COSTS AND CONSEQUENCES OF LACK OF ADHERENCE TO PRESCRIBING GUIDELINES FOR STATINS IN THE UK: A VALUE OF IMPLEMENTATION ANALYSIS

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Background

Delays in the implementation of health technology have important consequences not only terms of health where it can lead to sub-optimal health outcomes, due to the use of less effective technologies, but also wastes research effort spent on establishing the effectiveness and cost effectiveness of health care technologies. To illustrate this issue, we present a case study considering the value of increasing implementation and over prescribing of statins in NHS.

Statins have been recommended as treatment for the primary prevention i.e. for people at increased risk of cardiovascular diseases (CVD), but without CVD, since 2006. Despite the recommendation by National Institute for Health and Care Excellence (NICE) and availability of substantial evidence on the effectiveness and safety of statins for substantial period of time, implementation remains far from universal. [1]

Aim

This study aims to assess the health consequences and costs of lack of adherence to NICE guidelines on the prescribing of statins for the primary prevention of cardiovascular disease in the United Kingdom from 2006 to 2014.

Method

This study considers the value of improving implementation of statins in patients recommended to receive statins and the costs of over prescribing statins to patients not recommended to receive statins by the NICE guideline from 2006 to 2014.

This study focuses on people who have high risk (≥20%) of developing CVD in 10 years who could have received statins.

Value of implementation methods are applied to consider quality adjusted life years (QALYs) lost and net monetary benefit lost due to the lack of adherence to NICE guidance using data on prescribing patterns of statins in the UK and data on the size of the total population recommended to receive statins by NICE guideline. [1,2,3,4,5]

To illustrate the impact of improved adherence of NICE guidance, two hypothetical scenarios, 100% utilisation of statins and 1% increase in utilisation of statins, were considered. A willingness to pay threshold of £30,000 per QALY gain was considered. The costs and benefits were discounted at a rate of 3.5%.

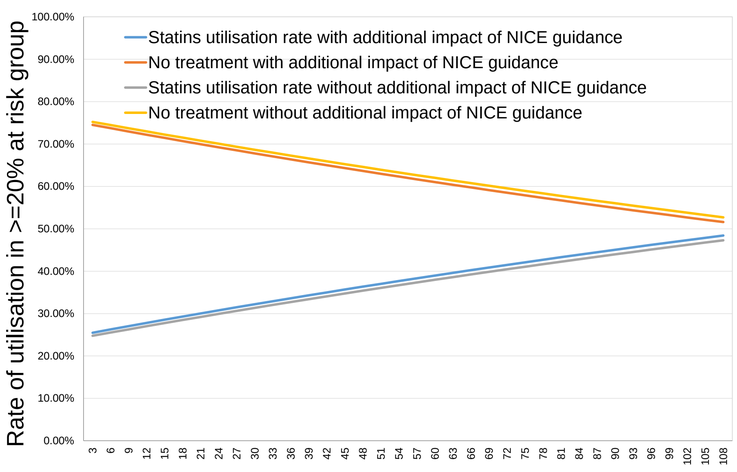
Costs burden of over prescription were estimated using data on prescribing patterns of statins in the UK, data on the size of the total population received statins and total population recommended to receive statins by NICE guideline. [1,3,4,5,6]

Results

Impact of NICE guideline from 2006 to 2014

- A gradual increase of statins utilisation observed in patients who recommended to receive statins since the NICE guideline published in 2006 (Figure 1).
- However, the rate of statins utilisation remain sub-optimal and significant proportion of the population eligible to receive statins do not receive; it is estimated that only 47% of eligible patients received statins by 2014.
- The under prescribing of statins in patients recommended to receive statins is substantial with substantial consequences in terms of QALYs.
- A 100% utilisation of statins utilisation could have been benefited from 748,687 QALYs gain over the 2006 to years (Table 1).
- The net monetary value of these lost QALYs is in excess of £19 billion over the 9 years period.
- A small of increase (1%) in utilisation of statins could have been substantially beneficial.
- This would have generated 14,734 additional QALYs could at a cost of £61 million.
- This results in additional £381 million of net monetary value.

Figure 1



Months from NICE guideline published in 2006 (2006-2014)

Table 1: Impact of increase utilisation of the NICE guideline

Scenarios	Additional QALYs gain	Additional Costs	Net monetary value of added NICE impact
Effect of 100% utilisation of statins	748,687	£3,081,973,282	£19,378,633,890
Effect of 1% increase in utilisation of statins	14,734	£60,652,248	£381,365,314

Impact of over prescribing of statins from 2006 to 2014

- The total costs to the NHS of over prescription were between £80 million and £117 million per annum, with uncertain benefits in terms of cardiovascular events prevented and uncertain cost-effectiveness.
- There was wide scale overprescribing of statins in patients who were not recommended to receive by statins (Figure 2).
- The over prescription decreased gradually as an effect of increasing adherence of NICE guideline.
- However, the proportion ineligible to receive statins in 2014 remained high.
- The estimated cumulative burden of statins over prescription cost is about £936 million (Figure 3).

Figure 2

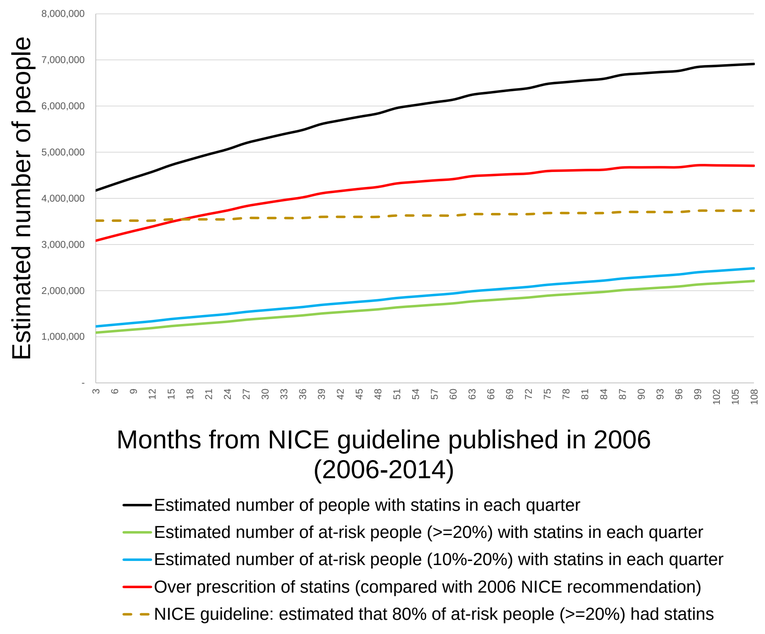
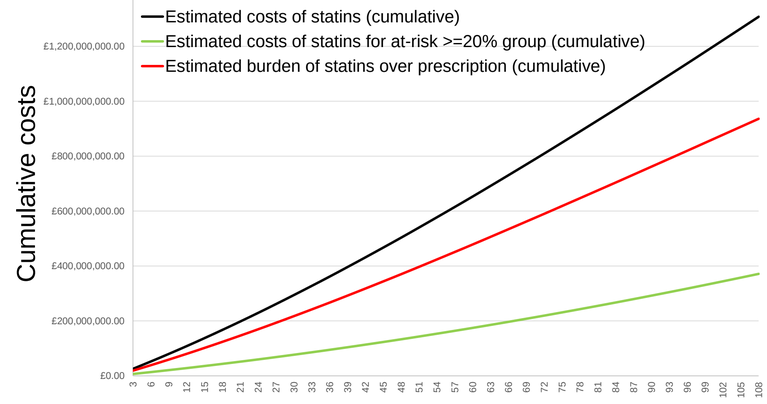


Figure 3



Discussion and Conclusions

- Lack of adherence to NICE guidance on the prescribing of statins for the primary prevention of cardiovascular disease has significant consequences both in terms of health and NHS budgets.
- There is considerable value to be had from programs aimed at encouraging greater adherence to NICE guideline on the prescribing of statins.
- Over-prescribing of statins to patients not recommended to receive statins in 2006 to 2014 was widespread and had significant cost implications to the NHS with uncertain benefits.
- Stains are associated with some long-term risks such as increased risk of type 2 diabetes. Overprescribing potentially also has negative consequences for patient health where reduced CVD risk is out weighted by adverse events.
- Interventions aimed at increasing the utilisation of stains in eligible patients and reducing overprescribing have considerable scope to be cost-effective.

Research in progress

Prospective analysis to assess the impact of the updated NICE guideline on Statins uses for primary CVD prevention (published in 2014) is in progress.

References

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