

D. Main Section of the proposal

1. Overall Aim & Objectives:

The overall aim of this project is to help residents and staff at three inpatient Alcohol and Drug Treatment Centers (ADATCs) in North Carolina accomplish and sustain a smoke-free lifestyle. North Carolina is in the process of establishing regulations for mental health facilities in the state to become smoke free campuses in 2013. Implementing smoking cessation programs that will be effective and sustainable is an important objective for reaching this aim.

Training ADATC clinicians on evidence based smoking cessation interventions is obviously a critical step, and this project will train clinical staff in all three ADATCs. But training alone is not enough for successful implementation of complex interventions. Many evidence-based interventions fail because they are not well implemented. During evaluation, if an intervention does not achieve the desired results, it is difficult to ascertain whether the intervention failed because it was intrinsically flawed, or whether poor implementation diminished the effect of the intervention. By reducing variability in the implementation process, the full potential of interventions can be realized and its effectiveness can be appropriately evaluated.

With this in mind, the project will also test the effectiveness of an intervention package that goes beyond clinician training. An intervention package that supplements the smoking cessation training with systematic service delivery process design will be implemented in one facility, the 80-bed RJ Blackley (RJB) ADATC. If the RJB package is effective, a process implementation guide will be created for replication in the other two centers at the termination of this project.

Success of this project will be measured using the tobacco control measures from the Joint Commission:¹

- Hospitals (*and treatment centers*) must identify and document smoking behaviors among all patients admitted;
- Give evidence-based counseling on cessation AND cessation medications to any patient without a contraindication who does not opt out;
- At discharge, make referrals for further cessation counseling and prescribe medications to support cessation, and
- Document the patient's smoking status at 30 days after discharge.

¹ Fiore MC, Goplerud E, Schroeder SA. The Joint Commission's New Tobacco Smoking Cessation Measures. <http://pulmccm.org/main/2012/outpatient-pulmonology-review/joint-commission-mandates-new-smoking-cessation-performance-measures/>

2. Current Assessment of Need in Target Area:

Smoking rates for individuals served by the RJB ADATC are exceptionally high. Smoking rates for the individuals served by RJB ADATC are directly measured through the Division of Mental Health, Developmental Disabilities, and *Substance Abuse Service's North Carolina Treatment Outcomes and Program Performance System* (NC TOPPS). This web based system that gathers outcome and performance data addresses issues such as reliability, validity, completeness, and accuracy, so that data from this system can be used in treatment, quality improvement, and research. NC TOPPS measures the quality of substance abuse and mental health services and their impact on individual's lives through face to face structured interviews between a patient and a trained interviewer conducted at the initiation of services and again at the completion of services. For the period of time July, 2011 through June, 2012, data collected through the NC TOPPS system showed that 81% of individuals served by RJB ADATC reported tobacco use during the 30 days prior to admission. Overall, the smoking rate in individuals with substance use disorders across treatment settings in NC was sixty-three percent (63%). In comparison, the smoking rate for the general population in North Carolina in 2010 was 19.8% as measured by the North Carolina Behavioral Risk Factor Surveillance Survey. .

This project builds upon a state-wide effort to reduce smoking prevalence among individuals with behavioral health disorders. In August, 2011, North Carolina held a leadership academy supported by and in collaboration with the Substance Abuse and Mental Health Services Administration (SAMSHA) and the Smoking Cessation Leadership Center (SCLC). An Action Plan was developed in 6 different areas, one of which was the Facilities subgroup. The facilities subgroup drafted 6 objectives. This proposal builds upon 4 of the 6 objectives including development and implementation of a program model for Substance Abuse Treatment Settings, development of a process guide for use with outreach, addressing staff tobacco use, and transition interventions. In the one year since the summit was held, the smoking rate in individuals with substance use disorders across treatment settings in NC decreased by one percent (1%) to sixty-two percent (62%) for 2011. With a target goal to reduce the smoking rate in individuals with substance use disorders to 50% by 2016, it is critical to implement effective systems of care in the very high prevalence population treated in the Alcohol and Drug Treatment Centers.

This project proposal would leverage the imminent tobacco free campus rule to improve outcomes and effectiveness of smoking cessation interventions. A tobacco free campus without a formal smoking cessation program was piloted at one of the sister ADATC facilities. Data obtained through NC TOPPS for fiscal year 2012 shows that at this facility, a higher percent of individuals reported being helped with decreasing tobacco use (80% vs. 60%) compared to the other sites; however, a higher percent of individuals treated at the tobacco free campus also reported smoking one or more packs of cigarettes per day at the completion of treatment (52% vs. 40.7%). There is a clear need for a systematic and consistent smoking cessation implementation approach in these facilities which is the focus of this proposal.

3. Technical Approach, Intervention Design and Methods:

A recent review of integration of smoking cessation programs into addiction treatment² identified three barriers to change: (a) substance abuse disorder treatment professionals do not consider smoking cessation important; (b) there is no time to integrate smoking cessation activities into addiction treatment programs and (c) not enough resources with smoking cessation counseling skills. In North Carolina, the first barrier is not an option any more – the development of smoke-free campuses for state operated mental health facilities will necessitate that some smoking cessation programs be provided to patients and employees. Our technical approach for this project addresses the remaining two barriers.

Our technical approach will consist of three steps, described below in greater detail. First, we will train the health care providers in all three ADATCs (doctors, nurses and counselors) on smoking cessation interventions. This will address the barrier associated with a lack of trained resources. Next, we will provide selected staff in the RJ Blackley facility with process design and continuous quality improvement (CQI) training. This training will enable the design of processes by which smoking cessation programs can be implemented. Process design supplements clinical protocols by ensuring that cessation interventions are implemented efficiently yet without a negative impact on quality. The CQI training will help facility staff to identify opportunities for ongoing improvement. This will be important to sustain the results achieved from the implementation of this program. Finally, we will work with a team that consists of doctors, nurses and administrators in the facility to develop, test and finalize processes to integrate smoking cessation interventions into existing addiction treatment protocols. As part of this step, we will also develop output and process metrics to monitor these processes. The output of this step will be a “process implementation guide” that will be used to replicate these processes in other state operated alcohol and drug treatment facilities in North Carolina and beyond.

Step 1: Train health providers on smoking cessation interventions in all three ADATCs

The training program will be a customized version of UCSF’s *Rx for Change: Clinician-Assisted Tobacco Cessation*³ which is based on U.S. Public Health Service’s *2008 Clinical Practice Guidelines for Treating Tobacco Use and Dependence*. We will begin with the basic curriculum (“5 A’s Approach”) and add components from the *Psychiatry Rx for Change* module. Our final program will be a 4-6 hour face to face training session and will cover the following topics⁴:

1. Epidemiology and impact of tobacco use and mental illness
2. Psychiatric medication interactions with smoking
3. Factors associated with the high rates of smoking in psychiatric and addiction populations
4. Counseling strategies:
 - a. Clinical Practice Guideline strategies

² Knudsen, H.K. & White, W.L. (2012) Smoking cessation services in addiction treatment: Challenges for organizations and the counseling workforce. *Counselor*, 13(1), 10-14.

³ <http://rxforchange.ucsf.edu/>

⁴ These are our initial ideas for the curriculum, and these could be modified or enhanced as we develop the final training program

- i. Treating physiological and behavioral aspects of tobacco dependence
 - ii. 5A's (Ask, Advise, Assess, Assist, Arrange)
 - iii. Recommended practices (i.e., contact time, follow up care, clinicians)
 - iv. Motivational interviewing for those not ready to quit
 - b. Why use Mental Health providers
- 5. Pharmacotherapy
- 6. Special Populations
 - a. Tobacco Treatment
 - i. Smoking outcomes
 - ii. Co-Occurring Disorders
 - iii. Integration
 - b. Prevention

The Rx for Change curriculum includes power point slides, case scenarios, video segments, handouts and tools and we will customize these as appropriate for our application.

The training will involve both face-to-face and distance components. The face-to-face training will be provided by staff of the office of the Director of Cessation, Tobacco Prevention and Control Branch of North Carolina Department of Health and Human Services. This training will be reinforced by the on-line resources of the Center for Global Learning in the Public Health Leadership Program of UNC's Gillings School of Global Public Health. The role of this center is to provide customized technology-based learning solutions to build the skills of the public health and health care workforce.⁵ After the training is completed, we will set up an online learning center for the trainees to ask clarifying questions or application advice. This center can also be used by the Tobacco Prevention and Control Branch to provide refresher seminars through podcasts or webinars, if required, or to facilitate online discussions to broaden and deepen the expertise of the practitioners. This online center will remain after the project is complete to facilitate scale-up of the project outputs to other addiction treatment centers in the state.

Step 2: Train selected RJ Blackley facility staff on quality improvement methods:

This training will consist of three programs: training facility leaders to be *improvement champions*, training selected facility staff to be *improvement specialists* and informing overall staff on being *participants* in improvement activities. All training programs will cover similar content, but the duration and emphasis will be different depending on the audience. The training program will integrate components of North Carolina Center for Public Health Quality (NCCPHQ) Public Health Quality Improvement 101 program⁶ with elements of the well-known Lean⁷ and Six Sigma⁸ process improvement methods. Topics covered will be:

⁵ The website of the center is www.sph.unc.edu/glp.

⁶ http://www.ncpublichealthquality.org/ctr/index.php?option=com_content&view=article&id=98&Itemid=50

⁷ [Womack, James P.](#); Daniel T. Jones (2003). *Lean Thinking*. Free Press.

⁸ Stamatis, D. H. (2004). *Six Sigma Fundamentals: A Complete Guide to the System, Methods, and Tools*. Productivity Press

- 1) Understanding work as a process
- 2) Documenting work: process mapping
- 3) The voice of the patient
- 4) Output, process and input metrics
- 5) Data collection methods
- 6) Analyzing data: The 7 QI tools
- 7) Generating improvement activities: creativity tools
- 8) Prioritizing improvements
- 9) Improvement project planning and team composition
- 10) The role of leaders
- 11) Communication and change management
- 12) Sustaining change: monitoring and control

The champions training will be 4 hours and will focus on the roles of leaders and on supporting organizational change. The improvement specialist's training will be 2 to 2.5 days which can be offered in multiple sessions if there are availability constraints. The training will be hands on and include a mix of exercises and practice sessions. One representative from each of the clinical communities (physicians, physician extenders, nurses, health care technicians, social workers, substance abuse counselors and recreational therapists) will be selected to be improvement specialists. This represents 5% of the RJ Blackley workforce. The participant training will be a 1.5 to 2 hour overview designed for all facility staff and will emphasize the responsibilities of being part of an improvement team. It will be offered several times over a period of 2-3 days so that everyone can attend when time permits. The materials will also be available through the Center for Global Learning.

Step 3: Develop processes at RJ Blackley to integrate interventions into current programs and create process guide:

In this step, we will introduce a systematic approach to translate the “what” of the intervention trainings to the “how” of implementation. As mentioned in the study described earlier, lack of time to integrate smoking cessation activities into current addiction treatment programs is a barrier to successful implementation. Our process design approach will involve a “design team” consisting of doctors, nurses and administrators. The team will be facilitated by the facility staff trained in CQI and will be assisted by UNC faculty and students from the Gillings School of Global Public Health. The approach will follow aspects of a methodology for service design developed by Dr. Rohit Ramaswamy, one of the project leaders from UNC, in his book⁹. A version of this methodology, entitled *Design for Six Sigma*¹⁰ is widely adopted in health care and other industrial settings to create high quality products and services.

⁹ Ramaswamy, R. (1996). *Design and Management of Service Processes*. Prentice-Hall.

¹⁰ Kai Yang & El Haik (2003). *Design for Six Sigma*, McGraw-Hill

This step will consist of the following activities:

A. DESIGN ACTIVITIES

- a) Agree on the desired outputs from the program.
- b) Construct maps of the treatment pathways currently taken by patients after they enter the facility and intake is complete. These represent the processes through which service is currently delivered.
- c) Assess the “intensity of care” associated with each pathway (average number of days of stay as well as the average amount of time spent in medical care and in individual and group counseling).
- d) Map the range of smoking cessation interventions covered in the provider training (simple interventions at intake, counseling based approaches, NRT, prescription medication) to the current processes to test if all interventions can be adequately incorporated into the current patient workflow.
- e) If not, work with the design team to create and analyze alternate processes that might better accommodate these interventions (e.g. if the campus is completely smoke free and there are no opportunities to smoke post intake, more frequent patient contact may be necessary).
- f) Optimize the designed processes to gain efficiencies.
- g) Identify potential risks associated with the implementation of the design and develop plans to mitigate risks.
- h) Specify initial list of process and output metrics for monitoring the performance of the designed processes. The risk points identified in step (g) can serve as a guideline for identifying these metrics.

B. TRIAL IMPLEMENTATION AND FINALIZATION ACTIVITIES

- a) Implement the designed processes and collect data on the process and on the output metrics. At this stage, since the process metrics list is not finalized, the data collection may be manual and ad-hoc with the objective of identifying situations where the implementation in the RJB context is different from the design.
- b) Supplement the process data with observational and qualitative information to understand the contexts and causes of implementation issues.
- c) Fine tune the processes using a “try, test and fix” approach which might involve multiple iterations of process changes until the processes are operating as desired. Some of these iterations might require changes to enabling systems that are not directly related to the service delivery processes.
- d) When the processes are finalized, create the final set of output and process metrics that will be used to monitor and evaluate the program in the future. As far as possible, the process metrics selected should be “leading indicators” of future

performance problems so that changes to process metrics can lead to improvement activities before deterioration in outputs and outcomes takes place.

- e) Create the process guide. This guide will have two parts. The first part will present the process maps for implementation of smoking cessation programs in other addiction centers and the M&E metrics. The second part will present guidelines for successful implementation.

C. MONITORING AND CONTINUOUS IMPROVEMENT ACTIVITIES

- a) Establish protocols for collecting process metrics through existing reporting mechanisms such as NC TOPPS.
- b) Develop standard procedures for performance data review and establish procedures for continuous improvement cycles for sustaining and improving performance.
- c) Assist the improvement specialists through one continuous improvement activity.

Each partner organization will have a unique and distinct role. UNC will provide the QI training, support online connection through the Center for Global Learning, and guide the improvement specialists through the process design activities. The NC DHHS Tobacco Cessation Division will develop the curriculum and provide the training for smoking cessation interventions. The design activities will take place at the NC DHHS Division of State Operated Mental Health Facilities. The Quality Improvement training curriculum will be based on NCCPHQ's QI 101 course.

4. Evaluation Design:

For the evaluation, we will test whether the training and process design package implemented at RJB results in decreased smoking among patients compared to just the training implemented in the other facilities. Since one of the facilities (Walter B. Jones) was the pilot site for the smoke-free campus, we will use the other facility (Julian F. Keith) as the control. For the outcome and output evaluation, we propose using a modified version of the smoking cessation metrics proposed by the joint commission:

- a) **Document patients' smoking status 30 days after discharge:** Change in the percent of individuals reporting smoking before and 30 days after the smoking cessation treatment (segmented by different treatment processes) for RJB compared to JFK.
- b) **Evidence-based counseling on cessation AND cessation medications to any patient without a contraindication who does not opt out:** Comparison of the percent of individuals who report being helped with smoking cessation between the RJB and JFK.
- c) **Referrals for further cessation counseling and prescribe medications to support cessation:** Comparison of the percent of individuals being referred between the RJB and JFK.

In addition to these, data on input and process metrics will also be collected to determine whether all patients have been screened for smoking behaviors and have participated in the various treatment plans. These metrics will also be used to monitor the processes.

The logic model below summarizes the proposed indicators. At this point in the proposal these are just for consideration and will be finalized through discussions with DHHS and facility staff at the start of the project.

INPUT	PROCESS	OUTPUT	OUTCOME
%patients screened for smoking behavior at intake	Average number of days a patient participates in each treatment process.	% patients who report being helped with smoking cessation.	% patients who have had at least one cigarette in the first 30 days after discharge
% patients who are smokers at intake	% assigned patients participating in all activities of each treatment process.	% patients referred for further counseling.	
% patients assigned to each smoking cessation treatment process	Average number of treatment activities attended by a patient for each treatment process.		

E. Detailed Work Plan and Deliverable Schedule

The work plan will follow the three steps outlined in the technical description section of this proposal. Deadlines, schedule and budget are shown in the table below.

Deliverable	Scheduled completion date	
Assemble team members from DHHS, facilities and UNC	January 2013	
Collect data for baseline evaluation from RJB and control	February 2013	
Customize smoking cessation program curriculum	February 2013	
Complete smoking cessation training	March 2013	
Set up online learning center	March 2013	
Conduct discussions on smoking cessation training	May 2013	
Finalize CQI training curriculum	March 2013	
Complete champion, practitioner and specialist design training	April/May 2013	

Select design team	May 2013	
Complete “design activities” mentioned in Technical Approach section of proposal	August 2013	
Implement initial design and monitor performance	October 2013	
Make changes as necessary and finalize design	December 2013	
Implement final process	January 2014	
Complete program guide	March 2014	
Monitor and identify improvement opportunities	June 2014	
Provide CQI refresher training	June 2014	
Launch process improvement activities	October 2014	
Complete evaluation	December 2014	