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Using cost analysis to identify cost saving strategies in delivering STI services

Florida Public Health PBRN

UF Health
UNIVERSITY OF FLORIDA HEALTH
Center for Health Equity & Quality Research

Research Team

- Bill Livingood Ph.D. and Bonnie Sorensen M.D. are the Principle Investigators
- Lori Bilello Ph.D., Project Director and Co-I
- Jeff Harman Ph.D., Health Economist
- Stacey Shiver and Phil Street, FDOH
- Karen Chapman, M.D. and Judy Hartner, M.D. (CHD directors)

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Background

- Funding crisis for Florida County Health Departments (CHD) for STI services – reductions in federal, state and local funding.
- STI rates continue to be one of the highest in the country, especially for gonorrhea, chlamydia and HIV.
- Florida had formed the PH PBRN in 2010 to research key issues that affect public health practice.
- Received funding by the Robert Wood Johnson Foundation Delivery and Costs Project (DACS) in 2013 and PHSSR in 2015.

Why Study Cost of STI Services?

- STI prevention and control programs are among the most highly reported local public health services/ surveillance data
- Surveillance data is well established and standardized (CDC methodology)
- Service provided by every county in the state
- Strong finance and service data systems to support service delivery
- Florida has high AND increasing rates of STIs – major public health issue!

Variation in Approach to Cost Analysis

- Start with micro cost analysis with small sample based on convenience or pre-identified characteristics and generalize to larger body
- **Start with macro analysis of larger group and drill down to explain differences (dependent on valid established data reporting systems)**

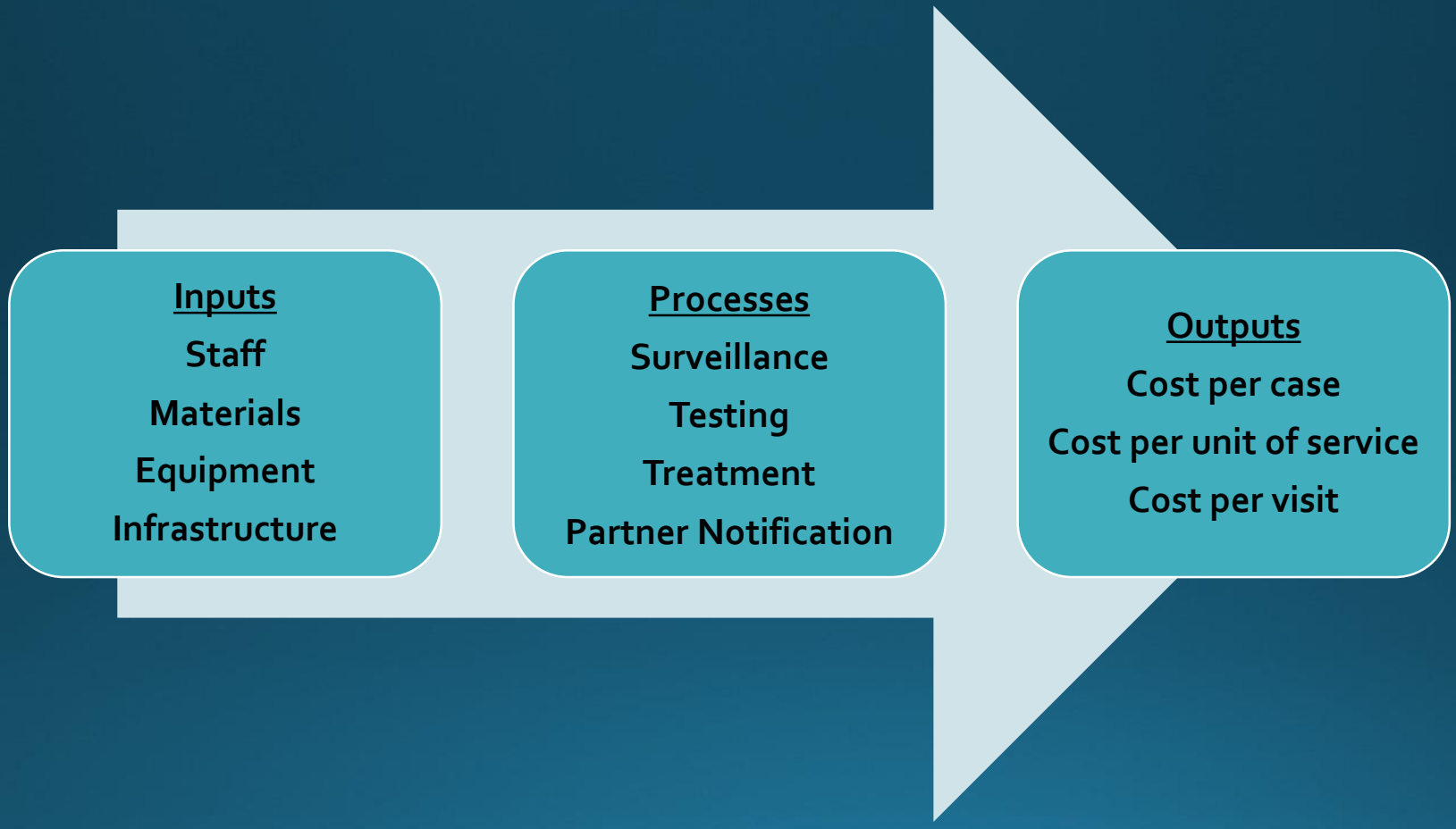
Primary Aims

1) To identify the unit costs of delivering STI prevention and control services and examine the effects of variations in delivery system characteristics on costs including:

- standardization/centralization of programs
- centralization of IT and HR systems
- economies of scale related to population size of CHD jurisdiction
- local tax and other revenue support for CHD services

2) To identify cost saving strategies for the delivery of STI services through a quality improvement process.

Overall Cost Model



Data Sources

Secondary Data

- Expenditure data - Financial Information Reporting System (FIRS)
- CHD Revenue data – FDOH Health Statistics and Performance Management Division Budget data
- STI counts/rates – FL Bureau of STD Prevention and Control
- Demographic Data – FDOH and US Census ACS data
- PRISM – STD services data

Primary Data

- County health department survey

Detailed costs per case (state average)

Category	Average cost per case	% of Total
Personnel (salaries/fringe)*	$244	81.2%
Supplies	$9	3.2%
Travel	$3	0.9%
Building rental/maintenance	$9	2.8%
Lab services	$16	5.3%
Contractual services	$11	3.7%
Other costs	$9	2.9%

*Average salary/fringe per DIS is $45,670

Range of county reported costs for STI (FY11/12)

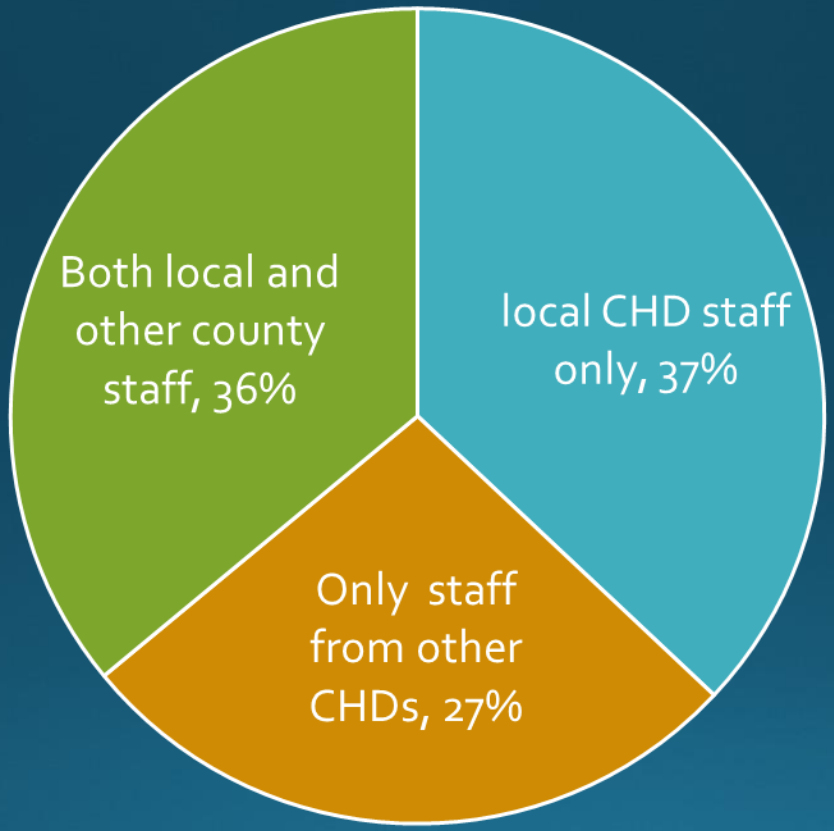
	Cost per case	Cost per visit
State rate	$300.90	$157.56
County Median	$283.44	$119.40
Lowest level	$1.81	$1.43
Highest level	$893.89	$293.69

Variation Explored

1. Interviews with key informants to discuss and clarify cost variations identified during 2^0 data analysis

2. Surveyed all 67 CHDs
   - Cross-jurisdiction sharing of STI staff
   - Other staff involved in STI investigations
   - Detailed information on level of service delivery by priority populations
   - Community collaborations for testing and outreach

STI Investigations Staffing Arrangements



Other Staff performing STI investigations

Types of Personnel	# of counties
Nurses	24
PAs/ARNPs	10
Physicians	4
Other Staff (supervisors, surveillance)	6

Treatment Verification, Interviews and Partner Notification

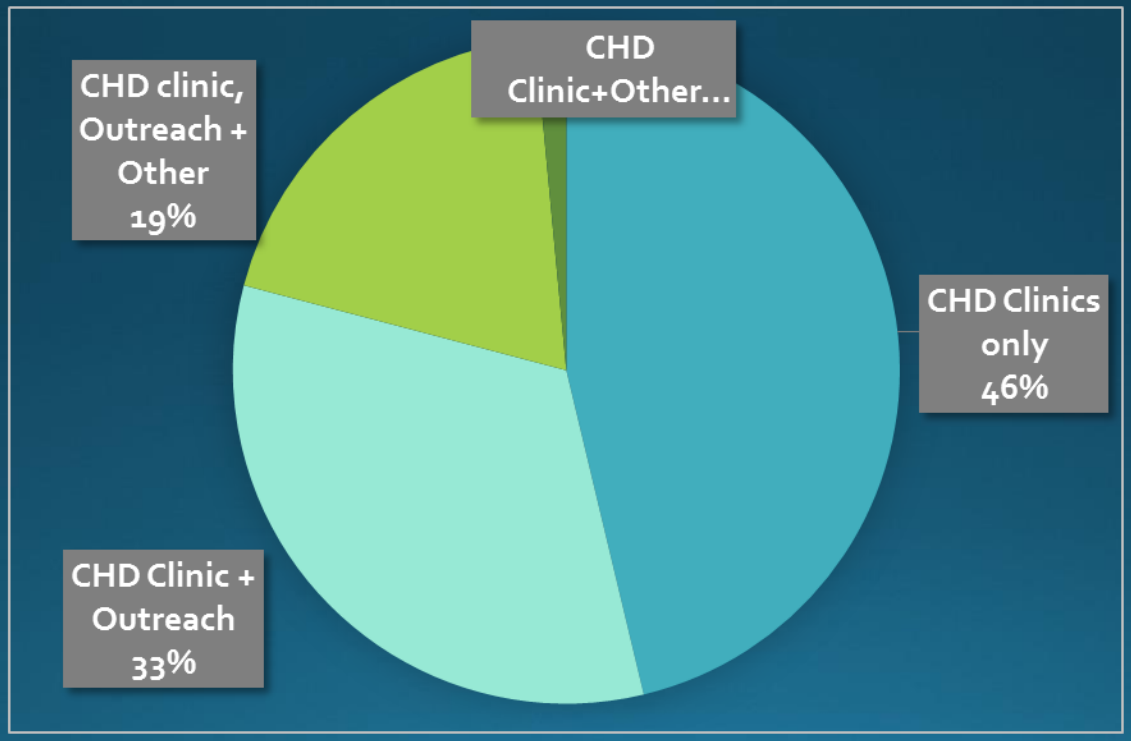
- Most CHDs reported following the Priority Tier Action Grid for treatment verification for those tested positive from the following sources: CHD clinics, private physicians, emergency departments and hospitals.
- Average time it takes to do treatment verification from the following sources (number reported)

Minutes	Private Physicians	Emergency Departments	Hospitals
Less than 10	14	12	12
11-30 minutes	29	29	31
31-60 minutes	2	4	2
Greater than 60	8	7	8

- Less counties reported doing interviews and partner notification than treatment verification, especially for non-CHD clinic patients.

STD Screening

- Almost half of the health departments only do STD screening at their clinics (46%) while 33% also did outreach, and 19% responded to all three screening site options.



STD Screening Partners

- 48% of CHDs reported partnering with community agencies for STD screening activities
- Partners included health related organizations (hospitals, FQHCs, community based clinics, Planned Parenthood) behavioral health agencies, jails and detention centers, churches, neighborhood centers, and others.

Regression Analysis

Outcome variable – STD cost per case (by county)

Predictors

- County characteristics:
  - Population density
  - STD rates
  - % nonwhite
  - % 24 or under
  - % below 200% poverty
- CHD characteristics
  - Additional funding from county government
  - Service delivery practices

Only 2 variables were found to be marginally significant

Variable	Coefficient	P value
County tax revenue per capita	15.03	.023
Partnering with community organizations	-78.59	.087

Findings

Funding:

- Different sources of funding impacted the level of services provided
- Wide variability in discretionary or local tax funding for county health departments
- Those CHDs that received county funding had higher unit costs

Service delivery variations:

- Cross jurisdiction sharing of DIS and surveillance staff for some counties, especially small rural counties
- Variation in the extent of STI investigations of certain populations due to funding and staffing constraints
- Over qualified staff performing DIS services in some counties

Inefficiencies identified include:

- Some services redundant to what is provided by the private sector
- Variation in screening and testing procedures – some more labor intensive than others

Conclusions and Implications

- Even with Florida's comprehensive data systems and statewide policies and procedures for the delivery of STI services, large variations exist in the cost and delivery of these services by county.
- Those counties that have local funding also have higher costs but also provide more comprehensive services.
- This data is being used by the practice community to redefine what types of STI services should be delivered by health departments by identifying and prioritizing cost saving strategies

Cost Saving Strategies

- Eliminate treatment verification for non-CHD positives
- Eliminate partner notification services for certain diseases
- Implement low cost screening methods
- Standardize and promote presumptive treatment
- Consolidate STD and HIV services (maybe even TB and Hepatitis)
- Cross train staff in communicable diseases sectors

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