

Supporting mental health service users to stop smoking: findings from a mixed method evaluation of the implementation of nicotine management policies into two mental health trusts

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Research article

Keywords: stop smoking, mental health, mental disorder, tobacco dependence, psychiatric settings, smoking cessation, nicotine dependence, smoke-free policy

Posted Date: February 10th, 2020

DOI: <https://doi.org/10.21203/rs.2.23010/v1>

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Version of Record: A version of this preprint was published on October 28th, 2020. See the published version at <https://doi.org/10.1186/s12889-020-09673-7>.

Abstract

Background

Life expectancy is 10-20 years lower among people with a severe mental health disorder. Most of these early deaths are due to chronic conditions, including cardiovascular and respiratory diseases. Smoking is a major risk factor for these conditions and introducing nicotine management policies has been recommended to mental health service providers. This paper reports an evaluation of introducing these policy recommendations.

Aim

To reflect on the process and effectiveness outcomes when introducing nicotine management policies, including smokefree sites, in National Health Service (NHS) Trusts providing mental health services in an English region.

Method

Process data were collected through semi-structured interviews with staff (n=51), members of partnering organisations (n=5), service users (n=7) and carers (n=2) between November 2016–April 2017. Normalization Process Theory (NPT) was used to design the data collection tools and analyse the data. A framework approach was taken with the analysis using the four concepts of NPT: coherence, cognitive participation, collective action and reflexive monitoring. Aggregate routine quantitative data indicating the smoking status of service users were collected by querying patient administration systems every other quarter between 2013 and 2017. The data were analysed to investigate quality and completeness and to monitor smoking prevalence among service users over time.

Results

The policy made sense to some staff (coherence) who 'bought-into' the idea (cognitive participation) but other staff disagreed. Although nicotine management interventions were operationalised (collective action), sometimes they were opposed. Progress was made, especially in some units, but continued to be resisted in others. Informal appraisal of progress (reflexive monitoring) presented a varied picture. Routinely collected numerical data were of limited quality due to the high proportion of missing values; although there was some evidence of reducing smoking prevalence in both Trusts.

Conclusion

Some progress has been made in terms of changing entrenched, smoking cultures into one that is smokefree on Trust sites across the region. Systems for accurate, routine data capture of continued smoking and stop smoking journeys need to be established. Perseverance and resourcing over the long-term is required to establish routine data capture and a non-smoking culture in on-site provision of mental health services.

Background

Life expectancy is 10–20 years lower among people with a severe mental health (MH) disorder (1). Most of these early deaths are due to chronic, physical, medical conditions, including cardiovascular and respiratory diseases, for which smoking is a major risk factor (1, 2). It is now clear that this inequity is not due to increased suicide rates, as previously suggested, but results from socio-economic and health care factors, including smoking behaviour (2). While smoking prevalence in the general UK population is reducing, it remains high in specific populations, including MH service users (2, 3). As a result, users of MH services, on Trust sites where there is no nicotine management policy in operation, are often surrounded by smokers (4).

The smoking culture that exists in MH services and perpetuates smoking dependent behaviours presents a barrier to those who would quit (5). In addition, the symptoms of nicotine withdrawal are often confused with increased anxiety; consequently, staff can be wary of restricting access to tobacco in the belief that this worsens the person's mental health condition (6). Those with mental health conditions tend to be highly dependent smokers, so their withdrawal symptoms are likely to be more marked (4). This resistance by staff to change their healthcare approaches is linked to several prevailing beliefs held by staff and service users alike, primarily that this population has no desire to quit and will be unsuccessful if they do try (5, 7). However, research has shown that these beliefs are unfounded; patients with mental health issues do wish to quit smoking and are able to do so, however, because these individuals often have much higher levels of nicotine dependence, they require more support in order to quit successfully (7, 8).

Resistance appears to come partly from an ethical standpoint, whereby staff feel that it is unfair to deny patients who want to smoke the ability to do so (8, 9). This is particularly salient when it is believed that the patient uses smoking as a coping mechanism and that removing cigarettes would be detrimental to their mental health, or where the patient considers the facility to be their home (10). However, where staff believed the policy would actually help patients to quit smoking they tended to view it more favourably (11).

In the UK, there has been a national policy drive to reduce smoking prevalence, mortality and morbidity in the MH population (2, 7, 12–17). Introducing nicotine management policies has been recommended to mental health service providers in the UK by government (2, 16, 18) and supported by the Commissioning for Quality and Innovation (CQUIN) framework promoted by NHS England (19), which offers financial incentives to organisations who meet the CQUIN indicators.

This paper reports an evaluation of introducing these policy recommendations in two National Health Service (NHS) trusts (A and B) providing MH services in an English region. The focus of the Trust policies is on-site only at present. The purpose of the study was 1) to explore the opportunities and challenges when introducing smokefree policies and 2) to establish their effectiveness, as evidenced from routinely collected data. The aim of this paper is to reflect on the process and effectiveness outcomes of the evaluation. It adheres to COREQ guidelines to promote transparency (20).

Method

Study design

This was a mixed method evaluation. Initially, a logic model covering inputs/activities/qualitative and quantitative outcomes and impacts was drawn up (Additional file 1 (logic model)). Interview data (work package (WP) 1) and aggregate routine, quantitative data (WP 2) were collected from two Trusts, analysed separately then combined to help understand the process and its effect on the outcomes.

Theoretical approach

We used Normalization Process Theory (NPT) to understand the issues associated with implementing these new policies and practices (21, 22). NPT has four core constructs: coherence (sense-making), cognitive participation (engagement or buy-in), collective action (activation, doing the work) and reflexive monitoring (appraisal, formal and informal) (21, 22). Using NPT allowed for reflection on the work required by individuals and organisations to introduce the intervention, how it fitted with current practice (workability) and the modifications necessary for changes to become integrated and embedded.

Recruitment

All Trust staff could participate. Staff were primarily invited to take part via adverts circulated within Trusts, except for Level 2 Stop Smoking Advisors in Trust B who were recruited via a pre-existing working group. Some staff and the members of partnering organisations were purposively sampled due to their job roles. All service users with mental capacity as designated by the Mental Health Act (23) could participate. Outpatient service users and carers responded to information sent via a local service user group, and inpatients were approached by ward staff.

Sample

Participants included staff ($n = 51$), members of partnering organisations ($n = 5$), service users ($n = 7$) and carers ($n = 2$) (See Table 1).

Frontline staff participants included an occupational therapist, psychiatrists, well-being champions, stop smoking advisors, nursing managers and ward nursing staff. Key informants were all senior Trust managers. Twenty staff were from Trust A and thirty-one from Trust B; the disparity can be accounted for in the size of the focus groups conducted with Level 2 Advisors (Trust A, $n = 4$; Trust B, $n = 14$). Participants from five partnering organisations - a member of the Strategic Clinical Network, the local tobacco control office, a service user group, the medical director from one Trust and deputy medical director from the other - were interviewed. Four service users were interviewed in a focus group (3, female; 1, male; all smokers). Interviewed individually were one service user who had been hospitalised previously (female, smoker) and 2 male, inpatient smokers; also one male and one female carer, both of whom were ex-smokers.

Data collection

Preparation and the launch for going smokefree in March 2016 had already taken place before data collection began. In WP 1, interview data were collected from November 2016–April 2017 through semi-structured individual interviews (16–127 minutes) and focus groups (around 50 minutes) by SJ, SM and HC. SJ and SM had prior experience of interviewing for public health research and conducting focus groups. Four staff focus groups were held, two in each Trust. In addition six staff were interviewed by telephone and two staff participants replied by email. Individual interviews were conducted face-to-face, on-site with key staff (Trust A, $n = 7$; Trust B, $n = 4$), except for five who were interviewed by telephone. Representatives from the local tobacco control office and a service user group were interviewed, one face-to-face and one by telephone. A teleconference was conducted with the senior manager in charge of the implementation in each Trust. A focus group was held on-site with service users in Trust A ($n = 4$). Staff were present while in-patient service users were interviewed. Three inpatient service users (from Trust B) were interviewed individually face-to-face and two carers (one from each Trust) were interviewed, one on-site and one by telephone. NPT was used to inform the individual interview schedules and the service user focus group schedule was based on the behaviour change wheel (24) (Additional file 2: Interview schedules). All interviews and focus groups were digitally recorded with the written consent of the participant(s).

In WP 2, routinely collected data on smoking status were collected prior to and contemporaneously with interview data. Other data identified on the logic model were not available. Aggregate data were collected for every other quarter (three-month period) between 2013 and 2017, by querying the Trusts' computer-based, patient administration system (PAS).

Data analysis

In WP 1, interview data were transcribed and transferred into QSR International's NVivo 10 Software for qualitative data analysis. Field notes relating to each interview were written up. Feedback provided via email and any materials used in focus groups (e.g. post-it notes) were also written up and transferred into NVivo 10. A framework approach was taken with the analysis using the four core concepts of NPT: coherence, cognitive participation, collective action and reflexive monitoring (21, 25). Inductive analysis was also used when researchers became aware that other themes were emerging. HC coded all interview data. SM independently coded interviews, then checked coding with HC, to increase reliability, resolving any discrepancies through discussion. Codes were mapped into themes and subthemes jointly by SM and HC and approved by SJ. [Additional file 3: Coding Framework]

In WP2, within each quarter, the proportion of inpatients with a valid measure of smoking status, and the proportion of inpatients that smoked, was calculated, separately, for admissions, discharges and all inpatients. Each group was subdivided further, by age band, gender and broad ethnic group and reported here using the Transparent Reporting of Evaluations with Nonrandomized Designs (TREND) checklist (26).

Results

Context

There was an extensive planning and preparation period in both Trusts, prior to implementation of nicotine management policies. This included a stakeholder event, the introduction of the Lester Tool to improve routine data collection on physical health (27) and, in Trust A, adoption of the *Preventing ill health by risky behaviours (Tobacco)* CQUIN (19).

Process evaluation (WP1)

Coherence

The findings suggest that some staff were satisfied that introducing smokefree policies was in the patients' best interest.

It was quite clear why we were going smokefree, it was to improve the health of the patients, and that patients were dying 15-20 years before the rest of the population, so I felt we had a duty of care for the patients.

Frontline Staff, Trust A

This is a NICE public health guideline and as an organisation we had a duty to implement it.

Key Informant, Trust A

Other staff, although they understood the motivation for smokefree policies, did not agree with the reasoning behind them. In particular, suggesting that they viewed smoking as just one factor amongst others, which contributes to the reduced life expectancy of MH services users.

I think there's much more we can do and we can look at in terms of health promotion, in terms of alternatives to prescribing antipsychotics, in terms of polypharmacy, in terms of all those things that we do that have a part to play in people's life expectancy being so much lower, it just feels like we've pinned everything on smoking and I think smoking's part of a number of processes that are leading to people living less.

Key Informant, Trust A

Some staff thought it was unethical and contradictory, in terms of insisting patients quit, rather than waiting until they felt ready, as expressed in this focus group:

... I think part of it is you're kind of taking the contemplative state away from people—even though we did try to prepare people as much as possible for the smoking ban coming in and did do a lot of work—but still that decisions kind of being enforced on them.

... They haven't chosen to start with...

...and the smoking cessation training again, a huge bit of it is around the contemplation stage.

Facilitator: Right that's interesting isn't it, so in some ways are you saying the policy doesn't really...

... Reflect smoking cessation advice.

Facilitator: Yeah.

... Because a big part of it's about behaviour change and being ready to change, we were trying to get people to stop smoking who weren't ready to.

Frontline staff, Trust B

Cognitive participation

Buy-in

Preparation processes were often reported as good, especially regarding hearing experiences of introducing smokefree policies from other Trusts. Although there were mixed levels of buy-in, they were reported to have increased over time in both Trusts. Staff on secure units bought into the policy more than those on non-secure units.

I think we were so tuned into this coming in and happening that, I would say my practice hasn't changed because we were already onto this before the policy was ever put in place.

Frontline Staff, Trust B

For staff involved in the short-term care of patients, they more frequently reported concerns that the policy would not achieve the long-term benefits it purported to. Sufficient resource in terms of smoking cessation leads and Nicotine Replacement Therapy (NRT) were allocated and appeared to be securely funded.

Enrolment

Myth-busting was seen as crucial to buy-in and a central benefit of staff training. There were reported barriers to enrolment into the changes, mainly by frontline staff, in relation to communication of policy and implementation for a variety of reasons (e.g. senior staff not passing on information, individuals not accessing disseminated information). Ongoing training, to all groups of staff, was seen as an important way to overcome these barriers to uptake, with some stating that evidence of improvement would potentially change the opinions of those resisting the policy. Applying the policies when a patient was in an acute crisis was often perceived as inappropriate and on occasion actively opposed by staff.

Senior support

Fundamental to buy-in was seeing senior members of the organisation backing the policies; this gave the implementers the authority to act.

I think the other thing to say is we were, because the way the project was led and it was led by our medical director, there was buy-in from the beginning from senior members of the Trust really so [...] our exec management team, everybody had kind of bought in at that level which then fed down, erm kind of through the Trust really.

Key Informant, Trust A

Where this was not done, there was anecdotal evidence of delays in progression. Critical to success was having a subgroup structure that was prioritised by members, tightly managed and well-focused, with key decision-makers round the table. This enabled implementation of the policies more effectively. Where delegation of responsibility occurred, it could lead to further delays, with decisions having to be referred back to the senior manager. Middle management support influenced the outcomes; buy-in at this level was not always translated to the frontline, who felt they lacked the authority to insist on the changes. A lack of consequences for non-compliance by staff was also reported. Enabling access to training was recognised as important in supporting the nicotine management message and overall implementation, however this varied between Trusts.

Collective action

Planning

Communication of the reasoning behind the decision to bring in smokefree policies was seen as key in bringing all stakeholders on board. Many participants had found an early stakeholder event useful. Nevertheless, some participants thought that service users, carers and frontline staff were insufficiently consulted during implementation. They expected to be able to discuss the pros and cons of the process and were unhappy with decisions being made at a senior level and handed down rather than co-created.

Personally I think it would have been better if there was some consultation or at least early on a lot of transparency about why that decision had been made.

Partner Organisation Representative

Adequate time was thought to have been given to prepare for the going smokefree deadline, although there were a lot of hurdles to overcome to meet it. As well as planned communication strategies, informal communication routes were found to have been instrumental in disseminating the policy to patients and carers. Efforts were made to let patients in the community know about the introduction of the policy, however they were often ill-prepared on admission.

Implementation

Certain locations and units were reported as more successful than others in implementing smokefree policies. It was suggested that this was due to the length of stay or security level of the ward. It was clear that careful use of language was required to encourage smokefree policies to be seen positively. Consistency of enforcement was another key to success. Ambiguity in the policies over patients' leave compounded any inconsistencies. Several other significant barriers to action were identified by participants, for example: lack of enforcement, lower staff levels of buy-in to the policy. Patients' leave from the ward was seen as a particularly difficult time to manage, when the policy was often likely to be challenged. Participants talked about the importance of avoiding the need for enforcement by changing the culture. Visitors entering open sites and smoking in the grounds was a particular challenge. There were many details that needed to be worked out following the introduction of the policies; suggesting a requirement for ongoing review and response in a timely manner.

Community links

Communication from healthcare professionals to patients in the community about changes to Trust policy was reported as weak. Although it was recognised that preparing smokers pre-admission was preferable, broken communication channels resulted in staff having to tell patients upon admission that they could not smoke. Similarly, patients admitted from prison reportedly had smuggled in smoking materials. Communication on discharge back into the community was also reported as incomplete, with receipt of messages to healthcare professionals responsible for providing smoking cessation services unclear.

There's nothing on discharge yet, we did have a whole referral process in place - a simple form they complete and send it electronic - it's never been used so we know we've got a problem with our staff on the wards who don't refer.

Key Informant, Trust A

With variable smoking cessation services in the community, staff expressed a concern that patients would simply be abstaining from smoking as opposed to making a long-term, lifestyle change.

Reflexive monitoring

Positive aspects

There was a view that staff had been more successful in quitting smoking since introducing the smokefree policies. Where the policy was successful, patients' MH was seen to have improved as they were no longer experiencing nicotine withdrawal symptoms; this had led to a more relaxed atmosphere on the wards, less anxiety in patients, and more time for therapeutic activities. In addition, patients felt a sense of achievement following their successful quit attempt.

I think for some of our patients because it's actually a learning disabilities hospital but obviously a lot of them have mental health issues as well, it increased their confidence and self-esteem. A lot of our patients had poor self-esteem and they actually achieved something by stopping smoking, they achieved something that was extremely difficult and I think it made them think, if we can do that we can do other things as well.

Frontline Staff, Trust B

Negative aspects

Several, unintended, negative consequences of introducing smokefree policies in Trusts were expressed by participants, such as an increase in patients smoking indoors:

Because we've implemented a policy which is driving the smoking underground [...] Now we're having staff having to go into rooms that are filled with smoke and therefore it's become a second-hand smoking issue.

Key Informant, Trust B

Other reported consequences included raised staff stress levels, increased violence and aggression, concerns over ethics and interactions with medication, perceived concerns over the reaction from the external regulator (Care Quality Commission), divergence of opinion between staff and 'workarounds' to avoid compliance instigated by patients and staff. It is unclear if these are substantiated by Trust data from alternative sources.

Where patients had informal leave, there were concerns about them smoking off-site or of being exploited by local individuals. Although this falls outside the remit of the policies and this evaluation, it is important in terms of holistic care for patients and the impact on-site e.g. it undermines patients' ability to abstain and staff's attempts to support them, it potentially increases difficulty in monitoring antipsychotic drug levels. Staff expressed uncertainty over what was acceptable in nudging patients toward changing their smoking behaviours.

Mixed aspects

Whilst in some wards the smokefree policy was introduced relatively easily, in others, staff participants thought there was an increase in challenging or aggressive incidents. The therapeutic relationship was reported as benefiting in some cases, and being damaged in others, by the smokefree policies.

Additional themes

Enforcement

Enforcement was a key theme that arose organically from the data, it was both a major concern and a signifier of contradictory expectations. Staff participants discussed confusion and frustration regarding *how* the policy was to be enforced successfully.

I thought "Well, I what the hell's the point of bringing it in? If you can't enforce a policy what you bringing", and I had this meeting with a few erm, people quite high up and that was one of the things they said, they said that legally we can't enforce it and we all sat and went "Well why have you brought it in."

Key Informant, Trust B

Where successful enforcement occurred, it tended to be in settings where patients were used to their behaviours being restricted. Some frontline staff implementing the policy felt that it was at odds with their professional values of ensuring the patients' best interests.

I think that we're affecting choice, we're just enforcing something that goes against the grain of what we do as nurse.

Frontline Staff, Trust A

Visitors to the Trust sites, who smoked, also created a challenge to staff implementing smokefree policies. They may be members of the public crossing the site or visitors accompanying outpatients or visiting inpatients. Many of them brought smoking equipment on-site with them.

Risk

Staff who reported the notion of risk noted that this applied to both staff and patients themselves. Several staff noted concerns about how insisting a patient stop smoking could compromise their own safety (either from aggression or fire). However, some opposite views were also expressed, that there was no noticeable increase in risk from aggression or fire. Staff talked about how they felt caught, weighing up the risks between compliance and non-compliance with the policies. Monitoring risk from the interaction between medication and smoking was seen by staff as necessary but the risk was rarely realised, in their

experience. Electronic cigarettes were seen as a potential risk by Trusts, who imposed different and changing restrictions on their use and kept them under review. The wider public were also reported to be at risk e.g. from caches of smoking paraphernalia being found off-site.

Smoking cessation resources

Policies set out arrangements for provision of NRT to smokers shortly after admission, and were generally adhered to, but there was uncertainty sometimes about access and administration. NRT was not universally accepted by patients as an alternative to smoking, who expressed dislike for NRT products. However, some patients who had the opportunity to try different products ahead of the deadline, tended to be more accepting. Smoking cessation behavioural support was reported as variable between Trusts and sites, partly due to challenges in delivering training.

Patient experience

Successful behaviour change

Patients with learning disabilities in secure settings enthusiastically reported quitting successfully, as did a carer, when retelling the experiences of a service user who also quit.

Fears and unsuccessful change

Conversely, patients admitted to an acute or informal setting felt pressure and judgement increased but enforcement and successful quits decreased. Quits begun on-site were not seen as well-supported in the community, with patients expecting a negative impact on sustainability. Patients and carers reported that short-term admission was seen as a time of abstinence rather than quitting altogether, which is consistent with the nicotine management focus of smokefree policies.

Coherence and cognitive participation

Both benefits and concerns were recognised. Overall patients and carers understood the policy and the practical implications. Some patients believed that previously they would have resisted the policy but now realised they had benefitted overall. However, there were doubts expressed by some with regard to the reasoning for going smokefree, as it was still seen by them as a negative experience for patients.

Planning and implementation

Positives of stopping smoking with regard to physical health, environmental improvement, social interaction and a personal sense of achievement were expressed by patients/carers. Negatives including psychological stress, impact on social interaction, lack of smoking cessation support in the community and the construction of smoking as deviant were all reported by patients/carers. There were anecdotal successes but also continued resistance to the policies.

Effectiveness evaluation - baseline smoking status and prevalence (WP 2)

Routine monitoring, Trust A

In both Trusts, PAS recorded smoking status on admission, clinical review and discharge. No other data describing the process of supporting service users to abstain from or give up smoking was captured e.g. brief advice, offer and acceptance or refusal of NRT, offer of and acceptance or refusal of stop smoking support.

In Trust A, the proportion of inpatients with an unknown smoking status was above 20% among the three overlapping patient groups (admissions, discharges and all inpatients) throughout most of the study period. Because of this, it is not possible to assess whether smoking prevalence among inpatients changed over the period of the study.

Routine monitoring, Trust B

In Trust B, the proportion of all inpatients for whom smoking status was unknown increased over the period of the study from 19% to 36%. However, among admissions and discharges the proportion of inpatients for whom smoking status was unknown was much lower throughout the study period (Figures 1 and 2). At Q3 2016/17 the proportion of 'unknowns' was only 13% among admissions and 9% among discharges.

In Trust B, during an 18-month period at the end of the study in which the proportion of 'unknowns' remained stable, the proportion of inpatient admissions that were current smokers fell from 51.1% (95%CI 47.1–55.2, 15% unknowns) to 42.0% (95%CI 37.9–46.1, 13% unknowns). Similarly, the proportion of discharges with a current smoking status fell over the same period from 50.2% (95%CI 46.3–54.2, 9% unknowns) to 43.6% (95%CI 39.6–47.7, 9% unknowns).

Within Trust B, smoking status was also tracked over a 12-month period for a cohort of inpatients admitted in Q1 2016/17 (the final year of the study period, immediately after introduction of a smokefree policy in March). The data tracked smoking status from admission through to first discharge or latest valid measure of smoking status at Q4 2016/17 if inpatients were still receiving care at the year end. Smoking status was monitored separately among the group that were current smokers on admission (n = 495) and the group that were non or ex-smokers on admission (n = 591).

At the start of the year, excluding those whose smoking status was unknown (14% of all admissions), 45.6% (95%CI 42.6–48.6) of those whose smoking status was known were current smokers. At first discharge or year end, whichever was earlier, 90.9% (95%CI 88.0–93.1) of all smokers on admission remained

current smokers. The proportion that remained smokers did not vary significantly between men (89.1%) and women (94.1%). Among non-smokers or ex-smokers on admission, 2.9% were current smokers on discharge or at year end. Again, the proportion did not vary significantly between men (3.4%) and women (2.2%).

The net effect on smoking behaviour across the year was that the proportion of all inpatients in the cohort that were known to be current smokers had fallen from 45.6% (95%CI 42.6–48.6) to 42.8% (95%CI 39.9–45.8), but the fall was not statistically significant.

Clinical audit, Trust A

Although evidence of any change in smoking prevalence in Trust A from the routine monitoring of smoking status was inconclusive, it had implemented a baseline clinical audit of smoking status in 2015 and followed this up with subsequent annual audits in January 2017 and January 2018. Each audit involved a detailed inspection of patient clinical records and drew on textual data fields within patient clinical notes as well as the field within the PAS that held smoking status. The audits reported smoking prevalence among all adult inpatients of 43% in 2015 (n = 689), 28% in Dec 2016/Jan 2017 (n = 667) and 21% in Dec 2017 / Jan 2018 (n = 684). In addition, the audit 2017/18 audit reported on key processes which support service users who smoke to give up:

- 98% of inpatients who smoke offered very brief advice
- 30% of smokers referred for individual or group behavioural support by trained advisers either within the Trust or in the local community
- 89% of smokers offered NRT
- 97% of smokers offered NRT or a free disposable e-cigarette within 30–60 minutes of admission
- 9% of patients who smoke expressing an intention to continue to abstain from smoking after discharge from inpatient care
- 1.4% of patients who smoke setting a quit date while an inpatient.

Discussion

In the UK smoking has been banned in enclosed public places and prevalence overall has been falling (28, 29). Extending this trend into the MH population necessitates a significant organisational and cultural shift for Trusts (30, 31). The study logic model set out the hypothesised process for Trusts to become smokefree organisations. The identified inputs, activities and outputs to reach this outcome, were explored with participants and through analysis of routinely collected, quantitative data. The study found that implementation of smokefree policies had met with a mixed response. Effectiveness outcomes, as measured within the routinely collected data, remained inconclusive, although there was some evidence of reduction in smoking prevalence in the last 18 months of the study period within one Trust. Audits based on detailed inspection of clinical records, including textual notes, within the other Trust evidenced substantial reductions in smoking prevalence not evidenced in the routinely collected data. However, the cost and resource implications of the audits suggest that they are not sustainable as a regular exercise going forward.

Prevalence of smoking in MH

Despite a policy drive to actively integrate this public health initiative and reduce smoking prevalence, mortality and morbidity, the same pattern of reducing smoking prevalence, as seen in the general population, could not be shown among MH patients on admission. Notably, within Trust B, in the last 18 months of the study, smoking prevalence among admissions fell from 51% to 42%, while the proportion of unknowns remained constant. However, smoking status among 13% of admissions was unknown throughout this period, so this result is inconclusive.

Neither could reducing on-site smoking prevalence, on introducing nicotine management policies into MH trusts, be confidently established, based on routine data collection processes. Looking at the logic model, it can be seen that this resulted - in part - from a lack of reliable outcomes data, as requested by the model. This situation led to questioning by staff of the effectiveness of the policies and supported opposition arguments, by the absence of data to the contrary. Benefits of on-site MH smoking bans have been demonstrated previously but the issue of winning over staff remained (8, 9, 11).

Requirements of normalization

According to NPT, coherence and cognitive participation are required to progress to action and normalization (21). Nevertheless, these concepts were often reported as lacking. For example: we found that the idea lost coherence for patients when they wanted to quit but lacked the confidence they would succeed. Self-efficacy is known to be a requisite of behaviour change (32) and, without the self-belief in the possibility of change, they expressed an unwillingness to engage. Staff perspectives on policy coherence affected their level of buy-in to implementation of the policies too, with a persistent belief in pro-smoking 'myths' amongst some staff. Although systems were being put in place to enable and facilitate harm reduction, many staff were not fully proactive or supportive of the nicotine management policies. These findings were similar to those of Cookson et al. (33), Malone et al. (5) and Mwebe (30).

Threats to normalization

To increase coherence and cognitive participation amongst staff and patients the myths and misconceptions about introducing nicotine management policies and quitting smoking require addressing. Our findings show similar beliefs to those previously identified but which are challenged within the literature; misconceptions such as:

- The 'right' to smoke—(9, 11)
- Smoking as self-medication, helps with coping (6)
- Smoking breaks are acceptable - (9, 34–36)

- Quitting increases violence—(11, 37)
- Not the responsibility of MH staff to support patients to quit - (5, 9).

Specific threats to normalization reported by participants included: lack of consistency of implementation, lack of diversion/alternative activities for patients, lack of staff skills to deal with enforcement, lack of seamless transition between hospital and community.

Promoting normalization

Implementation science talks about the 'active ingredients' of an intervention that bring about this normalization process (38). These need to be operational for the outcomes to be fully achieved (38). Participants reported the active ingredients in relation to implementation of the nicotine management policies to be:

- senior support
- effective leadership
- legitimisation
- prioritisation
- continual resourcing
- decision-making sub-groups with sufficient authority
- effective champion
- thorough preparation
- initial and ongoing skills training
- positive non-smoking discourse
- inclusive and solution-based approach
- open communication channels
- perseverance in enacting the policies
- ongoing review of systems and processes
- monitoring smoking-related incidents
- feedback 'wins' from implementation process to staff and patients.

Role of context

It has become increasingly apparent that successfully introducing complex interventions, such as nicotine management policies across a region, is highly dependent on context (6, 38, 39). Different contexts exist between organisations, between sites, between units, between patients and staff (40). Context may explain some of the relative ease and effectiveness when introducing a smokefree environment into learning disability and secure units, compared with units caring for acute and short-term stay patients. For example: it was reported that staff found it easier to prepare the patients and offer continuity where there was lower patient turnover, as in these units. Similarly, in high security units, insisting upon compliance was seen as more consistent with existing practice.

Organisational and cultural shift

It is a decade since Ratschen et al. identified many of the smoking norms in MH facilities that need to change if smoking prevalence is to be reduced; however, according to our findings and other research, many of them remain (7, 9, 30, 34). Staff and patient attitudes are often subtle and unacknowledged, while underlying beliefs and subsequent actions lean towards maintaining the status quo (40, 41). Stein and Stein calls this 'learning anxiety', which arises as a result of 'the realization that new ways of perceiving, thinking, feeling and behaving may be very hard to learn' (p324)(42). Change requires effort and people may be concerned about the cost to themselves (41, 42)(Greenhalgh et al., 2004; Stein and Stein, 2017); as the National Centre for Smoking Cessation and Training says, "The therapeutic management of boredom requires creativity and imagination, facilitating smoking requires neither" (13).

We found that creating cultural change and embedding new policies takes time, personal investment and overcoming resistance to change. This is supported in the literature (40–42). Communication of an evidence-based view was found to be essential to bring about this shift—and introducing the active ingredients mentioned above had the potential for integrating and embedding the change e.g. backed by senior management, embedded through staff training, reinforced by an effective champion, well-resourced, with co-created solutions and knowledge exchange between stakeholders. Similar findings are reported by Greenhalgh et al. (41), Mwebe (30), Rushmer et al. (43) and Stein and Stein (42).

Sustainability

Our findings show that, for nicotine management policies to be sustainable, they require an extended period to embed and normalize. Requirements included: legitimised and efficient decision-making and communication processes, access to ongoing, good quality training that teaches effective methods, develops a supportive discourse, consistency of enforcement and creates a smooth transition between community/prison and hospital. Reflexive monitoring within NPT demonstrates the importance of keeping the implementation process under review.

More detailed, high-quality data requires entering onto the PAS to capture the effectiveness of nicotine management and smokefree policies to support a widespread change in mind-set. Specifically:

- smoking status captured for all service users at admission, clinical review and discharge to reduce the proportion of records where smoking status is unknown
- data captured describing a wider range of processes that support service users to give up smoking e.g. brief advice, offer of NRT and offer of structured stop smoking support.

Strengths and limitations

The value and usefulness of quantitative measures that rely on routinely collected datasets alone, especially in complex health systems, have been questioned (44). Equally, qualitative data alone focuses on individual perspectives and may miss the overall picture (38). This study combines effectiveness data with a process evaluation which blocks in some of the missing pieces from single method studies and strengthens the conclusions (38). However, this study is limited by the routine data that was available and number of patients who participated (meaning that data saturation was not reached). Environmental contexts were limited to various sites and departments in two Trusts within an English region.

Conclusions

Implementation science can contribute towards understanding the barriers and facilitators to implementation in complex healthcare settings by using interpretive theories and methodologies, such as NPT, combined with quantitative data. Inroads have been made in terms of changing an entrenched, smoking culture into one that is smokefree on Trust sites; however, there remain variations across specialties and many challenges to full implementation. Once there is sufficient buy-in to a non-smoking culture it is anticipated that the issues relating to enforcement and perceived risk will diminish. Sufficient systems for accurate, routine data capture of continued smoking or stop smoking journeys are not yet established in participating MH trusts. More detailed, high-quality data requires entering onto PAS, to capture the effectiveness of nicotine management and smokefree policies. Perseverance over the long-term is required to establish smokefree sites in participating MH trusts, supported by robust, routine, quantitative data collection systems.

Supports what is already known: Smoking cessation for psychiatric populations is more challenging than for the general population; however it is beneficial in terms of physical health and is achievable with appropriate support (45).

What does this paper add? New knowledge in terms of the challenges that persist at this time, change is slower than expected, and even with a societal ban, pro-smoking beliefs persist. Routine data is currently insufficient for purpose; reliable identification of smoking status at baseline and measure of change is required.

Recommendations

Improve the completeness of data recording of smoking status and gather data on a wider range of care processes that support service users to give up smoking.

The inconclusive and slow progress made during the implementation highlights the need for further research into the details of normalizing smokefree cultures in MH settings.

Sharing of experience is recommended; examples of success in other Trusts was a powerful way to motivate and inform.

Feedback of results from local Trust data has the potential to support normalization.

Abbreviations

CQUIN - Commissioning for Quality and Innovation

MH—Mental Health

NHS—National Health Service

NPT - Normalization Process Theory

NRT—Nicotine Replacement Therapy

PAS - Patient Administration System

TREND - Transparent Reporting of Evaluations with Nonrandomized Designs

WP—Work Package

Declarations

Ethics approval and consent to participate

Ethical approval for the process evaluation was given by Teesside University, School of Health and Social Care, Research Governance and Ethics Committee (Study Number 095/16) and research development approval was received from both Trusts. Informed written consent to participate was obtained from all

participants prior to interview. Approval was given by information governance managers in both Trusts for routinely collected, anonymised data to be used in the study.

Consent for publication

N/A.

Availability of data and materials

The qualitative dataset used and/or analysed during the current study are available from the corresponding author on reasonable request. The executive summary for the study report is available at:

<http://www.fuse.ac.uk/askfuse/outputs/Evaluation%20of%20the%20introduction%20of%20smokefree%20policies%20in%20two%20North%20East%20NHS%20Executive%20Summary.pdf>.

Competing interests

No competing interests to declare.

Funding

This research project was jointly funded by Public Health England (PHE) (North East), Tees, Esk & Wear Valleys NHS Foundation Trust and Northumberland, Tyne & Wear NHS Foundation Trust. PHE was represented on the steering group and contributed to the design, analysis and interpretation of the data and writing of the manuscript for WP 2. The Trusts were represented on the steering group and agreed the study design but had no role in conducting the research or writing the manuscript.

Authors' contributions

SH and AB developed the idea which originated with Claire Sullivan (CS) and was first developed by Janet Shucksmith (JS) and Anna Christie (AC). CS gained funding for the study. SH, SJ, SM and AB contributed to the study design. All authors contributed to the development of the methods and interpretation of the data. SJ, SM and HC collected data; SM and HC conducted the analysis. SJ wrote the manuscript with contributions from all authors, who commented on drafts. All authors have read and approved the manuscript. SH and SJ are the guarantors of the study.

Acknowledgements

We were alerted to the opportunity of a study through Peter Van Der Graaf at AskFuse (<http://www.fuse.ac.uk/askfuse/>). We would like to thank participating hospital Trusts and their staff and service users for their contribution without whom it would not be possible to carry out the research. We also acknowledge the input of Janet Shucksmith (retired professor, Teesside University), Claire Sullivan (PHE) and Anna Christie (PHE) in setting up the study. We would also like to thank the members of the study steering group for guiding the work.

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Table

Table 1: Participants

	TRUST A	TRUST B	Partner Organisations
Frontline Staff	13	27	N/A
Key Informants	7	4	N/A
Other Involved Parties	N/A	N/A	5
Inpatients	4	2	N/A
Carers	1	1	N/A
Patients in community	0	1	N/A

Figures

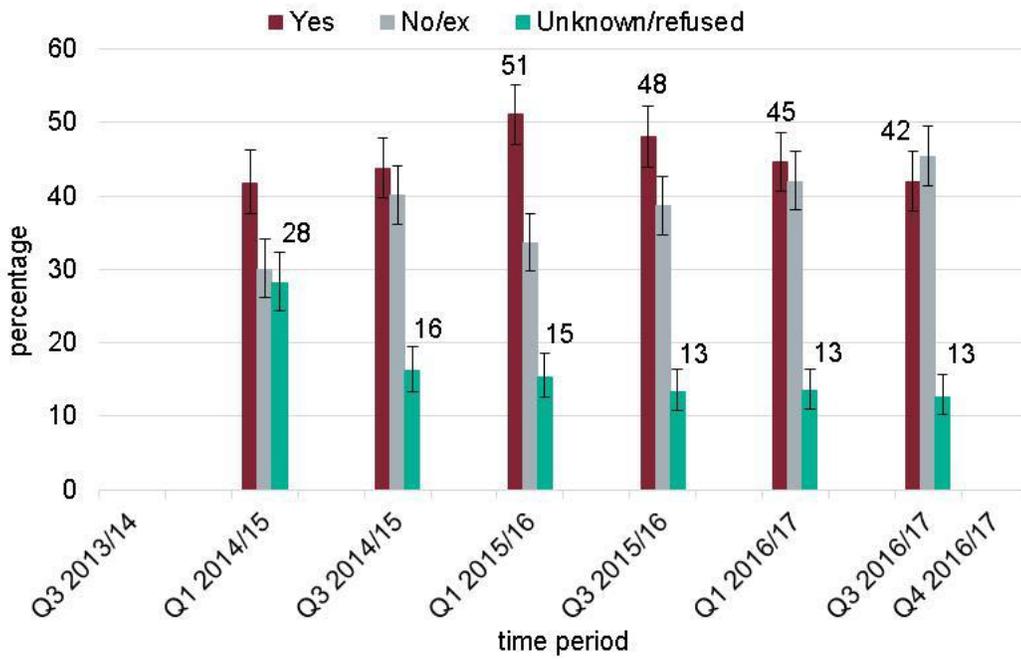


Figure 1
Percentage of inpatient admissions by smoking status in Trust B, 2013/14 to 2016/17

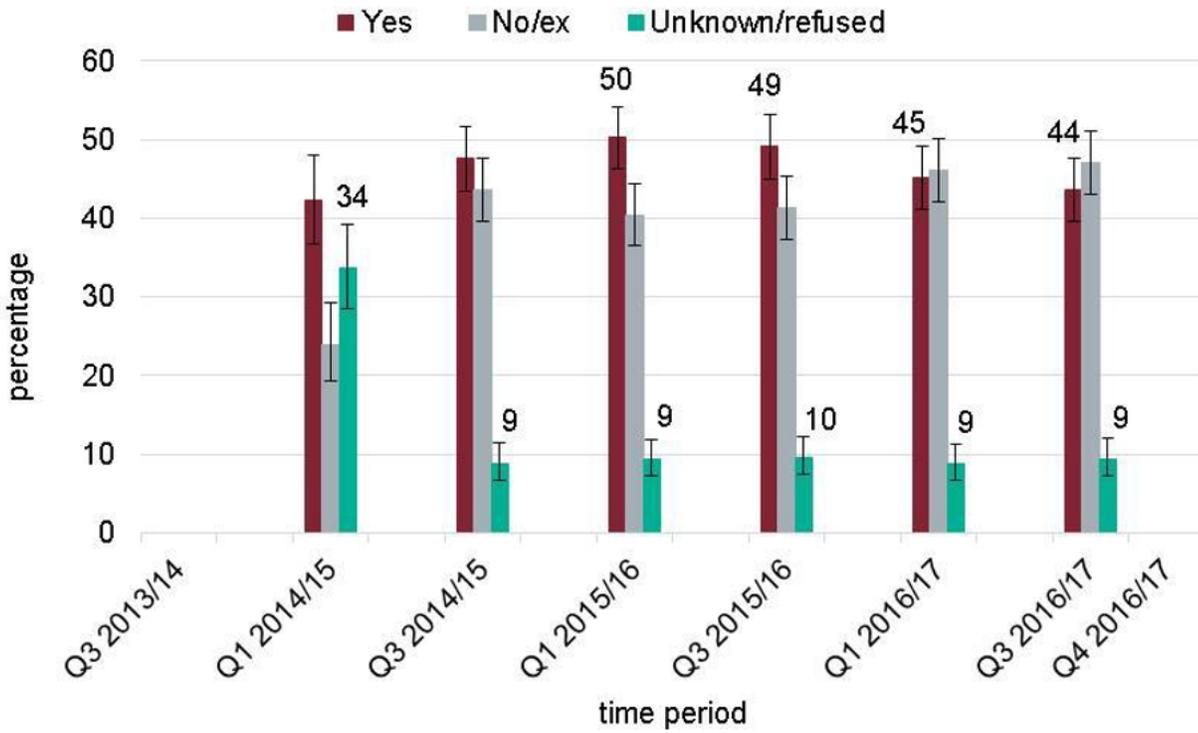


Figure 2
Percentage of inpatients at discharge by smoking status in Trust B, 2013/14 to 2016/17

Supplementary Files

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