Technical appendix

The NICE Costing Template

NICE produced a costing template Error! Bookmark not defined. to accompany the FH clinical guideline to help commissioners assess the cost of implementation. The template was produced in 2009 using the best available data and had input from key clinical and financial professionals. NICE made a number of assumptions about the prevalence of FH, the proportion of cases already diagnosed, the number of first, second and third degree relatives of index cases that may require cascade testing, the number of these that may consent to cascade testing and the costs involved in testing, subsequent drug treatment and outpatient follow up. Most costs were taken from the Payment by Results national tariff. All drug prices were taken from the PPA NHS electronic drug tariff, or where not listed from the British National Formulary (BNF) 55th edition.

The main components of the costing template that have cost implications for service commissioners are:

- The costs of cascade testing for index cases and their relatives (including DNA testing, lipid profiling, nursing and administrative time)
- The costs of lipid lowering medication for those tested and diagnosed with FH (Simvastatin, Atorvastatin and Rosuvastatin)
- The costs of referrals to cardiologists in secondary care following diagnosis (all children need to be referred to hospital specialists)
- The costs of annual review meetings be these in secondary care

Modelling the Costs of Implementation over 10 Years

The NICE costing template modelled the costs of the implementation of FH testing for the first three years of implementation. However, the costing template assumed that only 20% of currently diagnosed individuals would present for cascade testing each year, meaning that the costs included in the NICE costing template represented the costs of cascade testing for 60% of currently affected individuals. We have extrapolated the costs to cover the 10 year costs of a fully rolled out FH cascade testing service for 100% of currently affected individuals based on the following assumptions:

- 20% of all known index individuals are invited to participate in cascade testing in each of the first 3 years (this is the starting assumption of the NICE costing template)
- 10% of all known index individuals are invited to participate in cascade testing in each of years 4 to 7
- After year 3 the annual cost of specialist referrals falls in proportion to the falling annual cost of cascade testing
- The annual cost of drug therapy, the cost of annual review meetings and the value of coronary event avoided all rise in proportion to the cumulative number of known index individuals who have been invited to participate in cascade testing.
The benefits of cascade testing for FH have been quantified in terms of the cost savings arising from avoided coronary events such as myocardial infarctions and revascularisations each year.

After Year 7, the cascade testing and specialist referral costs cease, because the model assumes that 100% of the eligible population have now been tested. However, there are on-going costs for the drug treatment and annual review meetings for those people diagnosed with FH following cascade testing.

The 10 year model was then re-run replacing the NICE cost of atorvastatin on patent (£367.74 p.a for 40mg or 80mg) with the 2009 cost of generic simvastatin (£60.36 p.a. for 80mg) to estimate how much more affordable a FH service could be after atorvastatin was off patent. It has been assumed that off patent atorvastatin would be prescribed more regularly so that instead of NICE’s prediction that 20% of FH cases would be on simvastatin, 40% on atorvastatin and 40% on rosuvastatin, there would be 20% of FH cases on simvastatin, 72% on atorvastatin and 8% on rosuvastatin.

Comparing three models of delivery

Referral to, and follow up of FH index cases, in specialist lipid and genetic clinic affects the cost of a FH service. Whereas commissioners pay directly for specialist appointments, the costs of GP appointments are not directly realised by commissioners and present as opportunity costs. Three models of delivery were considered with varying input from specialists and GPs (see figure 1 and table 2). The first model considered was a specialist-led model. This model was similar to the NICE model with the exception that a lower proportion of patients would have annual reviews in secondary care. The second model involved primary care taking responsibility for the entire adult FH care pathway. In this model a third fewer patients would be referred to a FH specialist (locally this means a lipidologist) and all patients would be reviewed annually by their GP. The final model was a “dual care” model where primary care would manage the majority of the FH cascade testing pathway. In this final model, GPs would be able to refer patients to lipidologists if they needed further advice about management, or to genetic services, when advice on cascade testing was needed because a genetic mutation had not been identified. Regardless of our three models of delivery of care for adults, all paediatric referrals would continue to follow NICE’s recommended care pathway involving specialist referral.

We identified opportunities for reducing the cost of delivery across all three models. The three models were compared in terms of their potential impact on service quality, and their costs across SHIP in the first three years of a FH service. The likely impact of reductions in costs of DNA testing during the two years following implementation, were also considered. One of the likely cost savings within the modelling for our region (SHIP) was fewer relatives receiving cascade testing, compared to a national programme, because they lived outside SHIP. This effect may reduce costs, but would also adversely affect the number of cardiac events avoided over the 10 year course of a FH service.