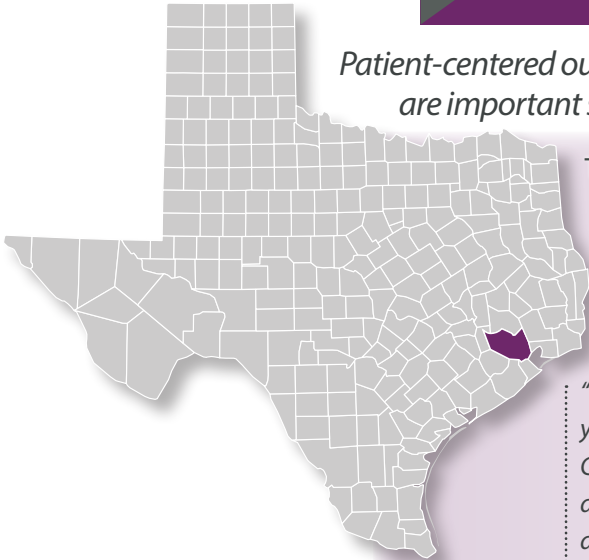


### Technology Intervention Improves Care for Tuberculosis Patients

*Patient-centered outcomes research (PCOR) and comparative effectiveness research (CER) are important sources of data to inform local population health decisions.*



Texas' Harris County Public Health (HCPH) spearheaded a PCOR/CER study in which the organization compared the cost-effectiveness of implementing video-directly-observed-therapy (VDOT) to traditional directly-observed-therapy (DOT) in context of a tuberculosis program.

*"In the public sector, the obvious value that everybody goes to is the bottom line: did you save money? But I would argue that there's also value in going through the [PCOR/CER] process because your team gets more energized by their ability to see something different than the way they would otherwise see the world. There's also value in having different stakeholders at the table." – Umair A. Shah, MD, MPH, Former HCPH Executive Director & Local Health Authority*

#### Methods

- In the VDOT model, medications were delivered to patients on a weekly, biweekly, or monthly basis and a video platform was used to show the medication being taken. In the traditional program, an outreach worker or a nurse would physically go to patients' homes every day, 5-7 days a week, for 6, 12, or 18 months. The health department's hypothesis was that the VDOT model would be more cost-effective than the traditional program.

#### Results

- The VDOT model ultimately exceeded expectations. In fact, HCPH received national attention for the effectiveness of VDOT during Hurricane Harvey: 59 out of 61 tuberculosis patients in the Houston area who used VDOT never missed a dose while the 47 patients who used DOT had to extend their antibiotic regimens by two weeks to make up for unobserved time. HCPH proved that VDOT was not only more effective during emergencies, but also that it significantly reduced travel time for staff, yielded significant cost savings, and was more convenient for patients who otherwise would not be able to leave the county.<sup>1</sup>

#### Value of PCOR/CER

HCPH gained significant and different kinds of value from pursuing their research comparing the effectiveness of VDOT and DOT programs.



**Building efficiency through technology.** While most traditional metrics focus on the "bottom line," such as cost savings, the health department emphasized the nontraditional benefits of PCOR and CER. Even if the VDOT model did not demonstrate cost-effectiveness, for example, the innovation would still be worthwhile because it would be far more efficient to scale the program with technology than without.

**Inspired and motivated staff.** In addition, participating in PCOR and/or CER efforts positively impacted staffs' experiences; many reported feeling inspired by the innovation and proud of their involvement in the effort.



**Stakeholder engagement.** HCPH also found value in bringing different stakeholders to the table through PCOR and CER. Through the VDOT program for example, the health department formed a new relationship with Verizon Communications that otherwise may not have been possible.

## Value of PCOR/CER *(continued)*



**Lessons learned.** The health department also highlighted the potential of using PCOR and/or CER to inform other internal efforts within the organization.

**Impact on other organizations.** Finally, building a reputation as a health department that is willing to be innovative can be helpful in demonstrating the effectiveness of novel initiatives for other organizations that may be more constrained. HCPH, for example, shared their VDOT guide publicly and presented their experience at numerous events.



### Key Stakeholders

- **Public health department stakeholders.** Several stakeholders within HCPH were involved with the project. Leadership, such as decision-makers at the department level, had to agree to pursue the idea and champion it. Staff also had to operate and run the program. The health department's tuberculosis program was heavily involved because of their expertise on the subject and relationships with the patients. Human resources, information technology, and program policy staff were also part ensuring successful execution of the program.
- **Technology company.** HCPH had leveraged a new funding opportunity to make a technology investment in the VDOT platform. To that end, federal and state stakeholders had to give permission to use the funding for that purpose and a technology company had to have the ability to build the platform
- **Individual patients with tuberculosis** who would be using the VDOT program. Some even became peer champions for other patients with tuberculosis.

#### References

[1] Trickey, Erick, et al. "The Health App That Beat Hurricane Harvey." POLITICO Magazine, 18 Jan. 2018, [www.politico.com/magazine/story/2018/01/18/what-works-health-app-harvey-216479/](http://www.politico.com/magazine/story/2018/01/18/what-works-health-app-harvey-216479/).

### At A Glance

Health Department Name	Harris County Public Health (HCPH)
Health Department Location	Harris County, Texas
Health Department Size	Large (serves 500,000+ people)
Health Department Setting	Urban
Project Description	Cost-effectiveness of video-directly-observed therapy versus directly-observed therapy for tuberculosis patients
Project Funder	Medicaid 1115 waiver
Health Department Role	Project lead
Facilitators and Barriers to PCOR and/or CER	<ul style="list-style-type: none"> <li>• <b>Facilitator:</b> buy-in from leadership, middle management, and frontline staff</li> <li>• <b>Barrier:</b> staff resistance to change</li> </ul>
Value of PCOR and/or CER	<p>PCOR and CER provide an opportunity to:</p> <ul style="list-style-type: none"> <li>• Realize nontraditional benefits of pursuing innovative programs</li> <li>• Collaborate with diverse stakeholders in the community</li> <li>• Inform internal health department efforts</li> <li>• Build a reputation as an innovative health department</li> </ul>