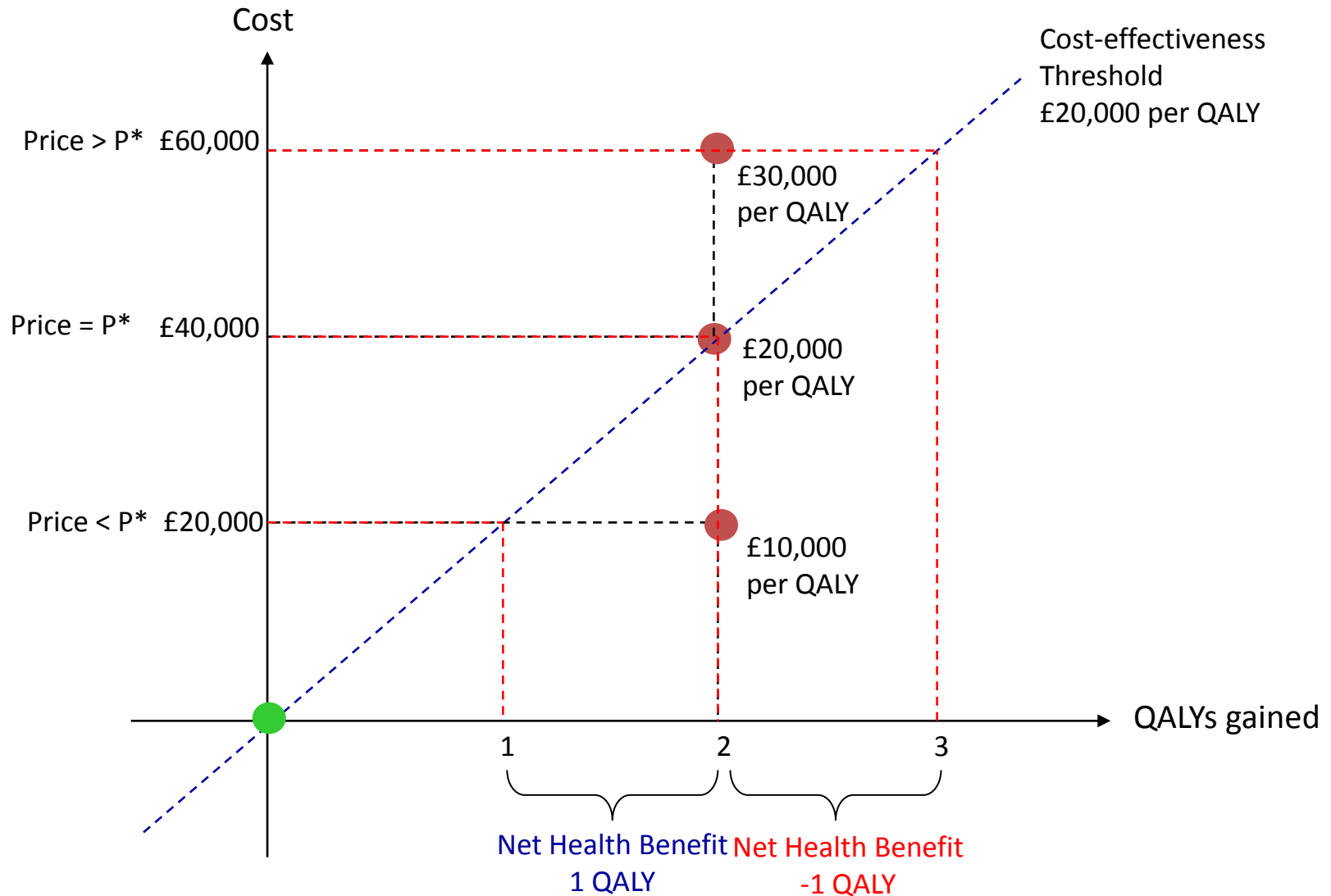


Methods for the Estimation of the NICE Cost Effectiveness Threshold

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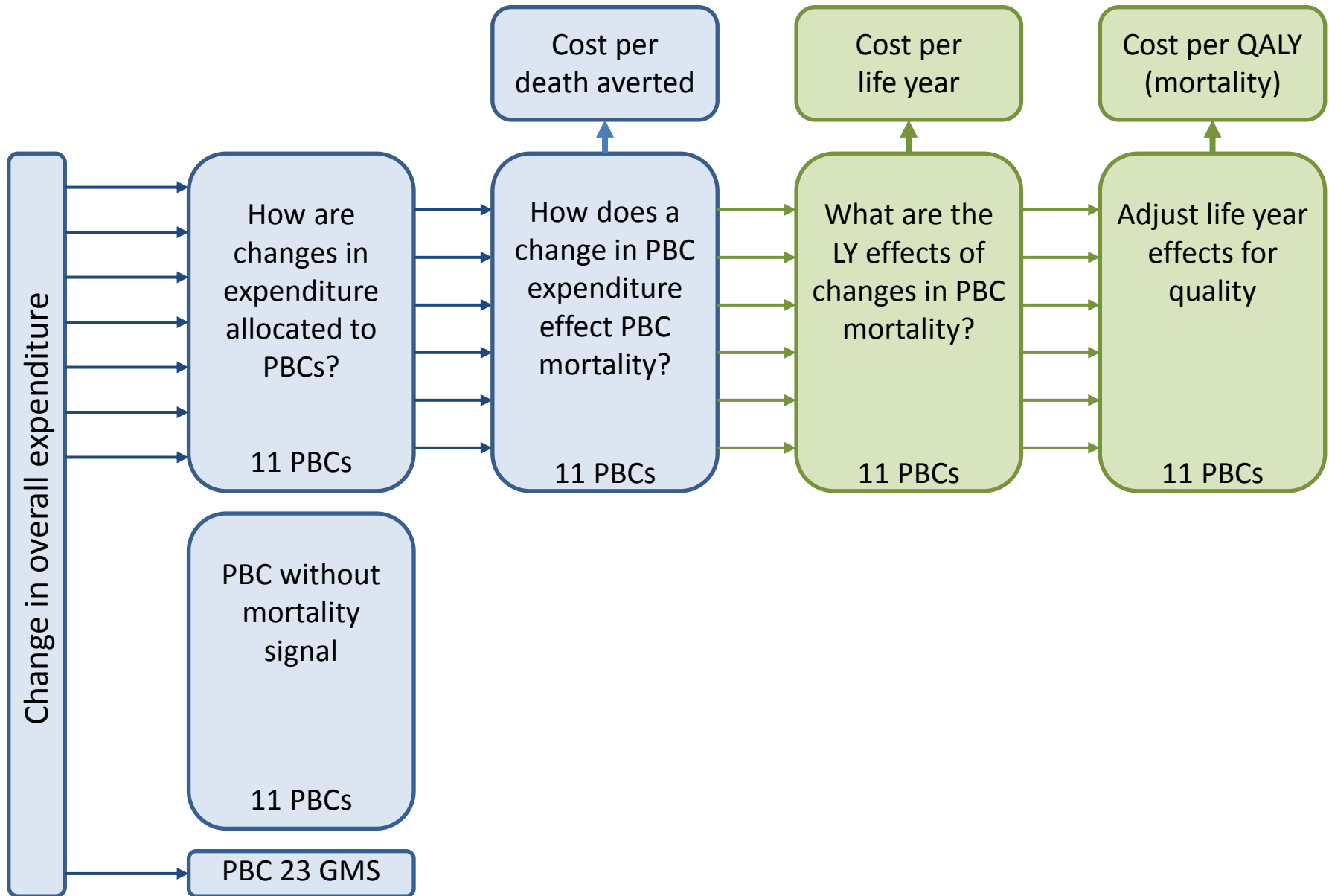
Which drugs at what price?



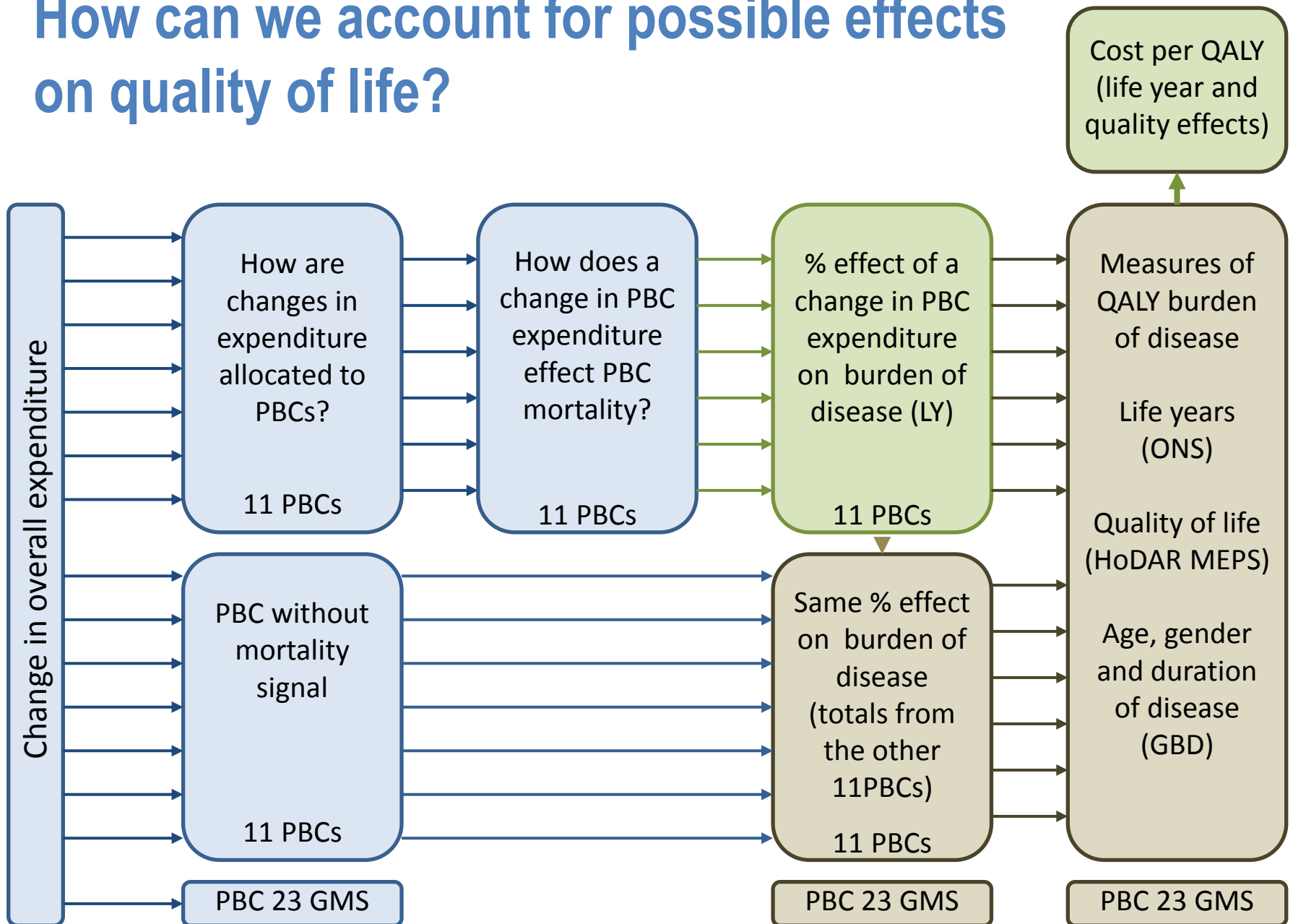
How can we estimate it?

- NICE threshold range (2004)
 - £20,000 to £30,000 per QALY (implied by past decisions)
 - NICE does not reject below £30,000 per QALY
 - Evidence that the effective threshold is £40,000 per QALY
 - In some circumstances £50,000 per QALY
- Estimate the relationship between changes in expenditure and outcomes
 - 23 Programme Budget Categories (PBCs)
 - Disease areas (groups of ICD codes)
 - All expenditure allocated to each PBC
 - 152 Primary Care Trusts (PCTs)
 - Local areas of the NHS
 - PBC expenditure and mortality by ICD code

How can we estimate it?



How can we account for possible effects on quality of life?



Estimates of the threshold

	Cost per death averted	Cost per life year	Cost per QALY (mortality effects)	Cost per QALY
<i>Qol associated with LYs</i>	-	1	<i>Norms</i>	<i>Based on burden</i>
<i>Qol during disease</i>	-	0	0	<i>Based on burden</i>
<i>YLL per death averted</i>	-	4.5 YLL	4.5 YLL	4.5 YLL
<i>QALYs per death averted</i>	-	4.5 YLL	3.8 QALY	12.7 QALY
11 PBCs (with mortality)	£105,872	£23,360	£28,045	£8,308
All 23 PBCs	£114,272	£25,214	£30,270	£12,936

What are the expected health consequences of £10m?

	Change in spend	Additional deaths	LY lost	Total QALY lost	Due to premature death	Quality of life effects
Totals	10 (£m)	51	233	773	150	623
Cancer	0.45	3.74	37.5	26.3	24.4	1.9
Circulatory	0.76	22.78	116.0	107.8	73.7	34.1
Respiratory	0.46	13.37	16.1	229.4	10.1	219.3
Gastro-intestinal	0.32	2.62	24.7	43.9	16.2	27.7
Infectious diseases	0.33	0.72	5.3	15.7	3.6	12.1
Endocrine	0.19	0.67	5.0	60.6	3.2	57.3
Neurological	0.60	1.21	6.5	109.1	4.3	104.8
Genito-urinary	0.46	2.25	3.3	10.6	2.1	8.5
Trauma & injuries*	0.77	0.00	0.0	0.0	0.0	0.0
Maternity & neonates*	0.68	0.01	0.4	0.2	0.2	0.1
Disorders of Blood	0.21	0.36	1.7	21.8	1.1	20.7
Mental Health	1.79	2.83	12.8	95.3	8.3	87.0
Learning Disability	0.10	0.04	0.2	0.7	0.1	0.6
Problems of Vision	0.19	0.05	0.2	4.2	0.2	4.1
Problems of Hearing	0.09	0.03	0.1	14.0	0.1	13.9
Dental problems	0.29	0.00	0.0	6.8	0.0	6.8
Skin	0.20	0.24	1.1	1.9	0.7	1.2
Musculo skeletal	0.36	0.39	1.8	23.2	1.2	22.1
Poisoning and AE	0.09	0.04	0.2	0.8	0.1	0.7
Healthy Individuals	0.35	0.03	0.2	0.7	0.1	0.6
Social Care Needs	0.30	0.00	0.0	0.0	0.0	0.0
Other (GMS)	1.01	0.00	0.0	0.0	0.0	0.0

Is NICE doing more harm than good?

- For every £10m of additional NHS costs

Cost-effectiveness of a new drug	Health gained (QALYs)	Health lost (QALYs)	Net harm to NHS patients
£20,000 per QALY	500	773	-273
£30,000 per QALY	333	773	-440
£40,000 per QALY	250	773	-523
£50,000 per QALY	200	773	-573

Harm done by the Cancer Drugs Fund

	Budget	Health lost elsewhere (QALYs)	Benefits of CDF (QALYs)*	Net harm to NHS patients
2013/14	£231m	17,821	3,374	-14,447
2014/15	£280m	21,645	4,098	-17,547
2015/16	£340m	26,283	4,977	-21,306

* 19,282 patients treated in 2013/14 and assuming 3 month survival benefit and 0.7 quality of life. Implies £68,321 per QALY which is used to infer benefits in 2014-16

Implications for policy

- NICE
 - Thresholds used by NICE are certainly too high
 - NICE guidance is currently doing more harm than good
 - Paying too much not to little for new drugs
- Pharmaceutical pricing
 - Require, predictable, accountable evidence based pricing
 - Health consequences of using the NHS to support the sector
 - Better ways to encourage valuable innovation
- Accountable and ethical decisions
 - Makes unidentified NHS patients more real
 - Exposes reality of the choices face with current resources
 - Contribute to informed debate (the NHS is good value)