Innovating for Improvement

Facilitating heroin smokers’ access to existing community COPD services in Liverpool

Royal Liverpool & Broadgreen University Hospitals NHS Trust

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## About the project

Project title:

Facilitating heroin smokers’ access to existing community COPD services in Liverpool

Lead organisation:

Royal Liverpool & Broadgreen University Hospitals NHS Trust

Partner organisation(s):

Liverpool Clinical Commissioning Group

Addaction Liverpool

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## Part 1: Abstract

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| 1 in 2 people with a history of heroin smoking have COPD. These patients have excellent attendance rates at substance misuse clinics but often do not engage well with primary care. No previous work has been done to tie together COPD and substance misuse management. We facilitated access to community based COPD clinics for 159 Addaction substance misuse clinic clients with COPD. We plan to deliver further qualitative work to gain insight into participants’ perceptions of our work.All patients received written COPD information, were signposted to on-site Stop Smoking support and were offered facilitated primary care appointment bookingSub-groups had additional, more intensive interventions including Pulmonary Rehabilitation (PR) and on-site Community Respiratory Team (CRT) nurse COPD optimisation review.Cohorting COPD patients and accessing primary care records system proved difficult. The enthusiasm of our patient representative, steering group and the staff delivering the intervention were our key enablers.Our project led to good uptake of primary care COPD consultations, increase in secondary care attendances and excellent uptake of CRT nurse support. PR and Stop Smoking uptake was, however, poor. The posters that we have designed as part of this project will be displayed at Addaction clinics locally and be available for substance misuse clinics nationally. They will highlight the prevalence of COPD in people with a history of heroin smoking and the fact that treatment works. The CRT nurses will continue to provide on-site optimisation to patients with COPD at their substance misuse clinics. |

## Part 2: Progress and outcomes

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| The Intervention Service users’ attendance at substance misuse clinics is excellent in contrast to their, often poor, engagement with primary care, the traditional route to accessing COPD management.The team involved in the design and delivery of this project have previously completed the largest COPD screening study to date at Addaction substance misuse clinics. 372 (50% of those screened) current or ex-heroin smoking service users were found to have lung function compatible with COPD. 73% of those approached taking part in screening and feedback from clients was very positive.Our intervention aimed to improve the uptake of COPD treatment in this underserved population by creating a bridge between substance misuse clinics and current community based COPD care. The multi disciplinary nature of our team with allowed for an innovative re-configuration of currently commissioned community COPD services to facilitate access for Addaction clients. No previous work has been done to tie COPD management to substance misuse management.  We co-ordinated the set up phase of our intervention with the pre-planned work of a PhD student involving repeating spirometry and questionnaires administered in our screening project. The Addaction team leader seconded to this project worked with the student to group patients with previously diagnosed COPD together to facilitate repeat spirometry and questionnaire administration as well as gaining participants’ consent to our accessing their primary and secondary care records. 159 Addaction clients with COPD were consented. Our intervention comprised:* Providing basic written COPD information & education: All clients were provided with an information booklet about COPD and a letter detailing the aims of the project.
* Arranging GP appointments for a COPD consultation, informing the patient & encouraging attendance. Primary care engagement: All clients were offered this and uptake was reviewed.
* Arranging pulmonary rehabilitation for groups of patients: Patients were recruited to facilitated Pulmonary rehabilitation (PR) from three substance misuse clinic sites where PR was currently delivered <500m from the Addaction clinic. The PR team set up dedicated sessions for substance misuse clients with COPD and attended the Addaction clinics to promote PR, recruit clients and perform initial assessments. A total of 24 patients were signed up for PR.
* Facilitating access to stop smoking services: All clients were offered stop smoking input, including Nicotine replacement therapy, from Stop Smoking trained Addaction nurses.
* Community Respiratory Team (CRT) intervention: Specialist respiratory nurses arranged appointments at Addaction clinics on two occasions and approached a total of 14 patients of whom 11 underwent full COPD review.

**Changes to our Original Plan**GainingAddaction COPD clients consent to access their primary and secondary care records. took longer than we had anticipated and the start of the intervention was delayed until late January 2018. Certain aspects of our planned intervention were omitted: * Training Addaction staff to check and reinforce inhaler technique. This proved to be unrealistic in terms of the training required and the staff’s ability to do this in addition to their current roles.
* Encourage uptake of pneumococcal & flu vaccination. This was not feasible due to the timing of the intervention outside the flu season.
* Stop smoking support. We had planned to relocate current stop smoking services but instead focused on signposting patients to Addaction nurses with Stop Smoking training.
* Encourage attendance for annual repeat spirometry. Our tying the consent process to a PhD project involving repeat spirometry made this unnecessary.

**Data collection and monitoring of impact on quality****Sources of data**Primary care, stop smoking and PR referral and uptake data were collected and collated by the Addaction project coordinator. The rolling nature of different aspects of the intervention and the fact that the intervention took place over 31 Addaction clinic sites proved challenging. These data were, for this reason, not complete.Data regarding primary care attendance for COPD consultations and prescriptions were collected from an electronic patient records system (EMIS) by pharmacy technicians, a Band 8 pharmacist and a CRT nurse. They were collated with the help of an administrator and analysed by a hospital data analyst. We had originally planned to employ administrative staff to collect the data but came to realise that access to the EMIS system is limited to clinical staff. It was hard to find clinical staff with the time and skills to collect and collate the required information and analysis proved much more challenging than we had anticipated. A few patients had moved GPs between the two periods we were assessing or were looked after by a GP practice that was not signed up to the EMIS system. **Adjustments to outcome measures**Collecting data post intervention proved challenging. We elected to compare two matched 6 month periods pre and post intervention (01/04/17 to 30/09/17 and 01/04/18 to 30/09/18) to assess the impact of our work. **The Impact of our intervention****Qualitative outcomes:**Terry, our steering group’s patient representative, has set up a COPD clients’ group which meets every two weeks. He is keen to remain involved and we are committed to helping him spread the message that there is treatment available. Paul, CRT nurse, gained a lot from working with this group and is keen to spearhead on-going CRT involvement. **Quantitative outcomes:*** Poor uptake of facilitated Pulmonary Rehabilitation (PR): Attendance at any PR session: 7/41 patients (17%), completion of PR 0/41
	+ PR, facilitated and targetted at this cohort with small groups and initial meetings occurring at the substance misuse clinics with PR itself scheduled for <200m away, was a key part of our intervention and the uptake does not justify future reconfiguring of services. Clients’ feedback included that they were not keen on attending groups and that they were embarrassed about their breathlessness.
* Poor uptake of stop smoking services: 12/280 patients (4.3%)
	+ Stop smoking was not taken up in significant numbers. Cigarette smoking reduction/cessation is not seen as a priority amongst the drug smoking population.
* Prescription of COPD medication. Self -reported: 60 patients with known COPD not prescribed treatment at baseline that had received treatment by the end of the intervention 5/60 (8.3%)
	+ Patients had received some kind of prescription for inhalers suggesting good uptake of COPD reviews.
* Collection of prescriptions for COPD medication. At the end of the project, only 40 (26%) patients were prescribed no inhaler treatment. Prescription collection rates were excellent.
	+ Patients engaged with COPD care to the extent that the majority were on some kind of inhaled treatment. The pick up rates were excellent suggesting that concordance with treatment was good.
* Reduction in daily doses of illicit drugs and/methadone.
	+ The proportion of patients reporting a reduction in illicit drug use was greater than the proportion reporting increased use (D180 v D1) across all drugs: heroin (34 v 26%), crack (35 v 18%) and cannabis (67 v 8%). The same was true for methadone dose (18 v 10%).
	+ This is a very positive result and we relate this outcome to the overall intervention. Evidence from previous pilot work at Addaction suggested that a focus on recovery rather than harm reduction in substance misuse led to increased uptake of physical health reviews. We hypothesised that the reverse might hold – an increased focus on physical health might lead to a reduction in illicit drug and opiate substitute use. This appears to have been the case.
* Excellent uptake of Community Respiratory Team (CRT) review. 11/14 patients approached underwent COPD optimisation.
	+ The CRT attended two separate Addaction clinics and saw clients for COPD optimisation immediately before or after their scheduled key worker appointment..
	+ Patient appointments were re-arranged such that all clients attending on those days were know to have COPD.
	+ The CRT nurse
		- reviewed and corrected inhaler technique
		- provided patients written action plans
		- re-iterated the importance of stopping smoking
		- prescribed additional COPD medication as appropriate
		- advised regarding the need for vaccinations (flu and pneumococcal)
		- referred to dieticians if appropriate
* Increase in A&E attendances, hospital admissions and length of stay (detailed in table below)
	+ Some patients attended primary and secondary care (acutely) very frequently.
	+ There was a slight increase in the numbers of attendances at both primary and secondary care post intervention.
	+ The primary care increase can be linked to increased awareness
	+ We do not think that there the slight increase in secondary care attendances is as likely to be linked to our intervention.

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| Average per patient | Pre Intervention | Post Intervention |
| No of admissions with COPD | 0.15 | 0.22 |
| Length of Stay | 0.42 | 1.27 |
| No of ED attendances | 0.25 | 0.35 |
| No of Respiratory OP attendances | 1.02 | 1.13 |

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## Part 3: Cost impact

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| Our intervention attempted to bridge heroin smokers’ substance misuse care, commissioned by Public Health through the City Council, to their COPD care, commissioned by LCCG. We were cognisant that the duration of our intervention, even if it were to result in all patients engaging fully with all COPD interventions, would be insufficient to impact mortality or hospital admissions. Our key outcome measures were related to uptake of COPD interventions, all of which are evidence based and have undergone health economic analysis. We did not undertake a detailed financial evaluation of our project but anticipate that the main potential cost saving for early and focussed intervention in this population will come from slowing the deterioration of COPD and consequent reductions in acute treatment costs.Our logic for testing this ‘bridge model’ was informed by the awareness that formal co-location would be very expensive indeed. The CCG already commission community COPD services and a large part of the innovative nature of this project was that we were able to move pre-existing, pre-commissioned community based COPD management closer to the substance misuse clinics. The secondment of an Addaction member of staff to act as a project coordinator was not prohibitively expensive. She did have to exert considerable effort to re-configure substance misuse clinics and appointments to group clients with COPD together in order to facilitate their access to a particular aspect of COPD care. The London Respiratory Network’s pyramid, below, illustrates the comparative value of interventions for COPD using cost per quality adjusted life year (QALY). The uptake of flu vaccination was not increased by our 6 month intervention as it took place outside the flu season. The uptake of Stop Smoking Support was poor in our population. The most successful aspect of our intervention was the uptake of CRT nurse review. Patients engaged extremely well and uptake was high (11/14 patients). The least successful, most time consuming and, had it been specifically commissioned, most expensive aspect was PR; uptake was very poor and none of the patients completed the programme despite facilitation of access. PR sessions were block booked for Addaction clients for a 4 month period at two sites. The sites were pre-booked as part of the pre-commissioned Breathe Programme delivered by the Liverpool Heart and Chest Hospital PR team but several patients’ appointments were moved to allow for this block booking to facilitate Addaction COPD patients’ access to PR at these sites. In essence we designed this aspect to make it as easy as possible to attend sessions solely for Addaction clients. We would not advocate reconfiguring existing PR services to target COPD patients with a history of heroin smoking specifically. Our testing this facilitation/near co-location of various COPD interventions in a cost neutral way has allowed us to reach conclude that some aspects of our work are sustainable and potentially worthy of being spread more widely, some aspects warrant further development and/or study and that some are unlikely to be financially viable. |

## Part 4: Learning from your project

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| **What we achieved**Some years ago, we submitted a research grant application to test on-site pulmonary rehabilitation at the substance misuse clinic. The grant was rejected as the reviewers did not think that patients would engage with PR. At the time, we felt that they were wrong but, having undertaken this project, we think that they may have been right. The uptake of traditional pulmonary rehabilitation in this population is incredibly low. Modified exercise training may have a role but the efficacy of such a programme would require independent validation.Q We have distilled some simple paired messages from our work which we plan to disseminate through well designed posters at substance misuse clinics nationally to highlight the links between drug smoking and COPD. These have been incorporated into posters which will be displayed at Addaction substance misuse clinics (see Appendix 1).The key to the success of this project has been the team behind it and, in particular, the Addaction coordinators, Tara Byrne and Kerry Marwood. The individuals that co-ordinate the project on the ground and collect the data remained engaged with the concepts behind the work and were able to convey these to the clients on the ground. Also instrumental were the members of the CRT, Paul Tinnion in particular, that took part in the CRT arm of the intervention. Their empathy with these patients and ability to engage with them was vital to the extent of the uptake of CRT input. The PR team led by Sue Sutton also worked incredibly hard and engaged with the Addaction clients and their lack of uptake is in no way a reflection on Sue and the team’s efforts. The negative result in terms of PR is very valuable for planning future interventions. The core team members had worked together previously and were familiar with the burden of respiratory disease in patients with a history of heroin smoking. Regular meetings, monthly for the first 9 months of the project helped maintain the wider team’s enthusiasm and helped to develop the project.**What we didn’t achieve and what we would have done differently**We had planned to measure quality of life CAT scores on patients pre and post intervention in order to measure the effect of the intervention on COPD related quality of life. We were unable to assess this accurately post intervention, largely due to the fact that the intervention was not started on all individuals at the same time. Our intervention was, in retrospect, too multi-faceted and targeted at too many individuals. Performing one aspect of our intervention at a time with smaller groups of participants would have allowed us to make small changes and gather more data during the project regarding participants’ thoughts as to how effective or otherwise an intervention was. The most complex aspect of our intervention was PR and we spent a lot of time organising client recruitment and block-booking sessions. We should, in retrospect, have modified our plans at an earlier stage, when it became apparent that none of the patients had attended more than one session, and focussed on widening CRT nurse input or more aggressive Stop Smoking support. The lack of uptake of completion of PR was, also in retrospect, predictable. We did not have an adequate strategy to mitigate for this.We were heavily dependent on EMIS data collection and hadn’t realised that only clinicians can access this system. This led to a delay in our data collection and analysis. Had we known this, we would have budgeted for a clinical fellow to undertake the data collection. Not having a dedicated clinical member of staff with adequate time for data collection led to a significant delay in collecting pre intervention data such that there was insufficient data. We managed this by changing our analysis period for primary and secondary interactions as well as medication collections to a matched 6 month periods pre and peri intervention.Were we starting this project now, we would certainly target no more than 50 patients in total. We might offer facilitated, close to substance misuse clinic PR to no more than 10 patients, CRT input and review at 6 months with detailed questionnaire completion pre and post intervention (EQ5D and CAT) to a further 10, and lay trainer review with questionnaires pre and post to a further 10 and attempt to co-ordinate methadone and COPD inhaler prescriptions in the final 10 patients. We would be more supple and react quicker to poor uptake. We would spend less time intervening and more time measuring outcomes.**What we’ll take away from this project** Co-location of COPD and substance misuse care warrants further investigation, We will learn from this work and publish our findings in a peer review journal. We will also build on partnerships that have been formed as a result of this work, particularly with our academic colleagues in Sheffield. We hope to qualitatively study participants in this project to provide us with further information to inform future collaborative work. |

## Part 5: Sustainability and spread

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| **Sustainability**The CRT will offer ongoing support on-site to Addaction clients during the summer months in coming years. CRT nurses can provide support in all aspects of COPD management: Stop smoking advice, inhaler technique checking and correction, COPD education and provision of written information, medication checks and prescriptions for COPD medications, education around vaccination and PR, referral to PR, dietary advice and referral to support groups. Less successful aspects of our intervention, dedicated PR sessions in particular, will not be continued due to the lack of uptake. Patient’s feedback as to the lack of uptake was collected as part of our project. One of the key reasons for non attendance was that patients were embarrassed by the extent of their breathlessness. Further explorations of targeted exercise intervention in this group may be warranted and patients that are willing to participate in PR can be referred to currently commissioned sessions via CRT nurses.Our earlier work has highlighted the prevalence of COPD in patients with a history of drug smoking. In light of this, Addaction have purchased two spirometry machines and will offer this test to new patients. Those with spirometry that is anything other than normal will be referred for formal testing. Addaction will attempt to group together patients with spirometry suggestive of COPD and liaise with the community spirometry service to arrange ad hoc on-site spirometry sessions. Those newly diagnosed with COPD will be eligible for CRT nurse review. The support for this ongoing input was gained through Sue Renwick’s involvement in the project. In addition, the CRT nurses that took part in the intervention greatly enjoyed working with this group of patients and felt that, amongst those that engaged, there was a lot that they could achieve. The CRT and PR staff reported to the project management meetings that a lot of the problems patients were reporting were social in nature. Often, patients reported that finances limited their ability to attend multiple appointments. Liverpool CCG fund the Advice on Prescription service (AoP) which was launched in 2014 in partnership with South Liverpool Citizens’ Advice Bureau. AoP advisors can provide assistance on issues such as homelessness, housing and benefits. We aim to arrange AoP visits to Addaction sites in the future in the hope that addressing some of these issues will allow patients to better prioritise their healthcare needs. **External interest** Our work has received interest from the local media and from colleagues around the country with an interest in improving access to respiratory healthcare in hard to reach populations. We plan to work with Caroline Mitchell and Joe Hullin, fellow researchers based in Sheffield who have also published in this area, and use some of the money we have left over from this grant to deliver a qualitative assessment of our work. We aim to recruit participants from our celebration events in February 2019 to attend a workshop where our researchers can explore their views on our intervention and their respiratory problems more broadly. We will also arrange for key stakeholders (Addaction key workers, GPs, Respiratory physicians, CRT nurses) to be interviewed with a view to publishing our findings and building the evidence base to support the future development of a complex intervention.Our description of the intervention has evolved as we have seen which aspects worked during its implementation. We originally thought of the main part of the intervention as a bridge between the substance misuse service and community COPD services but, given the success of the CRT input in particular, now see the intervention as a partial co-location of COPD and substance misuse services. Such a co-location, in our opinion, warrants further study in terms of outcomes for patients and health economic analysis. We hope to develop such a study with our colleagues in Sheffield. **Spread**We have distilled some simple messages from our work and are in the process of getting posters designed to convey these messages effectively. These posters will be displayed at Addaction sites nationwide and be made available to other substance misuse clinics to highlight the problem of heroin smoking associated COPD and encourage clients to seek help for their respiratory problems in the future. We are aware that the population we have studied is unique in that they have been comprehensively screened for COPD. A combination of screening and specialist COPD nurse support in substance misuse services may well lead to improved outcomes in this at risk population. We plan to apply for funding in the future to study the health and health economic outcomes of such an intervention in the future.  |