192	10,513	10,810	10,564	10,818	11,079	11,310	11,661	11,693	11,940
Total UK medicines bill ('Gross')	11,673	12,095	12,664	13,208	13,581	13,723	14,259	14,922	15,592	16,277	16,759	17,481
Value of adjustments	508	577	649	718	775	808	800	753	749	759	780	814
Total UK medicines bill ('Net')	11,165	11,518	12,015	12,490	12,806	12,916	13,459	14,168	14,844	15,518	15,979	16,666

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