

Louisiana State University Health System's Tobacco Control Initiative

Background

The Louisiana State University (LSU) Health System is one of the largest safety-net health care delivery systems in the country, serving hundreds of thousands of Louisiana residents. In addition to attending physicians and nurses, more than 1,100 medical residents and fellows provide care at the 10 facilities comprised by this integrated system.¹ Two distinct institutions operate hospitals within the LSU health system: the Health Care Services Division (HCSD) of the LSU Health Sciences Center-New Orleans (LSUHSC-New Orleans) operates seven hospitals in the southern part of the state, and the LSU Health Sciences Center-Shreveport (LSUHSC-Shreveport) operates three hospitals in the northern part of the state. All facilities serve as training sites for LSU medical, nursing, and allied health students.² During 2011, the LSU Health System recorded more than 66,000 inpatient admissions and 2.1 million outpatient visits; 29% of all primary care outpatients in the HCSD system were smokers, 65% were women, 53% were African-American, and 42% were uninsured.²

In 2002, the HCSD and LSUHSC-Shreveport partnered with the LSUHSC-New Orleans School of Public Health to establish the Tobacco Control Initiative (TCI). The TCI's goal was to reduce tobacco use among the patient population of the 10 LSU health system public hospitals. The initiative was created as part of a statewide tobacco control program funded by a legislatively enacted cigarette excise tax. By using a health systems change approach, evidence-based clinical interventions and treatments were integrated into patient care practices at all 10 sites.

The TCI is an example of a real-world implementation project with a research component. Results of the health systems approach work at LSU health system public hospitals and its effects have been recently published.^{2, 3, 4, 5, 6, 7} This question and answer (Q&A) with the TCI management team provides state tobacco control programs with additional details about how the TCI team developed and implemented this systems approach among their hospitals, as well as outcomes they have seen from their work.

Question 1: What was the impetus for the LSU Health System's Tobacco Control Initiative, and how did you obtain buy-in from the 10 hospitals?

Answer: In 2002, the Louisiana State Legislature increased the excise tax on cigarettes from 24 cents to 36 cents and allocated a portion of the revenue to a Tobacco Tax Health Care Fund to be distributed for tobacco prevention and cessation programs. The legislation included a mandate and funding for cessation services in Louisiana's public hospital system. The LSUHSC-New Orleans, through its School of Public Health, received the funding to work with the public hospitals to design and implement the TCI.

With this mandate, the TCI Director, a faculty member in the School of Public Health, worked with hospital system administrators to develop a plan for cessation services, and started by asking, "How can we work with you?" At the

Key Highlights

- ◆ The LSU Health System's Tobacco Control Initiative used a systems approach to integrate evidence-based tobacco treatment into routine care at 10 public hospitals.
- ◆ This Q&A provides state tobacco control programs with details about the program design, implementation, outcomes, and learnings.
- ◆ Key learnings from this health systems change project include the following:
 1. Trained and motivated staff are critical to success.
 2. When implementing systems changes, practice the 3 P's—practical strategies, persistence, and patience.
 3. When measuring success, conceptualize and communicate what the wins are for intervention adoption for the system, clinicians, and patients.

time, seven facilities under the auspices of the LSUHSC-New Orleans were developing a chronic disease management program focused on coordinating services to improve the health outcomes of patients with chronic conditions. It was felt that a tobacco control initiative could align with the disease management program, which offered a point of access to an existing organizational structure, protocol-driven clinical care, information technology for patient tracking, and the potential for performance feedback and program evaluation.⁷

Interviews were conducted with hospital administrators to assess the following: (1) knowledge of [US Public Health Service Guideline Treating Tobacco Use and Dependence \(PHSG\)](#) recommendations; (2) existing cessation services; and (3) each hospital's needs. These interviews were critical for securing buy-in and guiding the TCI systems design. Chief among the needs cited by hospital administrators was a coordinator dedicated to tobacco cessation services, which the TCI management team subsequently provided as part of the program.

Although the hospitals received no direct funding, we identified multiple wins, or benefits, from the TCI in the form of systems modifications, extensive training, evidence-based cessation treatment services, and the dedicated tobacco treatment staff on-site. The TCI Director also participated in system-sponsored activities, including quarterly system-wide Health Care Effectiveness Forums (attended by administrators, physicians, nurses, patient and clinician educators, and quality assurance staff) and meetings of the Clinical Care Coordination team (i.e., clinical leads for each disease or risk factor).

Question 2: What are the goals of the LSU Health System's Tobacco Control Initiative?

Answer: We formulated three project goals: (1) to identify all tobacco users; (2) to identify evidence-based interventions that are both appropriate for and acceptable to patients served by the hospitals; and (3) to evaluate implementation and performance of the 5As continuously to guide program development and improve adherence and outcomes.

We then set numeric performance goals on process measures at the system, clinician, and patient levels by using literature available at the time.^{5,8} The TCI adopted quantitative cessation goals from the 2002 *National Blueprint for Disseminating and Implementing Evidence-Based Clinical and Community Strategies to Promote Tobacco-Use Cessation*, a document developed by a consortium of public and private agencies committed to tobacco control.⁹

- **At the system level**, our goals were to implement electronic identification and documentation of tobacco use status and treatment in all 10 facilities, and to train providers across all facilities to conduct evidence-based tobacco treatment interventions.
- **At the clinician level**, our goals were to (1) have physicians ask 100% of their patients about tobacco use; (2) *advise* 90% of identified tobacco users to quit; (3) *assess* 90% of identified tobacco users for readiness to quit; (4) *assist* 75% of identified tobacco users who say they are ready to quit in a quit attempt by using behavioral counseling and/or medication; and (5) *arrange* follow-up contact for 50% of tobacco users who make a quit attempt.
- **At the patient level**, our goals were to have 40% of tobacco users use evidence-based treatment (medications, in-house behavioral counseling, and/or quitline services), and to increase the annual quit rate to 10%.⁵

Despite the complexity of the LSU health system, we made significant progress toward meeting these goals within 3 years of integrating the 5As protocol into the electronic health record (EHR).

Question 3: What principles or research guided the development of the TCI for this large public hospital system?

Answer: The PHSG served as the foundation for the TCI clinical intervention protocol, although systems-thinking guided our framework for program conceptualization and development. We invited experts to describe systems-thinking approaches, although in 2002, we were clearly an early adopter of putting systems-thinking into action. Later, publications, such as the National Cancer Institute *Monograph 18: Greater Than the Sum: Systems Thinking in Tobacco Control* (2007), reinforced our systems orientation.¹⁰

In addition, we realized we had to think *systemically* to accomplish our goals. With multiple facilities each having multiple different processes and data collection systems, we needed systems-wide approaches to enable them all to move in the same direction. To make this happen, we identified (1) common processes of care among all facilities; (2) existing data sources shared by facilities; and (3) data collection and retrieval processes available to all facilities. On the basis of these findings, we developed tracking and surveillance systems to work in tandem with the health system's web-based evaluation reporting tool for documenting program performance.

In many respects, our TCI as a systems initiative was ahead of its time; it predated the CDC *Practical Guide for Working with Health Care Systems* (2006),¹¹ the Partnership for Prevention and CDC *Healthcare Provider Reminder Systems, Provider Education, and Patient Education: Working with Healthcare Delivery Systems to Improve the Delivery of Tobacco-Use Treatment to Patients—An Action Guide* (2008)¹², the Affordable Care Act (2010), and the ARRA/HITECH Act (2009), which authorized the CMS Meaningful Use Incentive Program, which, in turn, accelerated adoption of electronic health records.

Question 4: What were the chief clinical intervention and treatment components of the program?

Answer: The components of the TCI include systems to (1) identify tobacco users; (2) perform routine, evidence-based cessation clinical interventions; and (3) offer patients several treatment options, which are described briefly here. The TCI also provides dedicated tobacco treatment personnel at each site, clinician training, and routine performance appraisal and feedback.

- **Tobacco use identification and registry:** Before having an electronic health record system (EHR), we used a process to identify all tobacco users during hospital registration and financial certification (required every 180 days). Administrative staff asked all patients, "Have you used tobacco in the past 30 days?" From this step, we were able to create a tobacco registry that served, in the early days, as the denominator of all tobacco users—essential for analytic and program evaluation purposes. Later, we integrated tobacco identification into the EHR. Tobacco use status is now documented during the nursing assessment; the "ask" (i.e., screening) is electronically prompted if an assessment has not been conducted during the past 90 days.
- **Electronic-supported clinical interventions:** We designed a comprehensive system of clinical 5A interventions, shown in Figure 1. In 2006, the first iteration was integrated into HCSD's EHR, Clinical Inquiry (CLiQ)—an internally developed LSU Health System EHR, as shown in Figures 2.1 and 2.2.⁷ CLiQ provided all the functionality we associate today with EHRs; it provided clinicians with a centralized entry point to organize patient data from multiple sources and was used in 8 of the 10 hospitals.
- **Treatment options:** To support clinical interventions, our TCI design included referrals to the state quitline service, low or no cost medications, free group behavioral counseling at each hospital, and patient follow-up by phone and mail. As shown in Figure 2.1, an EHR screen prompts clinicians to select one or more treatment options, which are then arranged by TCI staff (e.g., make quitline referral, schedule and conduct on-site group counseling, and provide NRT). TCI staff also provide bedside consults for hospitalized smokers. The TCI staff at all 10 facilities use a standardized relational database to track the treatment process (e.g., patients referred, contacted, scheduled). With this database, we can identify areas for improvement.⁸

Figure 1. The TCI Clinical Protocol, Version 3

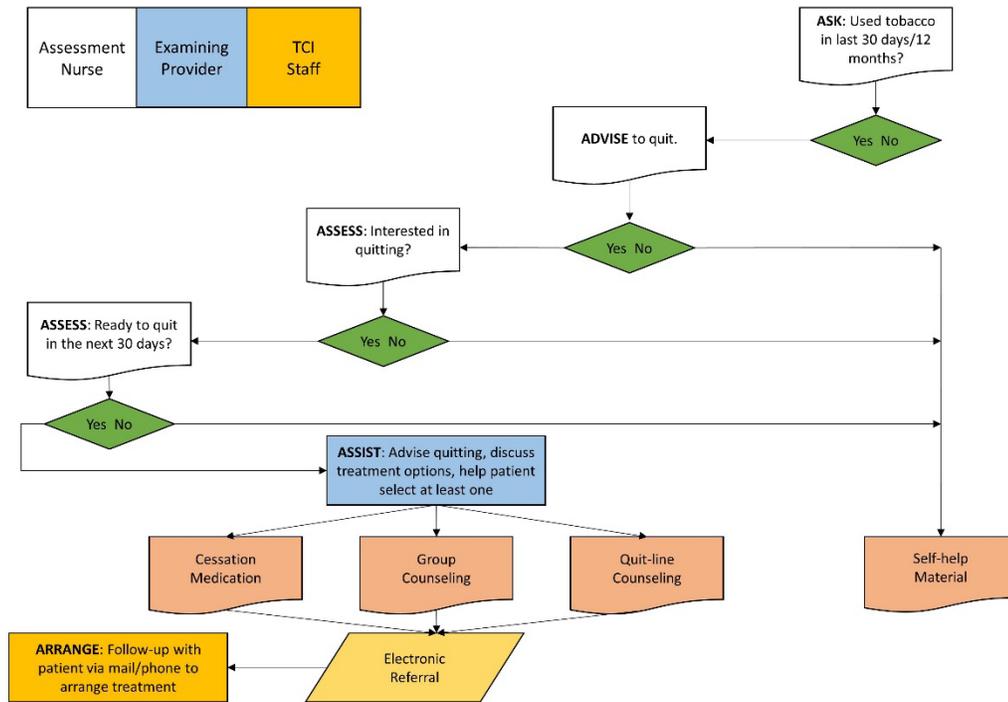
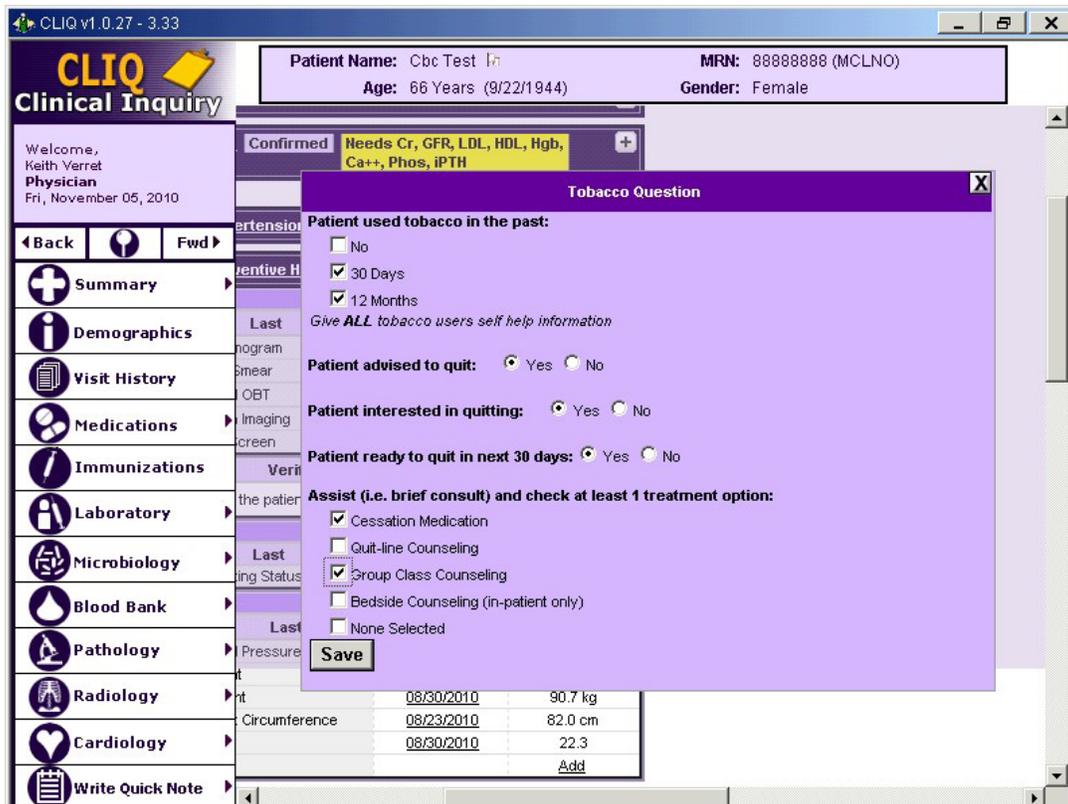


Figure 2.1. CLIQ EHR Screen Shot—Tobacco 5A Intervention



In 2005, we also completed a pilot of our care model and clinical processes and made modifications. We then phased a roll-out across all facilities in 2005 and 2006.⁸ At the same time, we hired and trained the TCI staff—up to three per site, and established a tobacco control team at each site consisting of nurses, physicians, patient educators, representatives from social service departments, and other potential champions. We developed a multilayered training program for the TCI-funded site coordinators and for the other health care professionals in the LSU health system. In response to needs identified by administrators, we placed the TCI staff at each site to do significant pieces of work, thereby reducing both administrative and clinician burden. Specifically, the TCI staff sought to identify influential stakeholders, coordinate clinic integration, conduct clinician and clinic staff training, and arrange cessation services for all referred patients ready to quit within 30 days.

Hospital administrators were largely unaware of the legislative mandate behind the TCI; thus, it was not a factor in achieving buy-in. Rather, to gain cooperation, we focused on a win-win-win approach. We integrated the tobacco cessation initiative into existing processes of care through the chronic disease program underway among all hospitals in the system, achieving a win for the TCI; we made evidence-based treatment of tobacco use available as standard care for all patients at low or no cost, achieving a win for patients; and we helped facilities meet accreditation and recognition from a variety of organizations (e.g., Joint Commission, National Committee on Quality Assurance), a win for the health care delivery system.

At the start of the program, we did not have access to patient smoking status and, thus, used paper referrals. As a result, patient referrals for tobacco treatment and data collection were labor-intensive. We recognized early that we needed an electronic system—a central entry point to enter data from multiple data sources. Consequently, the TCI management team took on the task of integrating tobacco user identification and interventions into the CLIQ system. We found ourselves implementing the TCI in a large and complex system, while we were also building the electronic infrastructure—a challenging set of conditions.

By 2010, we were working on developing a third and refined version of CLIQ measures to identify tobacco users in clinical settings and track clinician adherence to 5A interventions. With those revisions, a clinician is now able to progress through each question, enter data, save, and receive a graphic of the patient responses that shows if a patient is smoking or has made a quit attempt during the past 90 days.⁶

Question 6: With multiple sites and several thousand clinical staff, what kind of training was offered to support the TCI system implementation?

Answer: Training has been a very important component of the TCI, and we have reached hundreds of clinicians during several years. This includes training for our TCI staff, as well as training for clinicians and clinical support staff throughout the LSU hospital systems. Incoming TCI treatment staff received a 6-week orientation and training on a range of topics—HIPAA, tobacco 101, working with special populations, motivational interviewing, and tobacco treatment (e.g., [Freedom from Smoking program](#)). In 2011, all TCI staff obtained [Association for the Treatment of Tobacco Use and Dependency \(ATTUD\)](#) certification as tobacco treatment specialists.

We did in-service training with clinical staff at all sites, including presentations on the overall program, the clinical and EHR protocol, and how to intervene with tobacco users. To build 5A intervention skills and reach more clinicians, we linked our provider learning system to online tobacco treatment resources, such as the [University of Wisconsin CEU course](#) on the PHSG. This one-credit hour course provided us with the documentation of completion of the training. The certificate of completion was submitted to the education department of each facility, and a list of those who completed the course was provided to the TCI staff. Counting both in-person trainings and the web-based course, the number of clinicians receiving training increased to 934 in 2007, 1,445 in 2008, and 1,472 in 2009.^{5,13} To address clinical staff turnover, the TCI created a module that was included in training for new hires and was also offered as a refresher course for required clinician education.

In 2008, the LSUHSC-NO adopted a policy requiring completion of the online course by all nurses and other staff.

Question 7: How did the TCI team monitor implementation and performance at the clinic and provider levels?

Answer: To encourage and motivate change, clinician performance on tobacco interventions was posted regularly on a system-wide dashboard. Initially, the TCI performance assessments were a stand-alone program. Later, tobacco measures were integrated into the performance appraisal system for the disease-specific reports of the chronic disease management program. Facilities and clinics receive quarterly and monthly feedback reports visible to all. Called the “Christmas Tree” report, the feedback includes green (above average performance) and red (below average performance) results for indicators based on guideline adherence for each disease and modifiable risk factors (e.g., hypertension, tobacco use, body mass index); decreases or gaps in tobacco indicators for *Assist* or *Arrange* will trigger retraining by the TCI staff and tobacco control team.

To monitor provider adherence to the TCI’s guideline-based protocol, patient surveys are conducted periodically to assess tobacco use, quit attempts, and perceptions of provider treatment.⁴ Clinician practice patterns are also examined through electronic health record (EHR) queries and a survey of clinicians²; findings and feedback are then provided to each specific site to improve performance. As an example, Table 1 shows the frequencies of 5A’s performance for all sites from a patient survey and an EHR query for January-March 2010.² Note: The EHR Query on arranged follow-up contact within 1 week or 1 month is at 100% because all tobacco users assisted with the selection of at least one treatment option are electronically referred to the TCI staff who conduct follow-up contacts. In contrast, patient reports via survey indicate lower rates of follow-up. This may be because of the patient’s interpretation of the question (i.e., who they consider the health care provider to be, whether or not they received advice to quit, and understanding that the TCI staff make follow-up contacts on behalf of the health care providers).

Table 1. Frequencies of 5A’s Performance from TCI Patient Survey and EHR Inquiry in the LSU Health System among Primary Care Outpatients, January-March 2010.

5A’s Protocol	Frequency (%)	
	Patient Survey 2010	EHR Query 2010
Asked about tobacco use.	740/820 (90.2)	39,424/48,913 (80.6)
Advised to quit smoking.	164/192 (85.8)	11,224/11,372 (98.7)
Assessed willingness to make a quit attempt.	136/192 (71.7)	11,224/11,372 (98.7)
Assisted with selecting or prescribing or recommending a treatment option.	124/164 (76.3)	2,183/3,220 (67.8)
Arranged follow-up contact within 1 week or 1 month.	48/164 (31.4)	2,183/2,183 (100.0)

Abbreviations: TCI, Tobacco Control Initiative; EHR, electronic health record; LSU, Louisiana State University.

Question 8: What results have been achieved over time by the TCI?

Answer: The TCI data collection allowed us to understand the prevalence of tobacco use among our primary care patients for the first time, whereas analyses of EHR data showed improved rates of intervention and quit rates. Quit rates, calculated electronically by using CLiQ data, are defined as quit after 90 days and as a sustained quit after another 90 days.⁵ Quit rates increased from 5.0% in 2008 to 9.6% in 2009.^{5,14-16} We learned from patient and EHR process data, retrieved and reported periodically, that progress was being made on process goals established at the outset. In 2011, we achieved and sustained a 90% rate of identification among all sites. Among tobacco users who were assessed as ready to quit, 80% were recorded as receiving assistance with treatment selection. Of these, more than half selected medication (54%) and group counseling (51%), whereas more than a third (38%) selected quit-line counseling.¹³ The TCI program now provides 60% of all fax referrals to Louisiana's quitline. Patient surveys also show significant improvements over time in patient reports of receiving treatment and patient awareness of cessation services.

Two LSU TCI studies were also conducted recently, and results have been published.^{2,4} To evaluate the effect of the TCI 5A protocol (ask, advise, assess, assist, and arrange), Moody-Thomas and colleagues conducted a prospective study by using data collected at 2 time points about 571 and 889 adult patients from LSU Health primary care clinics in 2004 and 2010, respectively.⁴ Patient reports indicated that provider adherence to the 5A clinical protocol increased from 2004 to 2010 on assess (39% vs 72%), assist (24% vs 76%), and arrange (8% vs 31%). Patient-reported quit attempts increased, and awareness of cessation services increased (from 19% to 70%, $P < 0.001$).

To assess systems change within the TCI sites and the effect on quits, Moody-Thomas and colleagues completed a system-level analysis by using EHR data for 79,777 patients and 1.2 million adult primary care encounters from January 2009 through January 2012. Results were published by the *American Journal of Public Health* and show that all seven sites sustained systems change and achieved a near perfect screening rate (99.7%).¹⁷ (As might be expected, intervention rates extracted from the EHR differ somewhat from patient reports and are consistently higher.) During this study period, there was 9.5% relative decrease in prevalence of tobacco use, and each intervention (defined here as asked and advised) increased the relative odds of a 6-month sustained quit by 1.5%.

Question 9: What lessons have you learned that might be helpful to others?

Answer:

- **Staff are the key:** Provider training and feedback are critical to making the system changes work. Our experience also confirmed the wisdom of one strategy—having staff within each hospital dedicated to tobacco control. For start-up and implementation, we had from 1 to 3 TCI staff per site or 15 in total; today, with the expanded use of EHRs reducing the data management burden, 6 TCI staff cover all facilities.
- **Practice the 3 P's—practical strategies, persistence, and patience in implementation:** Working in a large, complex environment, such as our public hospital system, we learned that our team needed to be *practical*, *persistent*, and *patient*. With lots of interconnected parts, synchronicity was not always possible among sites with implementation or clinician training. We had to be practical; we moved to implement what we could, when we could. At any point in time, the system (and the people in it) can revert to old routines, and our momentum would be lost. *We used data to keep the pressure on and keep a persistent call for change.* Systems change is gradual, and patience is required. However, once you reach a certain tipping point, progress accelerates, and the rewards increase correspondingly.
- **The “WWWs”—win-win-win—are critical to obtain and sustain buy-in:** When we were getting started, we needed to conceptualize wins across all levels—system, clinician, and patient for treatment of tobacco use as an integral component of quality care. Our job is to deliver cessation treatments and integrate interventions into practice, systemically and electronically, so that data can be used to demonstrate health improvement and cost containment.

Question 10: What do you see as future directions for the TCI and cessation systems research?

Answer: We need to use our data to further improve care delivery and patient quit outcomes. The data allow us numerous options for program refinement. For example, we are currently exploring the use of geocoding to assess the effect of living proximity on attendance at group behavioral counseling sessions.¹⁸ The use of geocoding makes it possible for TCI staff to tailor treatment options to the needs of patients. Although all options may be offered to all smokers, follow-up contact with those who fail to use the selected treatment may be more effective if proximity is used as a proxy for access, (i.e., likelihood of participating). Then, TCI staff can promote enrollment in an equally effective and more acceptable treatment that the patient is more likely to use (e.g., quit line versus group counseling). This use of our data aligns with our original goals: (1) conducting ongoing evaluation to guide program development and improve adherence and outcomes; and (2) identifying evidence-based interventions that are both appropriate and acceptable to patients served by the state hospital system. These goals are best accomplished by expanding the uses of our data.

Performance partnerships are an innovative approach to increase smoking cessation.¹⁹ We will use these interdependent relationships and performance partnerships within the LSU health system to improve health outcomes for priority populations, including pregnant smokers, and to change the path to health of smokers who have not yet developed comorbid conditions.

For information and practical insights, see our recent 2013 publication, *Use of systems change and health information technology to integrate comprehensive tobacco cessation services in a statewide system for delivery of healthcare.*⁵

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