

## A case-study of cross-jurisdiction resource sharing; the merger of two Tuberculosis clinics in East Tennessee.

### **Investigators**

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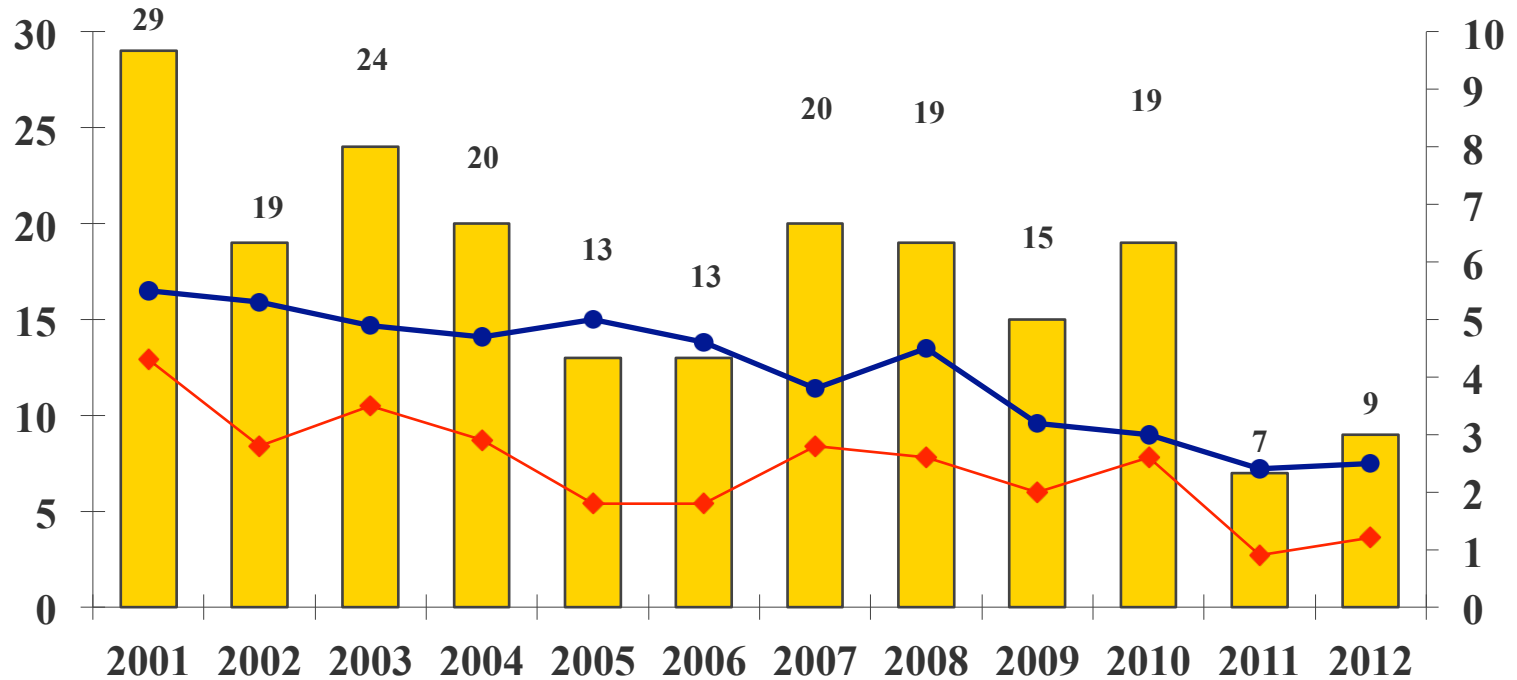
- There are no conflicts of interest to report

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### **Background**

- Historically, Knox County Health Department (KCHD) and East Tennessee Regional Health Office (ETRHO) have maintained two separate TB programs. In October 2011, the TB clinics merged.
- The incentive for the merger was a need to cover physician services, but the merger took place in the context of a lower burden of TB cases in the region.

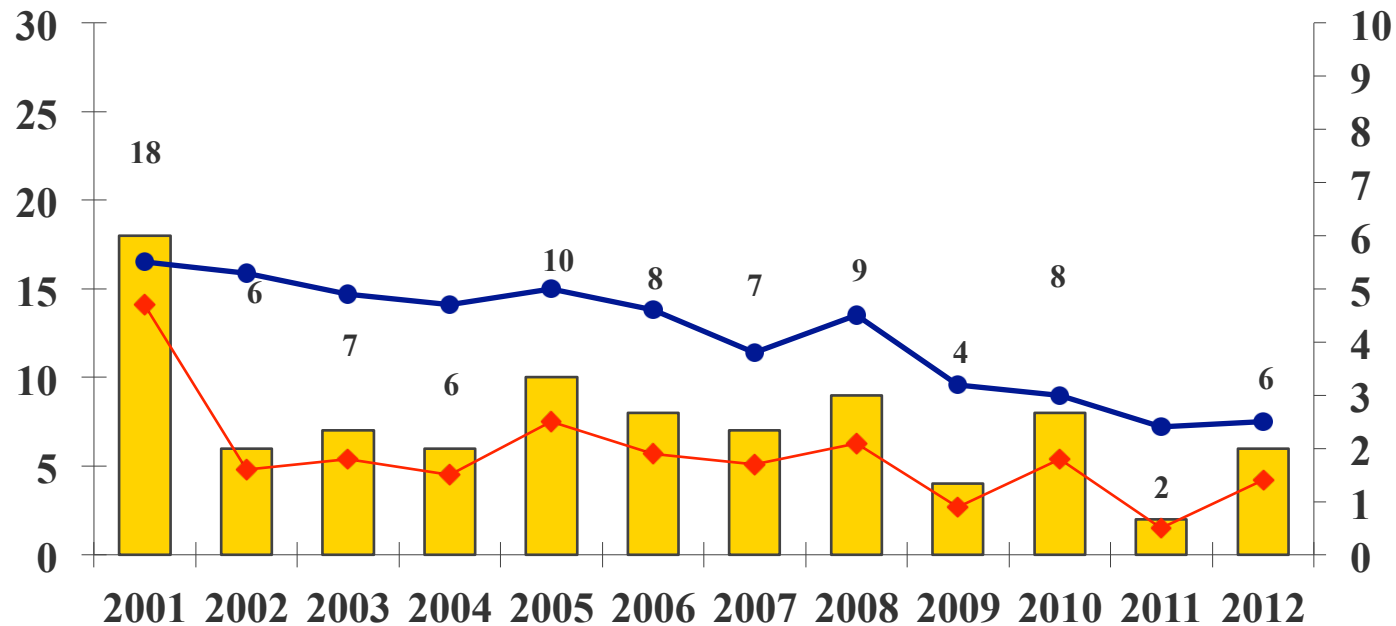
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Cases
  Case Rate
  TN Case Rate

**Tuberculosis Cases and Case Rates**  
**East Tennessee Region, 2001-2012,**  
**TB Elimination Program, Tennessee Dept of Health**

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### **Research Objectives**

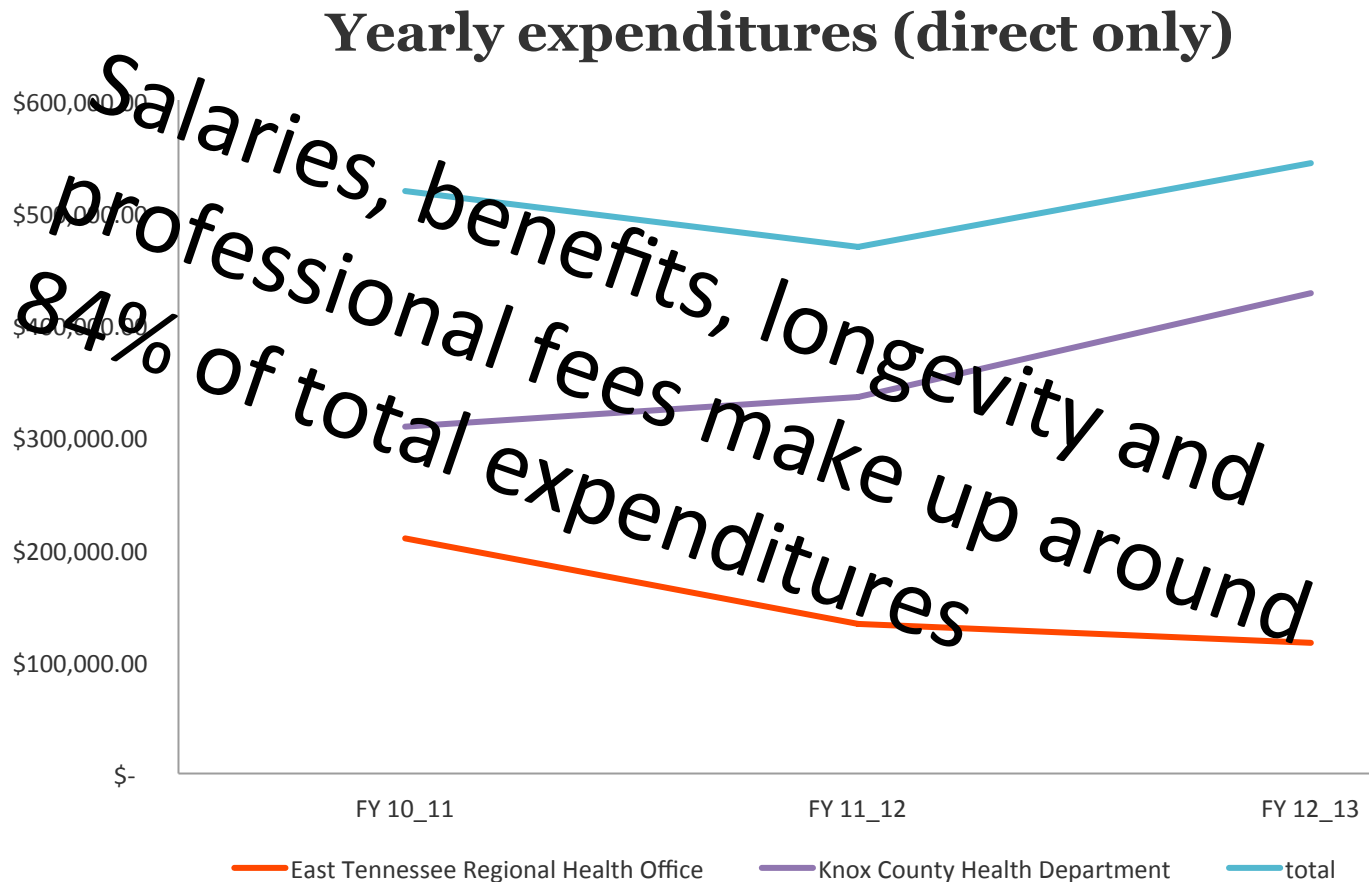
- To determine whether the merging of the clinics resulted in changes in service provision efficiency.
- To describe the problems and coping strategies adopted by staff as a result of the clinic merger.

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### **Mixed methods design, Data sources**

- Personnel FTE data from local health departments
- Chart review for latent TB outcomes, Jan 2010-Dec 2012
- Interviews of staff for qualitative component

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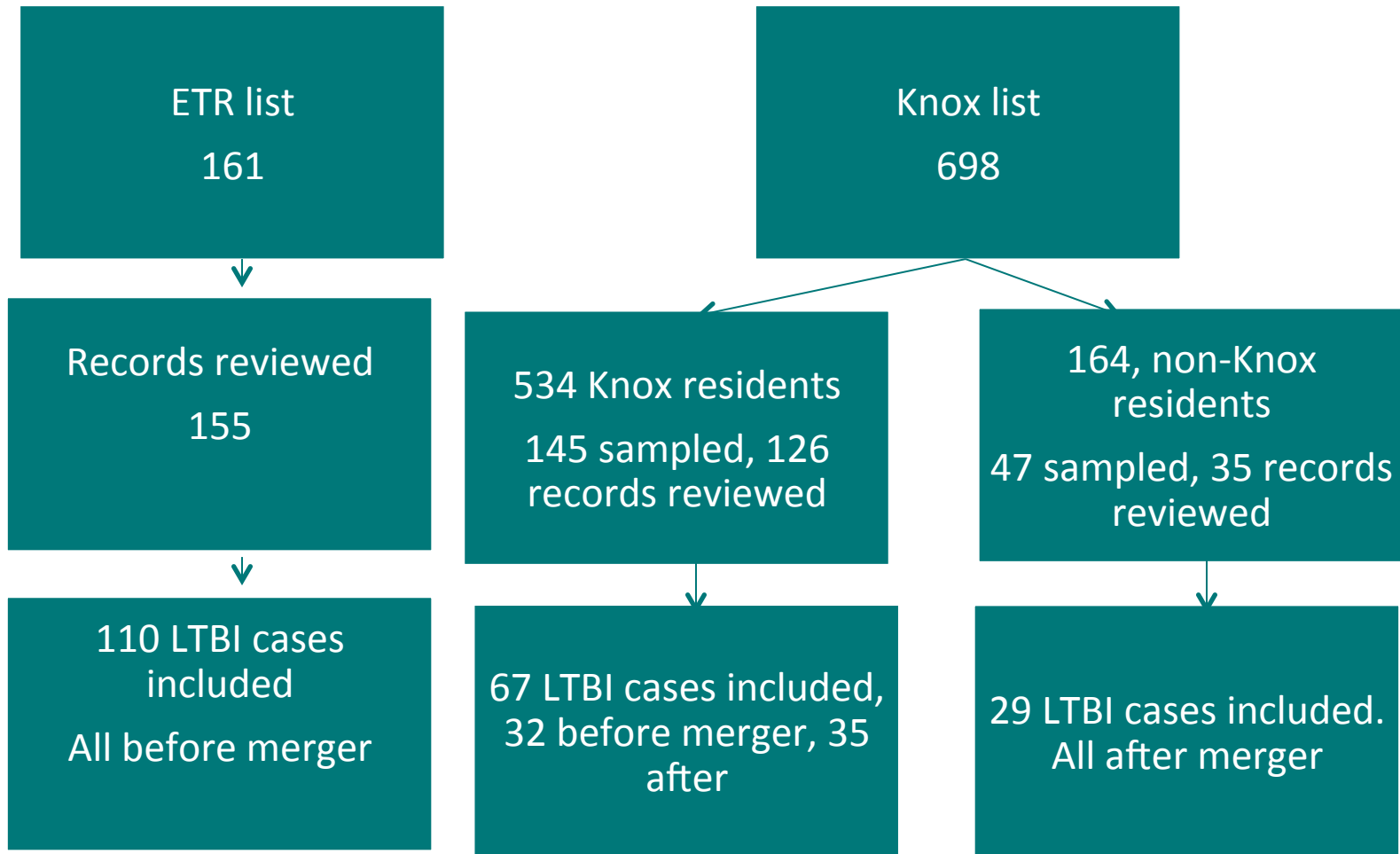
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KCHD BEFORE MERGER	KCHD AFTER MERGER	CHANGE
0.5 nurse manager	0.6 nurse manager	+0.1
1.5 TB nurses	2 TB nurses	+0.5
0.5 public health investigator	1 public health investigator	+0.5
1 nurse practitioner	1 nurse practitioner	0
1.5 clerks	1.5 clerks	0
0.1 physician	0.1 physician	0
0.5 patient services manager		-0.5
1 radiology technician	1 radiology technician	0

ETRHO BEFORE MERGER	ETRHO AFTER MERGER	CHANGE
0.13 nurse manager	0.03 nurse manager	-0.1
2 TB nurses	1TB nurse	-1
1 secretary	0.3 secretary	-0.7
0.1 radiologist technician		-0.1
0.1 physician		-0.1
0.1 interpreter		-0.1

**Staff Full Time Equivalents employed in TB services before and after the merger**

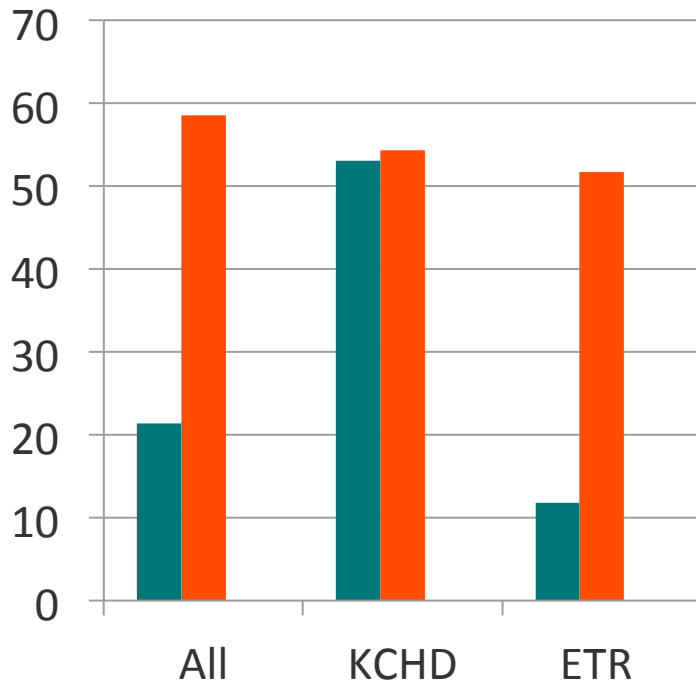
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**Sampling and number of cases included in chart reviews**

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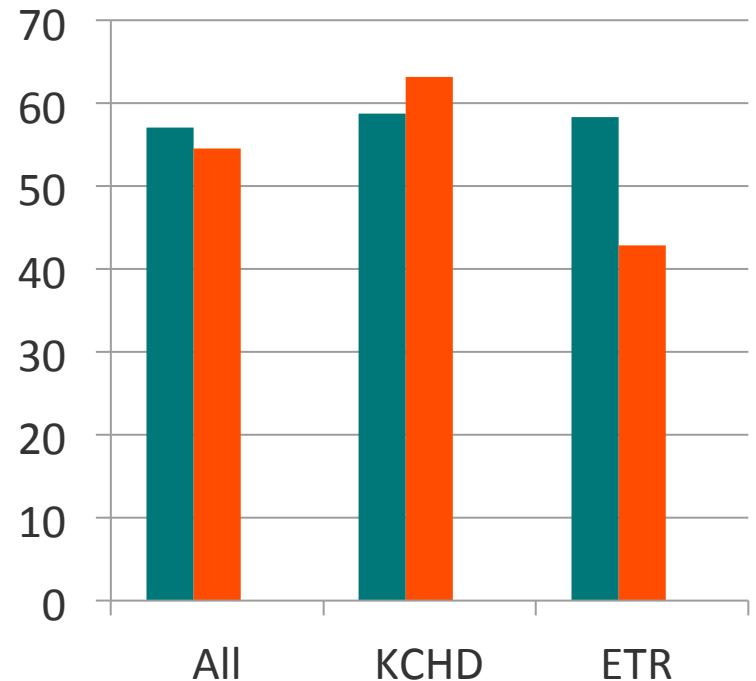
**Treatment start rate in KCHD and ETR residents %**



■ before merger ■ after merger

Significantly higher after the clinic merger, in ETR group and combined

**Treatment completion rate in KCHD and ETR residents %**

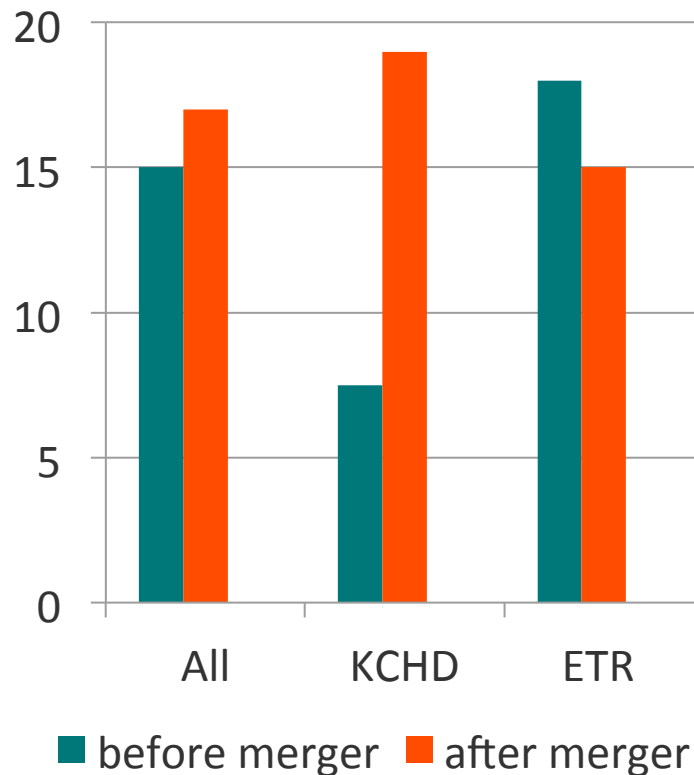


■ before merger ■ after merger

No significant change

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**Clinic appointment times in KCHD and ETR residents, measured in days**



The clinic appointment time increased after the merger in the KCHD residents, perhaps reflecting an increased stress on the system after the merger. This result was borderline significant ( $p=0.081$ ).

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### **Themes Extracted from Interview Analysis**

- Advantages
- Perceived advantages
- Change in practices
- Learning mechanisms
- Solutions adopted
- Resolved problems
- Unresolved problems

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- Issues such as more advanced radiological equipment providing patients with a better service, presumed efficiency savings in terms of cost savings for the system as a whole, presumed more efficient use of professional expertise and time.
- A direct advantage to staff related to having a central team dedicated to TB work:
  - “TB is all they do. So they’ve got ..., more time to focus on you....And just that they have more time to do that. ..they may not be able to say, “Well, you all are going to have to go out there and do that because we’ve got this going on.” ... that would have been hard for us. But like I said, they were invaluable with that patient”
- Some staff did not really see an advantage to the merger at all.

**Advantages of the merger: perceived and direct**

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- Overall staff did not feel the merger had altered their day to day work in a significant way
- There was little warning about the changes prior to the merger, and many were unaware of protocols of other staff. Staff tended to learn new methods of working by example rather than through planning.
  - “the staff here at the health department was not a part of the planning or the meetings”
  - “ I just kind of learned through some of the paperwork and just by talking with the nurses what they can do and cannot do”

**Changes in practices and learning mechanisms**

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- The time immediately following the merger was described as confusion. County nurses routinely get orders and advice from the central team. Having been used to a specific routine as well as specific individuals, new systems had to be contended with:

*“how we were going to do it and whose responsibility was it going to be”;*

*“getting familiar with stuff that we really didn’t know that well, and developing that relationship and learning to work with them”*

*“We had to learn how they wanted things to be done”*

- There was a process of adaption, with face-to-face meetings being particularly useful in enabling this:

*“ you can network at that time on ideas like if I’m having trouble scheduling an appointment. How do I need to go around that, manage that. And that was something that at Knox County, when we had this meeting, that they helped us to kind work through, you know, you call this person or you can always call me or ... you know. That gave us options, which helped”*



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- Making appointments were mentioned as problematic, by both the ETR and KCHD staff, as well as duplicity of management and structures.
  - “I can already tell you one of the problems that some of the ETRO people have is contacting me”
  - “one of the disadvantages is having to serve two masters in a sense.... Having to work with two different ... organizations that have different way of operating”
- Management related issues related to conflicting ideas between different organizations about the allocation of work in the program and the allocation of funding.

**Unresolved problems**

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### Conclusions

- An increase in treatment start-rate, but not treatment completion rate. This represents an increase in resource-demand during the first year after the merger, with an overall increase in number of people completing treatment.
- A reduction in overall staff hours was found
- Efficiency improvements may be difficult to achieve during a period of adoption of new working arrangements.
- Further follow up over the coming years could show how efficiency measures change with time.
- Features that seemed important in this case allowing functioning after the merger included face-to-face meetings and continuation of previous roles.

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### **Thanks**

- Sponsors Robert-Wood Johnson Foundation
- Staff of TB programs of KCHD and ETR
- Staff of TB Elimination Program, Tennessee Dept of Health