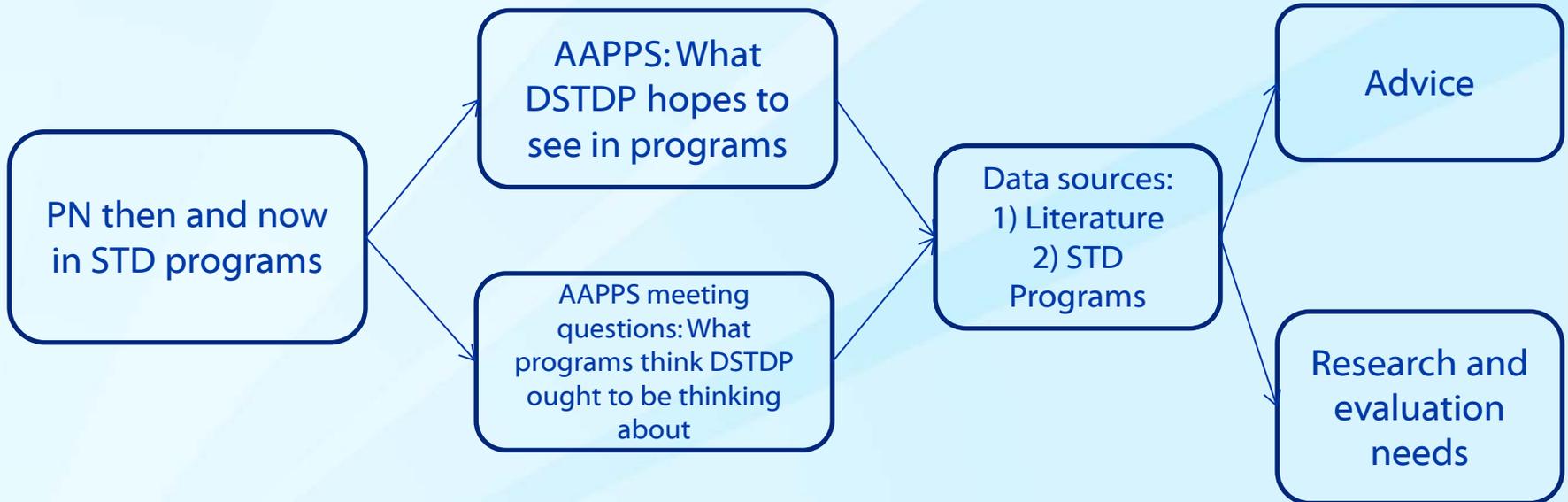# Partner Services:
The Eternal Question

Acknowledgements

- Advice and insight from DSTDP colleagues
  - Review co-authors
  - Effective interventions group
  - PDQIB (especially for the program questions)

- Staff in at least 12 counties representing >18 million people who provided us with 2012 partner services data, workforce, and program characteristics
  - For at least some, this took some effort, and we're grateful
  - And it's program science in action

Overview

Start with context → Then the questions → Information → Answers and gaps

PN then and now in STD programs

AAPPS: What DSTDP hopes to see in programs

AAPPS meeting questions: What programs think DSTDP ought to be thinking about

Data sources:
1) Literature
2) STD Programs

Advice

Research and evaluation needs

Purposes of Partner Services

- Ethical conduct: exposed persons have a right to know
  - This is a complex issue

- The two population health goals:
  - Reduction of disease burden through case-finding
    - Has to be efficient enough to contribute to interrupting transmission if that's the goal
  - "Elucidation of epidemiologic patterns"

Potterat J. *Retrovirology: Research and Treatment* 2014.

Then and now

Start with context →

Then

- Infections
  - Syphilis and eventually gonorrhea (1970s)
- Populations
  - Often not broken out except by sex and sometimes race
  - Mostly local transmission
  - Often plenty of data on place and people in the community, even if not published
- Technology
  - Telephone

Now

- Infections
  - Add HIV and chlamydial infection (and sometimes other STD)
- Populations
  - More data broken out by geography, age, race/ethnicity, sexual orientation or behavior, more bridging, more heterogeneity
  - Variation in the intervention by population
- Technology
  - Email, text, SMS, lots of various social networking sites (e.g., chat pages and 1-to-1)
    - Much of this adds up to increased mobility and range

Approaches and Measures

- Interviewing patients (index cases) and locating and notifying partners
  - And sometimes the patient takes care of the process
  - If they don't, you do.

Provider referral
Patient referral
Contract referral

- Programs collected data on how many people they would try to find per person interviewed and how many people could be brought to treatment
  - Contact index
  - Brought to treatment index
  - NNTI (to find an infected person)
  - What proportion of all cases are found through partner services?

- **Then** and **Now** are not very different from each other!

Table 1.—Result of contact investigation on primary and secondary syphilis during a 6-month period, January–June

[Hypothetical cases]

	Number	Index
Number of cases (previously untreated) diagnosed	1,000	
Number of contacts reported	2,316	
Contact index		2.316
Number of contacts		
(a) with insufficient information to initiate investigation	146	
(b) moved or lives out of area (no disposition returned)	218	
(c) cannot locate	436	
(d) no disposition returned	109	
(e) examined, not infected with syphilis	718	
(f) infected with syphilis	689	
Epidemiologic index		.689
Of the 689 infected contacts		
(a) previously admitted to treatment and did not lapse	214	
(b) previously admitted to treatment but returned to treatment through this investigation	78	
(c) brought to treatment as a result of this investigation	397	
Brought-to-treatment index		.397
Of the 397 cases brought to treatment		
(a) number in primary or secondary stage	228	
Lesion-to-lesion index		.228

all over N(cases index)

AAPPS activities in partner services

Then the questions →

- Increase the provision of targeted and effective health department DIS partner services for:
  - P&S syphilis cases
  - HIV co-infected GC and syphilis cases
  - GC cases with possible treatment failure or suspected/probable cephalosporin resistant GC

- Link partners who have not been diagnosed previously with HIV who test positive for HIV to care

More AAPPS activities in partner services

- These ones aren't boldfaced text
  - Within state law, increase EPT *uptake* per CDC guidelines
  - Increase provision of PS through … communication technologies
  - Link newly-identified HIV-infected individuals in STD clinics to HIV care
  - Link uninsured [persons] to safety net services

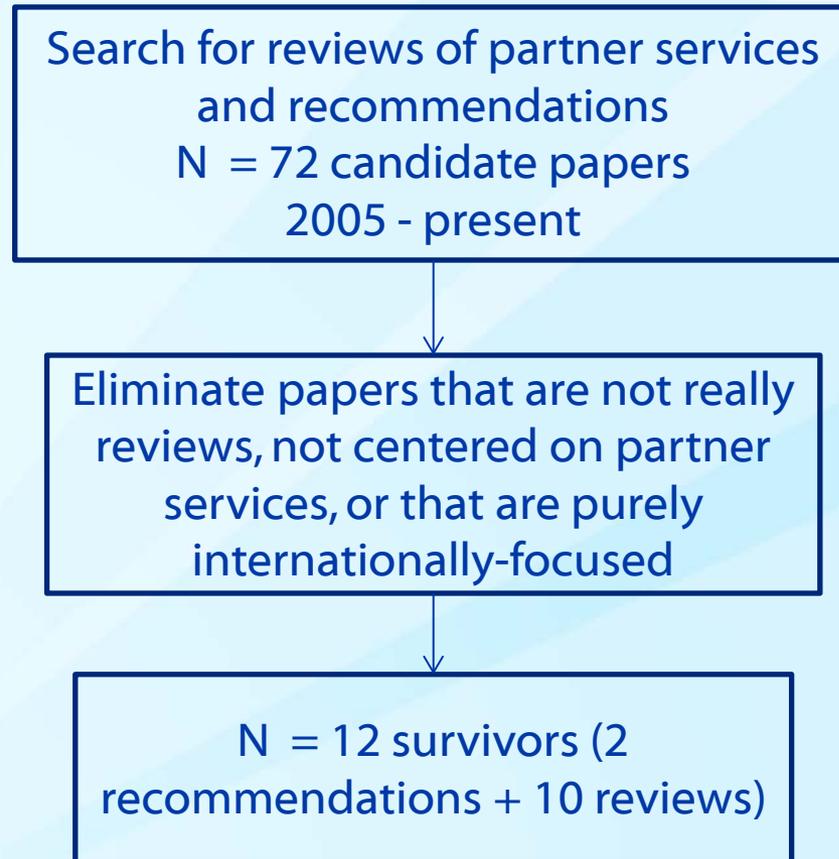# Questions/information from program

Then the questions →

- How should programs prioritize PS for syphilis, gonorrhea and chlamydia?
  - How can modeling be helpful?
  - What rules are there for deciding which cases are "productive"? What can be dropped?

- Linkage to care

- Are we doing this well (efficiency questions)?
  - Evaluating DIS interviewing technique
  - Is the number of DIS correct for the workload?
  - Are DIS distributed efficiently by place or workload?
  - How much is enough?
  - Is there any impact on morbidity?

- Is this the right thing to do?

Sources of data

Information →

- **Existing literature**
  - There are already plenty of review papers.
  - So we reviewed them instead.

- **Program partner services statistics**
  - This is a good starting point for informing current action
  - Also helps address program questions

Sources of data, Part I: Existing literature

Search for reviews of partner services and recommendations
N = 72 candidate papers
2005 - present

Eliminate papers that are not really reviews, not centered on partner services, or that are purely internationally-focused

N = 12 survivors (2 recommendations + 10 reviews)

PN Approach Provider Patient Both	Review	Target population data	Interventions reviewed	Summary of effects	Summary of conclusions or recommendations	Potential HD roles and cost information
Recommendations						
Patient (not formally)	STD Treatment Guidelines (2010) *MMWR*	Clinicians diagnosing persons diagnosed with STD	1. Patient referral instructions. 2. Patient brings partner at time of treatment. 3. Expedited partner therapy. 4. Internet-based partner notification.	1. EPT is associated with reduced infections in the index at follow-up. 2. Some evidence supports IPN	Clinicians should give patient referral instructions, discuss referral options with patients, and consider EPT.	Assure adequate and accurate information on referral cards, education, and counseling, including PDPT.
Reviews						
Patient referral	Trelle et al. (2007) *BMJ* k = 14 studies 1988 – 2006 US, Europe, Africa	N = 12,389. Men and women. STD: gonorrhea, chlamydia, trichomoniasis, NGU, syndromic diagnosis.	1. Patient-delivered partner therapy. 2. Home sampling 3a. Referral cards. 3b. Education or information for partners. 3c. Counseling (Interactive Q&A).	1. RR = 0.73 (0.57 – 0.99) for reinfection; RR = 1.44 (1.12 – 1.86) for partners treated. 2. More partners were tested and treated. 3. Mixed findings on additional partners treated.	"Patient-delivered partner therapy, home sampling, and additional information for partners are more effective than simple patient referral." The common element appears to include involving the patient in the process.	Advisory role on policy or rule-writing (PDPT). Assure adequate and accurate information on referral cards, education, and counseling.

	Common recommendations	Potential HD roles

Patient referral orientation	• **Counseling enhancements** to basic patient referral instruction
	  o Can be from a mid-level provider or trained counselor
	  o Interactive > didactic instruction
	• **Patient-delivered partner therapy**
		• Run an active DIS-based partner services program as a core function – especially HIV and syphilis
		  o Provide specialty assistance for important or hard to reach cases
		  o Generate epidemiology for general STD prevention

Provider referral orientation	• Because **DIS** are more efficacious and costly than patients, they can serve a **specialty role**
	  o Casual partners
	  o Partners who are likely to be key to transmission
	  o Clusters (hidden infections and epidemiologically useful)
	  o Network investigations can be useful in real time and increase the effectiveness of partner notification, especially over time.
	• **Provider referral for HIV** identifies enough new positives to make it worthwhile as a public health activity.
	  o Linkage to care is a substantial benefit
		• Provide rules, technical assistance or (as permitted) advice on policy-making, e.g.:
		  o Referral cards
		  o EPT/PDPT
		  o Counseling
		
		• Generate or participate in applied research, QI and other evaluation
		  • Including cost measures and resource allocation decisions

General	• Partner notification finds a higher than average proportion of infected persons (GC, HIV, syphilis)
	  o But screening and testing have yielded more cases
	• Increasing the proportion of partners treated through enhanced referral is cost-effective
	  o More so than increasing screening
	• Use communication technology
	  o Often population-specific
	• Community-level RCT needed for population-level infection management
	  o Control groups are often "active"
		• **STD clinics as models of excellence and STD programs as coordinating centers for population-based services**

Sources of data, Part II: STD programs

- To date, 12 counties were asked and have provided partner services data from 2012
  - Morbidity, interviews and dispositions of investigations
  - We classed disposition codes into two "buckets"
    - Does the code suggest you found who you were looking for?
    - Does the code suggest you (or someone) provided some remedy or preventive action?

- They also have provided some of their program context.
  - What goes on during an investigation and how many people does it take?

The context in which programs operate

Program area	Area Socio-demographic data	Area Health data
Program area A	Urban/suburban Population: 159,129 Violent crime/100k: 695 Housing problems:[1] 20% Children in poverty: 35% HS graduation: 80%	Poor/fair health: 20% Adult obesity: 38% Teen births/100,000: 85 Uninsured: 21% N/PC physician: 1,108
Program area B	Urban Population: 5.23m Violent crime/100k: 782 Housing problems:[1] 24% Children in poverty: 25% HS graduation: 82%	Poor/fair health: 18% Adult obesity: 26% Teen births/100,000: 49 Uninsured: 19% N/PC physician: 736

www.countyhealthrankings.org

Program operation details

Morbidity (2012)	Workforce and PS-related Activities	PN data	Syphilis	HIV	Gonorrhea
Syphilis = 213 **HIV = 490** **Gonorrhea = 4725**	**Workforce:** 5 DIS + 1 supervisor **Program activities:** • Field testing • Field-delivered therapy • High-risk population testing and messaging focus • HIV linkage to care and patient contact • Linkage to PREP (5 providers in county)	Interviewed (% of total morbidity) All partners claimed Partners initiated (Contact index) Located/contacted (% of initiated) Preventive action (% of initiated)	213 (100) 420 187 (0.88) 139 (73.9) 111 (59.4)	236 (48.1) 426 426 (1.81) 304 (71.4) 230 (54.0)	1554 (32.9) 2270 831 (0.53) 644 (77.5) 558 (67.1)

Common program activities

- Based on 6 responses to date (50% of counties)
  - Linkage to care for HIV (6)
    - Including some with separate service linkage programs/teams
  - HIV testing offered to everyone (5)
    - Some mentions of automatic HIV testing with syphilis and vice versa
  - HIV testing offered in the field (5)
  - Linkage to PrEP (3)
  - EPT practice or promotion (3)
    - Includes 2 sites mentioning EPT promotion to other health providers

Composite PN data (12 programs)

	Syphilis		HIV	
	Range	Median	Range	Median
Morbidity	3 – 585	137	2 - 1279	286
% interviewed	47.9 – 100	98.2	48.1 – 90.6	84.6
Partners claimed (from all cases)	5 – 4101	597	1 – 4511	885
Contact index	0.67 – 2.53	1.34	0 – 3.07	1.21

Partners contacted/located
  % of partners investigated
 	
  Per index case
  Per all cases
	62.8 – 100
	
	0.59 – 2.02
	0.28 – 2.02
		73.8
		
		1.06
		0.84
			63.8 – 85.7
			
			0.54 – 2.28
			0.40 – 1.88
				75.3
				
				0.97
				0.78

Preventive action
  % of partners investigated
  Per index case
  Per total cases
	53.8 – 100
	
	0.51 – 1.27
	0.25 – 1.27
		59.7
		
		0.82
		0.69
			54.0 – 77.0
			
			0.42 – 2.00
			0.32 – 1.65
				61.2
				
				0.75
				0.60

The first two questions: partner services and linkage to care

- Partner services (P&S syphilis, HIV co-infection, AMR GC)
  - Programs are intervening with most syphilis cases that they see
  - And with most HIV
    - Includes widespread linkage to care and partnering with HIV providers
  - In fact, management and outcomes for syphilis and HIV are quite similar (program data)
    - Because the populations overlap substantially
    - To discuss: does an AAPPS "co-infection" PS activity point us toward HIV PS? This is an efficiency question (including for CDC).
    - *The programs are already deep in the business of HIV partner services and look like combined partner notification programs*

  - Patients with GC who do not respond to treatment are priority cases by proclamation (program question)

As for the rest of gonorrhea…

- Programs varied in the extent to which they managed gonorrhea
  - Roughly half had no gonorrhea PS with DIS (i.e., <5% interviewed). How much is enough?
- Recommendations from literature review may help
  - Routine counseling to enhance patient referral instructions
  - EPT
  - Also – a shortened interview form. Time for a validated evaluation?
  - Management of partner services with gonorrhea (and chlamydia) seems like a good way to practice
    - Partnerships,
    - Prevention through healthcare,
    - And a population focused STD prevention program

Partner services and linkage to care: research and evaluation needs

- **Evaluating linkage to care models**
  - Not so much the principle, but the effectiveness of partner services in this process.
  - What is needed?
    - Minimum: multi-site assessment of practice using similar data points (e.g., 90 days retention)
    - Ideal: >1 validated protocols that maximize the efficiency of DIS in linkage to care. That might require program science research.
      - It is patient-centered outcome research…

Remaining questions: brief thoughts

- Prioritizing partner services
  - Routine HIV and syphilis interviews
    - Not really answered: what to offer previous HIV-positive persons
  - Patient referral counseling, with or without EPT, for chlamydia and any gonorrhea patients not otherwise followed
    - Common literature review recommendation
    - Possibly an area requiring implementation and evaluation because practice is not widespread (i.e., an expanded role)

- Are we doing this well (efficiency questions)?
  - Is the number of DIS correct for the workload?
  - Are DIS distributed efficiently by place or workload?
    - What else could DIS do? Linkage to social services; quality assurance, technical assistance, or data oversight in other settings
    - This is an expanded role – by allocating DIS resources to multiple outcomes, can we increase disease intervention effectiveness and impact

Finally

- Are we doing the right thing?
  - Reviews and program summaries are somewhat biased as summaries of what *is* going on.

- What proportion of effort should be devoted to
  - Monitoring and assurance of partner services activities run by partners versus
  - Providing the direct "wrap-around" service of partner services?

- How do we get around to working through all this?
  - What's working in your program?
  - Tell the rest of us – a Community of Practice…

Thanks for your time

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Perhaps the best thing we can do with PS is stop doing things that are utterly unproductive and redirect resources to more productive things.

O'Connor K. *Personal communication*, 2014. (And probably a few other years as well.)