

Cheshire & Merseyside Strategic Commissioning

Modelling wet AMD capacity and budgets

Approach adopted

- ◆ Using a population based 'systems model' that reflects patient pathways;
- ◆ Capture of 'mental model' as expressed in published material and informed by local understanding and expectations;
- ◆ Required to inform key issues of spend and capacity requirements for new drugs to treat wet AMD;
- ◆ Provides an 'intelligence base' for informed commissioning decisions.

Population, incidence and uptake

- ◆ ONS 2004 based population projections for Local Authority areas – coterminous with PCTs (one current exception being no split for Cheshire);
- ◆ Time-series 2007 to 2012 used broken down to 10yr age bands consistent with incidence data;
- ◆ Combined incidence data as used in Bruce Bolam paper, 8th January 2007;
- ◆ Uptake is key model variable – baseline assumption is 35% in 2007 rising by 5% pa to 60% by 2012.

Treatment options

- ◆ Alternatives scenarios modelled:
 - 100% to Macugen (base option);
 - 100% to Lucentis;
 - 5% to PDT (classic and predominantly classic) 95% to Lucentis plus 30% (failure rate from PDT) subsequently proceeding to Lucentis;
 - 100% to Avastin.

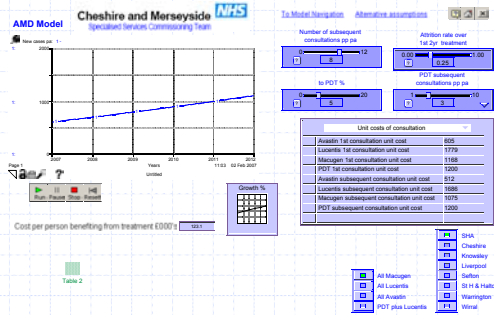
Treatment

- ◆ 2 year (with option of a certain percentage entering a second 2 year period of treatment);
- ◆ 6 month no drop out but then option to 'leak' a percentage (base rate of 25%);
- ◆ Age specific death rates added to 'drop-out' figures;
- ◆ Number needed to treat - Macugen = 6.7, Lucentis = 2.56, PDT = 6.67 & Avastin = 2.56.

Key model variables

- ◆ 'Presentation';
- ◆ Choice of treatment;
- ◆ Cost of assessment or individual treatment;
- ◆ % 'drop-out' from treatment between month 6 and 24;
- ◆ Number of treatments given pa (average).

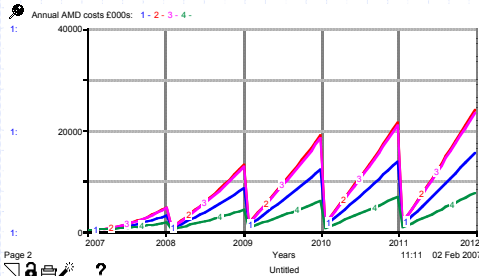
Model interface



Model outputs – comparison of treatment regimes

Regime	Final annual budget for C&M SHA @60% uptake in 2012 (£M)	Cost per person benefiting
All Macugen	£15.3M	£123,000
All Lucentis	£23.9M	£73,600
PDT plus Lucentis	£23.3M	£75,100
All Avastin	£7.3M	£22,500

Comparison of treatment regimes



Sensitivity of model outputs to assumptions

Using PDT plus Lucentis option – illustrative options to explore sensitivity with outcomes expressed in relation to final level of budget of using baseline assumptions of £23.3M

Area	Original assumption	Revised assumption	Impact on final budget
% to PDT before Lucentis	5%	14%	-£1.1M
Rate of attrition from treatment	25%	40%	-£1.2M
Uptake /presentation	60%	80%	+£7.6M
Cost of Lucentis	c.£1,700	c.£1,200	-£6.6M

Note: impact of options are not cumulative but combinations can be developed to reflect a 'scenario' of a new set of assumptions.