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NICE implementation uptake report: Smoking cessation drugs

NICE implementation uptake reports provide information on national trends and activity associated with recommendations in NICE guidance.

Overview

Overall, the numbers of prescription items for NRT and bupropion have fallen since 2006. This coincides with an increase in the number of prescription items for varenicline, which was first marketed in the UK in December 2006 and subsequently recommended by NICE in July 2007. In the 12 months to November 2009 the prescribing cost of smoking cessation drugs in primary care was £61,487,877, an increase of 10% compared to the previous 12 months. While bupropion decreased in volume by 18%, varenicline and NRT increased in prescription items by 19% and 8% respectively.

Both the proportion of patients prescribed each drug and the market share by prescription cost, showed a considerable decrease for NRT and a slight decrease for bupropion. This coincides with a large increase in the uptake of varenicline. Varenicline has increased its market share level at a faster rate than anticipated in the NICE costing report. The high proportion of patients offered a smoking cessation programme (over 90%) is consistent with the recommendations in NICE guidance.

NICE implementation uptake report: [Varenicline for smoking cessation NICE technology appraisal 123 & Smoking cessation services in primary care, pharmacies, local authorities and work places, particularly for manual groups, pregnant women and hard to reach communities NICE public health guidance 10]

Drugs used in smoking cessation (mental health and behavioural conditions)

[‘Varenicline for smoking cessation’ NICE technology appraisal 123 \(July 2007\)](#) and [‘Smoking cessation services in primary care, pharmacies, local authorities and work places, particularly for manual groups, pregnant women and hard to reach communities’ NICE public health guidance 10 \(February 2010\)](#)

1 Guidance

‘Varenicline for smoking cessation’ NICE technology appraisal 123 (July 2007) recommends varenicline (Champix) as an effective treatment for helping smokers to quit.

‘Smoking cessation services in primary care, pharmacies, local authorities and work places, particularly for manual groups, pregnant women and hard to reach communities’ NICE public health guidance 10 (February 2008) supersedes technology appraisal 39 smoking cessation - bupropion and nicotine replacement therapy. It cross-references and is consistent with public health guidance 1, ‘brief interventions and referral for smoking cessation in primary care and other settings’, public health guidance 5, ‘workplace health promotion: how to help employees to stop smoking’ and technology appraisal 123, ‘varenicline for smoking cessation’.

2 Context

Smoking remains the main cause of preventable morbidity and premature death in England, leading to an estimated annual average of 86,500 deaths between 1998 and 2002. It is the primary reason for the gap in healthy life expectancy between rich and poor. Among men, smoking is responsible for over half the excess risk of premature death between the social classes.

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A wide range of diseases and conditions are caused by cigarette smoking, including cancers, respiratory diseases, coronary heart and other circulatory diseases, stomach and duodenal ulcers, erectile dysfunction and infertility, osteoporosis, cataracts, age-related macular degeneration and periodontitis. Following surgery, smoking contributes to lower survival rates, delayed wound healing and postoperative respiratory complications.

Smoking is estimated to cost the NHS £1.5 billion a year. This estimate does not include other costs to government such as payment of sickness or invalidity benefits. Nor does it include the costs to industry or to individuals who smoke.

In England approximately 24% of people aged 16 and over, smoked in 2006 although smoking prevalence has dropped sharply since the 1970s, the decline has been much slower in the last decade. Recent estimates suggest that it is dropping by 0.4% a year (NICE 2008).

3 Recommendations and uptake

3.1 Recommendations

The following recommendations are taken from the NICE technology appraisal 123 and NICE public health guidance 10, and uptake can be assessed using routinely collected NHS data.

‘Varenicline for smoking cessation’ NICE technology appraisal 123 (July 2007)

1.1 Varenicline is recommended within its licensed indications as an option for smokers who have expressed a desire to quit smoking.

1.2 Varenicline should normally be prescribed only as part of a programme of behavioural support.

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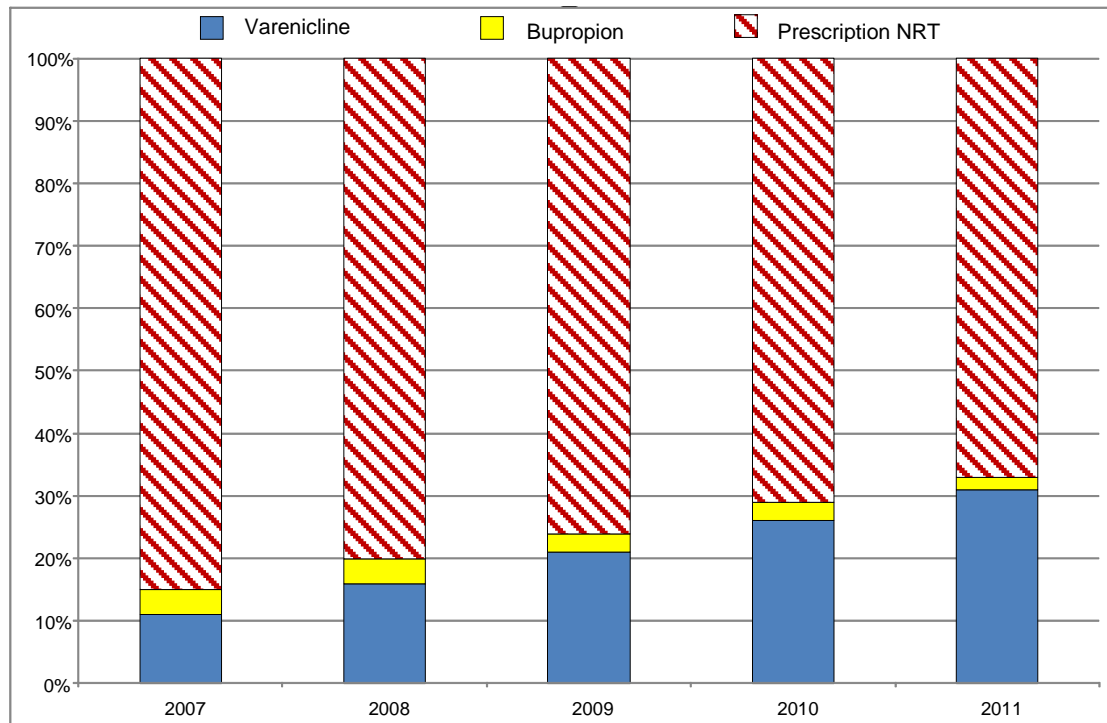
‘Smoking cessation services in primary care, pharmacies, local authorities and work places, particularly for manual groups, pregnant women and hard to reach communities’ NICE public health guidance 10 (February 2010)

Smoking cessation advisers and healthcare professionals may recommend and prescribe nicotine replacement therapy (NRT), varenicline or bupropion as an aid to help people to quit smoking, along with giving advice, encouragement and support, or referral to a smoking cessation service.

3.2 Estimated levels of uptake

It is anticipated that the market share of varenicline will increase over a number of years (figure one). The total market share in 2007 was predicted to be 11%, increasing 5% each year (NICE costing template 2007).

Figure 1 Predicted % of market share for varenicline, bupropion and NRT between 2007 and 2011 (prescription cost).

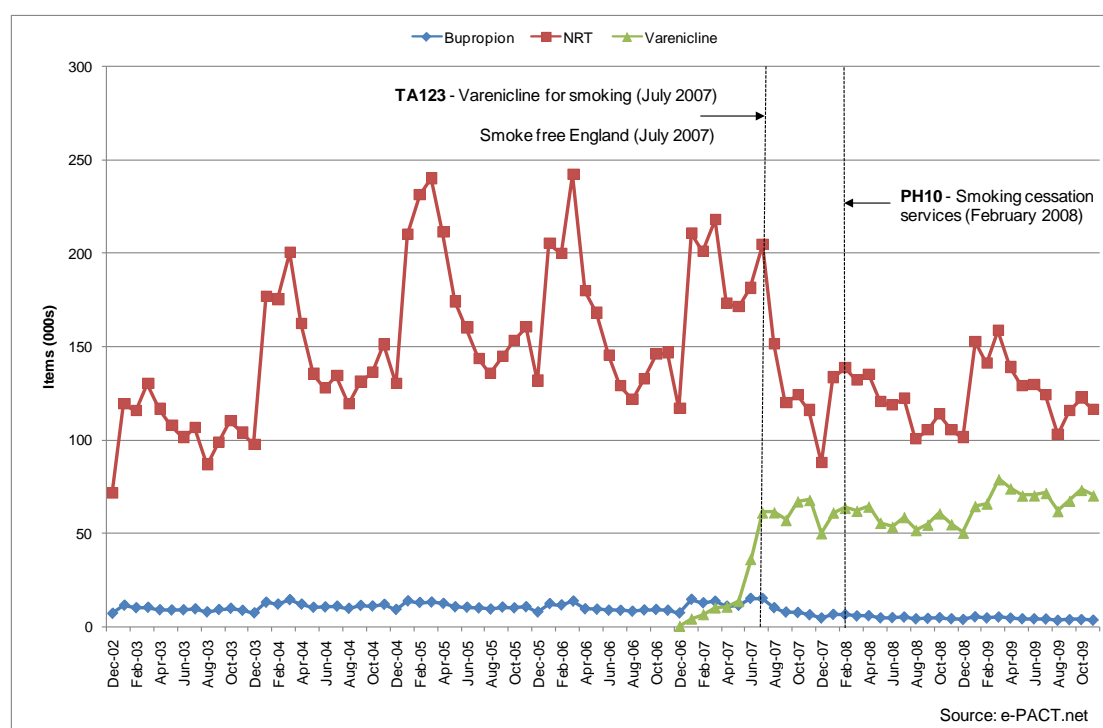


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3.3 Actual level of uptake: Prescriptions in England (at November 2009)

This section provides information on the cost and volume (number of items) of smoking cessation drugs prescribed and dispensed in primary care in England. The data was obtained from the electronic Prescribing Analysis Cost Tool (ePACT) system which is maintained by the Prescription Services Division of the NHS Business Services Authority (BSA).

Figure 2 Monthly trend in volume for bupropion, NRT and varenicline in primary care in England



Smoking cessation drugs are characterised by a high level of seasonal variation in uptake. Peaks of activity are shown in the winter months. This may be due to New Year resolutions made over this period.

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Historically, smoking cessation prescribing has fallen during the summer months. However, during the summer of 2007 the level of prescribing increased. This is consistent with the introduction of the smoking ban in England and the publication of NICE technology appraisal 123.

Overall, the numbers of prescriptions for NRT and bupropion have fallen since 2006. This coincides with an increase in the number of prescriptions for varenicline, which was first marketed in the UK in December 2006 and subsequently recommended by NICE in July 2007.

In the 12 months to November 2008 the prescribing cost of smoking cessation drugs in primary care was £56,020,770, a decrease of 7% compared to the previous 12 months. Both bupropion and NRT showed a decrease in cost and volume. Conversely varenicline showed a 74% increase in volume and 71% increase in cost.

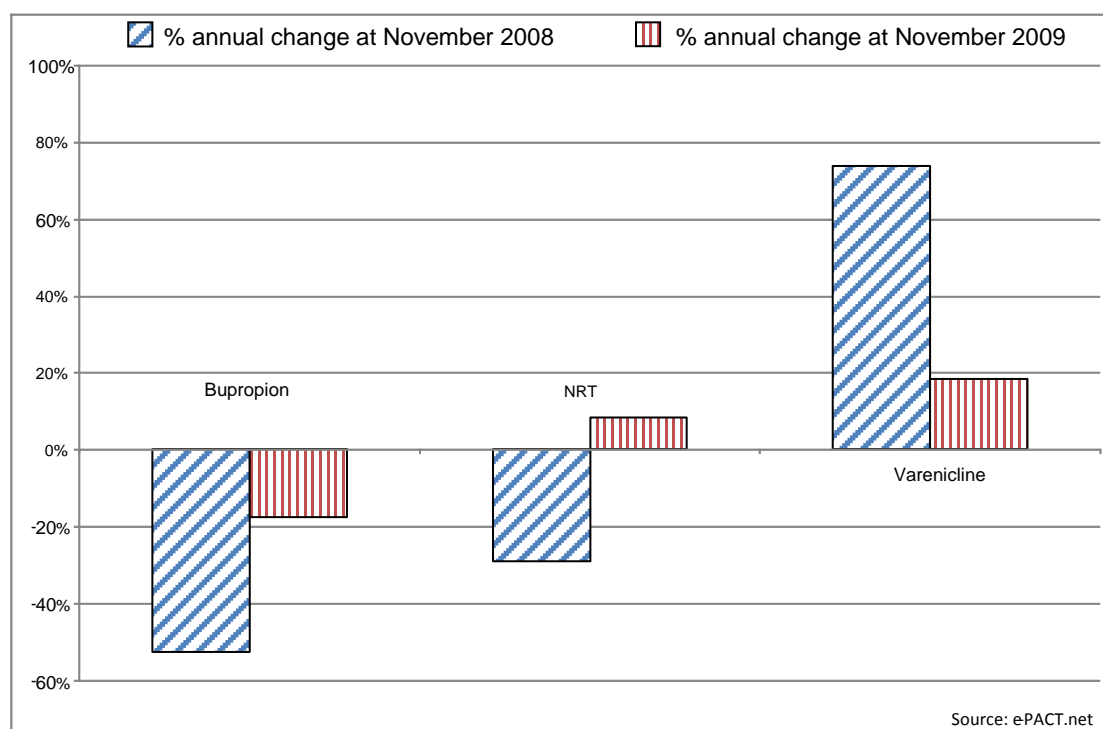
In the subsequent 12 months to November 2009 the prescribing cost of smoking cessation drugs in primary care was £61,487,877, an increase of 10% compared to the previous 12 months. While bupropion decreased in volume by 18%, varenicline and NRT increased in volume by 19% and 8% respectively.

Table one gives a breakdown of the number of items and cost of drugs for smoking cessation for the 12 months to November 2008 and the 12 months to November 2009.

Table 1 bupropion, NRT and varenicline prescribed and dispensed in primary care, in the 12 months to November 2008 and the 12 months to November 2009

Smoking cessation drug	November 2008		% annual change		November 2009		% annual change	
	Items	Cost	Items	Cost	Items	Cost	Items	Cost
Bupropion	62,306	2,263,297	-53%	-52%	51,319	2,141,116	-18%	-5%
NRT	1,430,729	29,615,200	-29%	-28%	1,548,593	31,323,992	8%	6%
Varenicline	690,787	24,142,273	74%	71%	818,659	818,659	19%	16%
Total	2,183,822	56,020,770	-14%	-7%	2,418,571	61,487,877	11%	10%

Figure 3 percentage annual change in volume for bupropion, NRT and varenicline prescribed and dispensed in primary care, in the 12 months to November 2008 and the 12 months to November 2009



3.4 Levels of uptake: Sample of anonymised patient records

ePACT data does not link to information on patients. Therefore, it cannot be used to provide prescribing information on age, sex or diagnosis. The NHS Information Centre for Health and Social Care therefore analysed data from a sample of anonymised GP patient records from 115 practices using the IMS Disease Analyzer (for details of the sample size in each study year, see appendix 2).

The analysis aimed to determine:

- the proportion of patients receiving each smoking cessation drug;
- the market share by prescription cost and
- the proportion of patients receiving a smoking cessation drug and smoking cessation advice.

The analysis does not include NRT sold over the counter or supplied under a Patient Group Direction (PGD).

The first part of the analysis looked at the proportion of patients receiving NRT, bupropion or varenicline in the study year.

Table 2 Proportion of patients (available in each study year) receiving each smoking cessation drug

Smoking cessation drug	Proportion of patients receiving each drug		
	01/08/2006 to 31/07/2007	01/08/2007 to 31/07/2008	01/08/2008 to 31/07/2009
NRT	88.5%	74.0%	69.5%
Bupropion	10.8%	7.7%	5.2%
Varenicline	4.3%	23.9%	30.4%

NB: some patients received more than 1 drug in each year

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The second part of the analysis looked at the market share by prescription cost.

Table 3 Market share by prescriptions cost for varenicline, bupropion and NRT between 2007 and 2009

Smoking cessation drug	Market share by prescription cost		
	01/08/2006 to 31/07/2007	01/08/2007 to 31/07/2008	01/08/2008 to 31/07/2009
NRT	83.8%	58.8%	53.9%
Bupropion	10.8%	6.8%	5.4%
Varenicline	5.5%	34.4%	40.7%

Both the proportion of patients prescribed each drug and the market share by prescription cost showed a considerable decrease for NRT and a slight decrease for of bupropion. This coincides with a large increase in the uptake of varenicline.

The increase in market share of prescription costs for varenicline is particularly large, increasing from 5.5% in 2006/07 to 40.7% in 2008/09. The analysis shows varenicline has increased its market share level at a faster rate than that anticipated in the NICE costing report. This was expected to be 21% in 2000. However it should be noted that there is a large proportion of NRT supplied and funded by the NHS which is not captured within this analysis, including:

- supplies made under PGDs as enhanced services (under the new pharmacy contract);
- voucher schemes, operated by some NHS stop smoking services and

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- non-prescription supplies: NRT is a General Sales List (GSL) medicine so can be provided directly by staff in NHS stop smoking services or bought over the counter.

Taking this into account the true market share of varenicline is likely to be lower than that shown here and closer to the anticipated level of uptake outlined in the NICE costing report.

The final part of the analysis sought to determine the proportion of patients who were receiving drug therapy for smoking cessation and also received smoking cessation advice in the study year.

Table 4 Proportion of patients (available in each study year) receiving NRT, bupropion or varenicline and also received smoking cessation advice.

	Study year		
	01/08/2006 to 31/07/2007	01/08/2007 to 31/07/2008	01/08/2008 to 31/07/2009
Number of patients who received at least one prescription for a smoking cessation drug in the study year	14,510	12,763	12,400
Number of patients who received at least one prescription for a smoking cessation drug and were offered smoking cessation advice in the study year.	13,374	11,677	11,385
Proportion	92.2%	91.5%	91.8%

The data show that a high proportion of patients prescribed NRT, bupropion or varenicline also received smoking cessation advice (over 90%, for all three study years).

4 Conclusions

Overall, the numbers of prescription items for NRT and bupropion have fallen since 2006. This coincides with an increase in the number of prescription items for varenicline, which was first marketed in the UK in December 2006 and subsequently recommended by NICE in July 2007.

The market share of prescription costs for varenicline is particularly large, increasing from 5.5% in 2006/07 to 40.7% in 2008/09. Varenicline has increased its market share level at a faster rate than anticipated in the NICE costing report. However a large proportion of NRT supplied and funded by the NHS was not captured within this analysis. The high proportion of patients offered a smoking cessation programme (over 90%) is consistent with the recommendations in NICE guidance.

5 Recommendations

Ongoing monitoring will help establish the longer term trend against the future forecast of uptake. Consideration will be given to reviewing the contents of this report in 12 months time.

6 Further information and references

6.1 Related NICE guidance

For information about NICE guidance that has been issued, see the website (www.nice.org.uk).

NICE implementation uptake report: [Varenicline for smoking cessation NICE technology appraisal 123 & Smoking cessation services in primary care, pharmacies, local authorities and work places, particularly for manual groups, pregnant women and hard to reach communities NICE public health guidance 10]

- Guidance on the use of nicotine replacement therapy (NRT) and bupropion for smoking cessation. NICE technology appraisal guidance 39 (2002). Replaced by public health guidance 10).
- Chronic obstructive pulmonary disease: management of chronic obstructive pulmonary disease in adults in primary and secondary care. NICE clinical guideline 12 (2004). Available from: www.nice.org.uk/CG012
- Brief interventions and referral for smoking cessation in primary care and other settings. NICE public health guidance 1 (2006). Available from: WWW.nice.org.uk/PHI001
- Workplace health promotion: how to help employees to stop smoking. NICE public health guidance 5 (2007). Available from: www.nice.org.uk/PHI005
- MI: secondary prevention in primary and secondary care for patients following a myocardial infarction. NICE clinical guideline 48 (2007). Available from: www.nice.org.uk/CG048

6.2 Costing tools

Costing tools for technology appraisal 123 and public health guidance 10 are available on the website from:

- www.nice.org.uk/costingtemplate/TA123 and include a local costing template incorporating a costing report to estimate the savings and costs associated with implementation.
- www.nice.org.uk/costingtemplate/PH10 and include a local costing template and a costing report to estimate the savings and costs associated with implementation.

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Appendix 1

Definitions used in this report

Prescribing analysis and cost tool system

This information comes from the electronic prescribing analysis and cost tool (ePACT) system, which covers prescriptions by GPs and non-medical prescribers in England and dispensed in the community in the UK. The Prescription Services Division of the NHS Business Services Authority maintains the system. PACT data are used widely in the NHS to monitor prescribing at a local and national level. Prescriptions written in hospitals but dispensed in the community (FP10 [HP]) are not included in PACT data. Prescriptions dispensed in hospitals or mental health units, and private prescriptions, are not included in PACT data.

Measures of prescribing

Prescription Items: Prescriptions are written on a prescription form. Each single item written on the form is counted as a prescription item. The number of items is a measure of how many times the drug has been prescribed.

Cost: The net ingredient cost (NIC) is the basic price of a drug listed in the drug tariff, or if not in the drug tariff, the manufacturer's list price.

Data limitations (national prescriptions)

PACT data do not link to demographic data or information on patient diagnosis. Therefore the data cannot be used to provide prescribing information by age and sex or prescribing for specific conditions where the same drug is licensed for more than one indication.

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IMS Disease Analyzer

IMS collects data from a sample of GP practice systems. Around 130 are currently delivering data and the database has about 2.6 million patient records, 1.1 million of which are currently registered. These records are anonymised and are available for analysis via a tool called Disease Analyzer.

The sample includes practices from England, Wales, Scotland and Northern Ireland and has a representative UK sample by age and sex.

Disease Analyzer data have been collected from a stable panel over a period of more than 14 years. The database holds significant clinical events relating to any period in a patient's life where summarised into computer records by the practice. As in any observational database, data entered by panel doctors may be incomplete.

Appendix 2

Anonymised patient records: sample size

The analysis was based on a sample of anonymised GP patient's records from 115 practices using IMS Disease Analyser.

In the 12 months from 01/08/2006 to 31/07/2007	1,033,365 patients
In the 12 months from 01/08/2007 to 31/07/2008	1,022,798 patients
In the 12 months from 01/08/2008 to 31/07/2009	997,271 patients