Bedside interventions for smoking cessation: A randomised controlled trial of Systematic Identification and Treatment of Smokers (SITS)

In the UK alone, nearly half a million hospital admissions each year are attributable to smoking and at the point of admission, smokers are highly susceptible to smoking cessation messages in so called 'teachable moments'. Clinical guidelines recommend hospitals should: record smoking status in the medical notes, assess desire to quit smoking, offer behavioural and pharmacological support to the patient whilst in hospital and arrange or provide follow up cessation support. In the UK, the systematic integration of smoking cessation in secondary care was recommended in clinical guidance published in 1998, and later by the National Institute for Health and Clinical Excellence in 2006

The study aimed to develop and test the effectiveness of a method of systematic identification and treatment of all smokers in a secondary care setting. The primary outcome was 4-week validated smoking cessation, with a range of secondary outcomes including the offer and acceptance of smoking cessation support whilst an inpatient, receipt of support on discharge and 6 months validated smoking cessation

Before starting the main trial, we conducted an audit of medical notes on study wards to see what was currently being recorded and delivered in terms of smoking cessation support. The audit ran this for 4 weeks in September/October 2010 and screened a total of 767 medical notes and revealed that there was no record of smoking status in 25% of records screened, varying from 15% on endocrinology wards to over 50% on renal wards. 12.5% of patients were documented current smokers; of these 76% had no documented evidence of receiving any form of advice or support to quit smoking. Ascertainment of smoking status and delivery of cessation support to patients admitted to medical wards was low, suggesting that there is room for improvement in the management of smoking among inpatients (Murray, RL, Leonardi-Bee, J, Marsh, J, Jayes, L and Britton, J, 2012. Smoking status ascertainment and interventions in acute medical patients Clinical Medicine, Journal of the Royal College of Physicians. 12(1), 59-62).

Eighteen medical wards were randomised to either intervention or control using concealed allocation and stratified by number of discharges per week to achieve approximate parity. Usual care consisted of standard procedure for wards, which should comprise brief advice by the clinician and referral to a stop smoking service but in practice this rarely happens. The intervention consisted of a dedicated smoking cessation advisor with delegated prescribing rights providing one to one counselling and pharmacotherapy as often as the patient required for the duration of their hospital stay. All smokers interested in quitting were referred to the local stop smoking service on discharge. All smokers were asked to provide a measure of exhaled carbon monoxide, and were asked to give consent to be contacted at four weeks and six months post discharge to assess smoking status and use of cessation support.

Data were analysed using a mixed effect logistic regression model to allow for the cluster design and followed an intention to treat protocol. We used continuous abstinence for cessation at 4 weeks and 6 months and missing outcomes were assumed to be smoking

Data analysis was based on 493 patients, with approximately half in each group. Participants in the intervention were younger and a larger proportion male; the greatest representation of patients were from cardiology and respiratory medicine. Less than half of patients on usual care wards were offered any form of behavioural support, which may have just comprised brief advice, or pharmacotherapy, compared to every patient on intervention wards, with nearly 2.5 times more patients accepting the offer of support on intervention wards than usual care. Over half of those on intervention wards were referred to NHS stop smoking services after discharge, compared to less than 6% on control wards. At four weeks post discharge, 38% of smokers admitted to intervention wards were CO validated as abstinent from smoking compared to 17% on control wards. At six months post discharge, these figures were 19% and 9% respectively. Cost effectiveness analysis showed that the intervention cost £1101 (95% CI £1055-£1148) per validated 4-week quit, and relative to usual care cost an estimated £26,516 (95% CI £16,379-£68,051) per QALY.

This study illustrates that a large proportion of smokers offered support for quitting are receptive to receiving treatment, and the provision of such treatment results in higher quit rates at four weeks post discharge than amongst those who receive no support. In addition, the use of stop smoking services and other forms of support are significantly higher amongst those who come into contact with advice and support whilst in the secondary care setting.

We also carried out a qualitative exploration of patient and healthcare professional (HCP) views of the intervention (n = 30 patients, n=27 HCPs). This revealed that HCP discussions generally fail to go beyond ascertainment of smoking status, or were dependent on their judgements of who would benefit most. Delivery via a specialist cessation service rather than a reliance on inpatient ward staff was favoured by patients and HCPs, with time constrains and lack of knowledge commonly cited barriers by HCPs; these barriers were also acknowledged by patients. Most patients admitted that had they not been offered support they would have either tried to quit alone, or would not have attempted due to the cost of pharmacotherapy, and few would contact services on discharge

In summary, the study design shows great promise as a means of delivering smoking cessation interventions in secondary care, and is unique in its approach of delivering dedicated support at the bedside and arranging continued care after discharge