Test of reinfection (TOR) for Chlamydia Trachomatis (CT) and Neisseria Gonorrhea (GC): A protocol to Increase retesting rates

A Baby step approach to improvement in STD monitoring

Susan Mancuso FNP/MSN
University at Buffalo
Buffalo, New York
716-829-3001
mancuso@buffalo.edu

Acknowledgements for valued assistance

- Gale Burstein MD/MPH, Commissioner of Health Erie County Health Department/Buffalo, New York
- Scott Zimmerman DrPH, MPH, director Erie County Public Health Laboratory and staff /Buffalo, New York
- Heather Lindstrom PhD, former Director disease Surveillance Erie County Health Department/Buffalo, New York
- CAIGlobal: Kelly Morrison Odoyke MPH and associates, Region 2 IPP
- Staff at Health Services, University at Buffalo

Disclaimer

- I have not received any funding from the University at Buffalo or any private, non-profit or profit making organization for this presentation.

Objectives

- **Define** the 2010 recommended CDC - STD Treatment guidelines for Chlamydia trachomatis (CT) and Neisseria Gonorrhea (GC)

- **Describe** why Test of Re-infection (TOR), for positive cases of CT and/or GC, is important

  - when to perform this

  - how to perform this (action plan)

- **Compare** the Test of Re-infection (TOR) rates for CT and GC before and after changes in treatment plans

  - what are the components of each plan and especially the final plan

  - can you duplicate our final, successful plan in your college/university clinic?

University at Buffalo, Buffalo New York

- Largest University in the State system
- Population as of 2011: 29,461 students

a. 19,000 undergraduates/ 9,000 Graduates/ ~ 2000 in other campuses

b. Population of student body: variety ages/ USA and many International

Health Services is located on South Campus (city)

a. Funded through student fees/ students must be insured as of 2010

b. No fee services

c. Most common ICD codes used: **sinusitis and sexual health related issues**

Asymptomatic
CDC 2010 Guidelines for CT

- **CT**: annual screening of all sexually active **females** < 25yoa and all older females with risk factors (new partner/multiple partners)
- **CT**: screening encouraged for young **males** in high prevalence settings
  (STD and adolescent clinics, prisons, MSM/MSMW)

OTHER sources:

- **USPSTF** encourage screening for < 24 yoa females only
- **ACOG** screen by risk/location not just age and sex

Follow-up after positive report for CT: Test of Re-infection (TOR) per CDC

a. **NO TEST OF CURE for those treated with recommended regimes**

a. **Due to high prevalence of having CT in females, in those treated in preceding months, the CDC recommends TEST OF RE-INFECTION within 3 months of treatment or, if not within 3 months, at next medical appointment within 12 months.**

CDC 2010 STD guidelines pages 45-46

Test of Re-infection for Ct: WHY?

- **With repeat infections and/or persistent infections →** elevate risk of PID, ectopic pregnancy, chronic pelvic pain, infertility and increased STD disease cost burden
  - **USA 2010 CDC STD trends**: 24,000 females became infertile due to std's every year
  - STD disease cost burden in USA: $13.9-23 billion every year
  - **National Chlamydia Coalition Hot topics 6/2011**: PID occurred in 10-20% of untreated females and TOR decreased sequelae by 80%
  - **Canada** did study of cost of CT disease burden from 1991-2009: > $51.4 million per year

- **Most post treatment infections** were due to partners not receiving treatment, sex too soon after treatment, sex with a new + partner, no condoms etc.
  - **STD 2/2012**: > 10% females were still positive at retesting even if partners were treated?

Asymptomatic
CDC 2010 STD Treatment guidelines for GC

GC (decreased incidence in USA) widespread screening not recommended

- targeted screening of young females < 25yoa is the primary component of control in USA
- targeted screening of at risk males < 25yoa – MSM/MSMW/prisons/institutions/risky behaviors
- NAAT testing point!
- **biggest concern for GC is resistance**
- about 700,000 cases each year in USA

Other sources:

USPSTF targeted testing in females at high risk for STD's only

<u>Follow up after positive report</u>

no test of cure if recommended regime used (new issues as of 8/2012)

Same recommendation as CT: retesting (TOR) within 3 months of diagnosis is best or at next medical appointment within 12 months.

Females have increased incidence of PID, ectopic pregnancy and tubal scarring with long term infection or re-infection.

CDC 2010 STD treatment guidelines pages 49-52 and new addendum 8/2012

How we improved STD testing availability and eventually follow-up rates for Test of Re-Infection (TOR) for CT and GC

Main point of presentation: how we got students tested and how we improved TOR for CT and GC at

University at Buffalo Health Services

How to get students tested:

Started a Collaboration with Erie County Public Health Labs and Erie County Health Department – STD surveillance division

- **Started 2007……named "UB TESTED"**
- Became a WIN-WIN for both UB students, providers at Health Services and ECHD.
- Eliminated EOB concerns
- Cost only $10 – no money needed billed to student account
- Collaboration gave us availability for testing at low cost to student, statistical availability to analyze our results, improved knowledge on STD/HIV for providers (constant assistance on how to improve by ECHD disease surveillance epidemiologist and STD Medical director)
- Began BABY STEP APPROACH in providing better STD services to student population…..changes did not happen over one or two semesters!
- **started CQI protocols to improve STD screening on campus…. and improve TOR rates for CT and GC**

First Collaboration Study: looking at number tested and incidence of communicable disease in college age population

- **First CQI intervention for Communicable diseases at Health Services**: using data from 6/2007 to 5/31/2009. Data compiled by the ECHD division of STD surveillance. **1366 were tested**…….

Characteristics of students tested in this pilot project: **58% tested were white**, 18% Black, 12% Asian, 6% Hispanic, and 6% other or not declared.

a. **For Chlamydia**: the highest positive rate was in **Black males <25 years** of age.
b. 6.5% of positives were **international** students
c. 4.1% of positives were **asymptomatic** screens
d. **6.5% were CT**, 0.4% GC, 0.3% syphilis and 0.4% Hepatitis C
e. **No positive HIV, Hepatitis A or B were found**

Presented at 2010 CDC/STD conference – poster presentation
" High Chlamydia Prevalence Found in a Collaborative Health Department – University Student Health Services Sexually Transmitted Infection screening Program": Lindstrom, Burstein, Mancuso and Zimmerman

Oral Presentation 2009, ACHA AND NYSCHA annual meetings

What analysis of first CQI study revealed?

- Analysis of ECHD data revealed a **"tremendous flaw*"** in Student Health Services reporting and treatment of Chlamydia and over testing of some diseases (low prevalence area).

A. error in reporting and treatment

a. **4 patients (all females) with + CT results were missed by providers** but found in ECHD analysis of data*

1. 3 patients were found and treated but treatment occurred > 6 months after + CT report (in one situation 1 year after + report)
2. 1 patient was found but had graduated and had already been treated for PID (age 23)

B. low incidence of Syphilis, Hepatitis A, B and C and HIV and over testing of low risk students…providers just checked boxes on ECPHL form!

C. → Leads to first CQI improvement……Phase 1 → tracking of + results and improved ordering by providers (risk ordering)

Start of Yearly Quality Improvement for STD Testing and Treatment at SHC - 5/7/2009

A. **Yearly updates – what's new in STD testing, treatment and trends and tailoring of tests to risk** presented by Medical Director ECHD STD clinic….

Start of Phase 1 CQI : improvements made to prevent "missing positive cases" and improve ordering by medical providers

B. **RN intervention: every positive communicable disease report or telephone call is given to RN or replacement if she is off.**

1. **Begin Excel: every positive Infectious Disease followed on spreadsheet by assigned RN.**
2. **RN - Completes/ faxes required ECHD case report form for Reportable diseases to ECHD (STD surveillance division).**
3. **RN - Makes sure student contacted/ treated/ referred if necessary….**

C. **Improved ordering by medical staff: order STD by risk after in-service update on STD trends in USA**

Phase 1 Results: **5/7/09 to 7/12/10**

RN received all +CT/GC reports/calls/faxes: a team effort

107+ CT and/or + GC cases were reviewed by Coordinator

a. **Variables followed on Excel**: Id#, DOB, sex/ethnicity, DOV, date of treatment, med used, provider, TOR and comments

b. **Review of data: overview of what was found**

…….revealed very low TOR for CT and GC →Need a Phase 2!

→ only **30** actually came in for TOR in ideal timeframe of 90 days

→ **4** who came in for TOR were still + for CT

→ VERY WIDE RANGE FROM 10 DAYS TO >15 MONTHS for TOR follow-up..

this time period was not within recommended time frame by CDC-STD guidelines!

c. **Positive findings for Phase 1→ not one communicable disease was missed by providers, testing was correlated to disease risk and medical staff was updated on STD trends**

Phase 1: Quality Improvement (Excel etc)
Ideal Timeframe ≈ 90 days*

Phase 1	Period 5/7/2009-7/12/2010
Patients + CT and/or GC	**107** (about 15 months)
Percent Retested **Percent Retested for TOR**	61% (65/107)* 28% (30/107)
Percent who asked for TOR	46% (30/65)
Percent + at TOR	13.3% (4/30) ALL CT
Missed Opportunity (not tested but seen)	13.1% (14/107)
tested in Ideal timeframe	**17% (18/107)**
TIME TO RETEST	**number patients tested in time frame**
<42 days	17
42-90 days	**18**
91-180 days	15
180-365 days	10
>365 days	5
Average time	125.7 days (range 10-490 days)
*** CDC guidelines : 42 to 90 days is closest to time frame**	***35 came back only due to s/s of STD**

Phase 1: Who was retested (TOR) within 42-90 days?

- **Female gender**: 47 of 59 (80%) were retested with only 15 of 59 (25%) tested within ideal timeframe
- **Male gender**: 18 of 48 (38%) retested with only 6% retested within ideal timeframe

Males represented 71% of students (30 of 42) who were not retested.

Although, 65 were retested **ONLY 30 came in for TOR**…..**35 came in only due to STD s/s!**

CDC RECOMMENDS 90 DAYS as ideal timeframe

Results of Phase 1 CQI presented to provider staff

- Medical director encourages staff to develop **a plan to increase TOR for CT/GC…leads to start of Phase 2**

  → Improving TOR for positive CT and/or GC cases←

Other important points found in analysis of Phase 1:

- Retesting too early
- Difference in protocols by providers: Medical director updated provider staff on CDC guidelines for TOR
- Better ordering by medical providers
- not one positive STD was missed

PHASE 2: CQI started to increase TOR rates for CT and/or GC at University Student Health Center

Improved Baby step plan =

Added to Phase 1: Emails to all + cases to be done by RN

Phase 2 plan outline

- **RN** (who does Excel spreadsheet etc) will now send an **Email reminder** to all +CT/GC students to remind them to come in for TOR within 90 days – Point: post cards eliminated as reminder option!

- **Data will be collected** from start of Fall semester 2010 to last day of Spring 2011 semester than reviewed by Coordinator.

- **Medical Staff** will only use NAAT after 21 days for those who return with persistent STI complaints.

- **Medical staff** will emphasize to each + case the importance of TOR and risk of PID encouraging follow-up in ideal timeframe.

- **Medical staff** will still continue to order labs based on risk.

Phase 2: CQI Improvement EMR review Summer 2011

Phase 2	Period 8/2/2010 -5/3/2011
Number cases CT/GC/both	**57 (**8 months)
Percent Retested Percent retested for TOR	56% **(32/57)*** 40% (23/57)
Percent who asked for TOR	72% (23/32)
Percent Positive at TOR	13.3% (3/23) all CT
Missed opportunity	8% (2/57)
Percent tested within Ideal Timeframe	**16%** (9/57) ↘
Time to Retest	**# patients tested**
<42 days	5
42-90 days	**9**
91-180 days	16
180-365 days	1
>365 days	1
Average time to retest	104 days (7-490 days)
	*** 9 came in with s/s of an STD**

Phase 2 - Who was tested within Ideal Timeframe (3 months)

- **Female gender**: 17 of 30 (57%) retested
  4 tested in ideal timeframe (13%)

- **Male gender**: 15 of 27 (56%) retested
  5 tested in ideal timeframe (19%) ↑ ↑

significant increase in number of males retested in Phase 2 – leads to Phase 3 CQI….what was different? Is this important in increasing our TOR rates for both males and females?

↓

? Is there a difference between female and male care at the clinic?

Overview of what record review revealed for Phase 2: 8/2/10 to 5/3/11

- **Still tested too early** (1)
- **Decreased TOR** in ideal time frame (17% to 16%)
- **Still + cases (3/23)** at TOR follow-up
- **Frustration of RN**: in some cases especially “repeat offenders” she sent 3-5 Emails and got no response and no follow-up
- **Variability in how + cases were handled** by 11 providers

Patients (3/23) who were still + for CT at TOR in Phase 2!

- **Interviewed by coordinator**

a. Not aware that if they vomited within 2 hours or got profuse diarrhea that they needed to call.

b. Not aware to abstain from sex for 8 days after treatment for him/her and partner even if zithromycin was used!

c. Not aware that any partner, who he/she had had sex with in last 6 months, needed to be notified and treated or tested and treated (serial monogamy).

d. Not aware that you can get an STD prior placement of condom!

"**Not aware**": ALL ISSUES REVEAL A TRUE FAILURE IN MEDICAL STAFF PROPERLY INFORMING PATIENTS ON KEY POINTS RELATED TO STD EDUCATION – WHY?

Other patients who did not come in were contacted by coordinator (10)

- Very difficult task to contact patients – found after a # months: no cell, not same cell number, cell no longer in service and not at UB anymore etc.
- Those who were reached did admit to receiving RN reminder Email but they did not know who she was so did not open the Email (spam/virus/worm issue).
- Had not been made aware by provider that TOR was VERY important-just suggested!
- 5 had s/s again and had gone off campus for testing and treatment????

Comparison Phase 1 versus 2
Ideal time ≈ 3months

Phase 1- Excel only/provider education

Number retested

1. % females

15 or 25%

2. % males

18 or 6%

For both genders, only 17% (18/107) retested in 42-90 days

Phase 2 - Excel with RN e mail and provider re-education

Number retested

1. % females

4 or 13%↓

2. % males

27 or 56%↑

For both genders, 16% (9/57) retested in 42-90 days

Significant improvement in male retesting!

What was different between female and male treatment of +CT/GC in Phase 2?

- **All EMR Records of + cases were reviewed by coordinator**
- **Some very different treatment plans found between the 11 providers**

a. **Male providers** brought patient back in for discussion, patient given patient education booklet (CDC booklet) and discussed needs/issues regarding treatment and contacts "**in person".**

a. **Female providers** discussed + result by **phone contact** and left script at reception or called script into local pharmacy: no "personal contact".

1. only one female provider gave out any patient education booklet (CDC booklet).

2. no available open appointment time so phone call used????

Phase 3 starts due to findings from Phase 2

- Medical director of ECHD/STD services returned for yearly update with providers →

- a. Coordinator advised Medical director of **TOR results**, comparing Phase 1 and Phase 2 (↓)

- b. Coordinator asked ECPHD for assistance in formulating an improvement plan and identified the need after analyzing the data →

- c. ECHD Medical director contacted **Region 2 IPP** (Cicatelli) for assistance: K. Morrison Odoyke MPH and Melissa Kyriakos Nelson MSc.

Main concerns that were discussed by team

- **Focus groups?**
- **Incentives?**
- **EPT?**
- **Educate** so "not aware is not an issue" but in 15 minute appointment? How can we do this?

- **Is 55-90 days an ideal time frame for this age population?**

- **How to remind them to f/u?** texting, University assigned Email again, private Email contact, phone, or postcard???
- **Follow-up appointment**: should it be made at end of treatment appointment? EMR records this ……no show etc.
- Should improved **success with male follow-up in Phase 2 be an important factor?**

Phase 3 plans

Many ideas discussed and investigated over the summer, and statistical analysis of phase 1 and 2 was done by Cicatelli associates→ outcome allowed everyone to input “some one point that they thought was very important”.

Breakdown of Phase 3: changes implemented 8/2011

- **RN** – will still get all + reports/complete CRF etc **from Phase 1**

- **Appointment** - All patients **MUST** return to clinic if + report and no phone treatment or scripts called in! Any exceptions?..... **(Phase 2: males)**

- **Treatment** – everyone will get "**free oral or IM medication**"…incentive?

- **Education – patient education letter was written** addressing key points from "not aware portion of Phase 2" and **CDC booklets** "Protect yourself and protect your partner" were ordered and given to providers to handout with EMR educational letter
    1. letter is automatically in EMR/ downloading it records that provider gave it out written by Coordinator and designed by Cicatelli.

- **Return** – **ideal time frame changed** by ECHD medical director

  now 25-55 days - (? better time frame for this transient population!).

1. Patients asked to make follow-up appointment when leaving for 6-8 weeks later and mark their blackberry. I Phone calendar..
2. prompts automatic reminder and parking pass
3. No show issues

Phase 3 protocol continued:

Coordinator takes over → receives completed + STD CRF from designated RN

↓

1. Reviews every EMR progress note**: was protocol followed?**

↓

2. Completes variables on **Excel** spreadsheet……(Phase 1 continued)

↓

3. Places ID and disease (GC/CT or both) **in Microsoft outlook calendar**…..
   5 weeks from treatment (my automatic reminder)!

↓

4. **5 weeks later**: sends Email to UB account, private Email account or calls cell number (student given choice)…….(Phase 2 improvement)

↓

5. If no appointment is made in 5-7 days, only **one cell phone call is made**!

↓

6. Patient returns: Test of re-infection (TOR) template for providers in EMR

7. TOR lab result tracked and recorded on Excel spreadsheet!..process starts again if TOR+

Patient education: Gonorrhea Positive letter

University at Buffalo
The State University of New York

Revised 09/08/2011

STUDENT wellness TEAM
HEALTH SERVICES

PROTECT your health. Know the FACTS.

What you need to know

You're not alone:

- Gonorrhea is a *sexually transmitted infection* most common among teens and young adults.
- Most people who have gonorrhea don't know they have it and don't have symptoms.

Gonorrhea is curable:

- If you catch it early, gonorrhea is *very easy to treat and cure* but you must finish your medication.

There's more information:

- The CDC pamphlet, "Protect yourself and protect your partner – Gonorrhea the facts" will give you more information about the transmission, treatment and prevention of gonorrhea.

What you need to DO

Take your medicine:

- Take all the pills you are given, as instructed. If you received a prescription, *fill it right away*.

Inform your partner(s):

- You can do this anonymously: go to www.inspot.org to find out how!
- Any partners you've had in the last 6 months need to know they are at risk so they can get tested and treated.

For Confidential Testing and Treatment Services

- Registered UB students can get services at Student Health Services. Call 716-829-3316.
- Buffalo area residents can get free services at Erie County Health Department at 608 William St, Buffalo, or call 716-858-7687.
- Anyone can go to www.itsyoursexlife.com/gyt/test for info on STDs and where to get tested and treated in their area.

Don't have sex until…

- 8 days after both you *and your partner* have received an antibiotic shot and finished your medication.
- You could re-infect each other!

COME BACK FOR YOUR FOLLOW-UP APPOINTMENT:

- Make sure to come back for a follow-up appointment in 6-8 weeks.
- Put it in your calendar for 6 weeks from today: call 716-829-3316 for a "***test of re-infection***".
- Check your UB email for a reminder from us in 5 weeks, or email mancuso@buffalo.edu today and tell us how to contact you by another email address or phone number.

Patient Education: Chlamydia positive Letter

University at Buffalo
The State University of New York

Revised 09/08/2011

STUDENT wellness TEAM HEALTH SERVICES

PROTECT your health. Know the FACTS.

What you need to know

You're not alone:

- Chlamydia is a common *sexually transmitted infection* among teens and young adults.
- Most people who have Chlamydia don't know they have it and don't have symptoms.

Chlamydia is curable:

- If you catch it early, Chlamydia is *very easy to treat and cure* but you must finish your medication.

There's more information:

- The CDC pamphlet, "Protect yourself and protect your partner – Chlamydia the facts" will give you more information about the transmission, treatment and prevention of Chlamydia

What you need to DO

Take your medicine:

- Take all the pills you are given, as instructed. If you received a prescription, *fill it right away.*

Inform your partner(s):

- You can do this anonymously: go to www.inspot.org to find out how!
- Any partners you've had in the last 6 months need to know they are at risk so they can get tested and treated.

For Confidential Testing and Treatment Services

- Registered UB students can get services at Student Health Services. Call 716-829-3316.
- Buffalo area residents can get free services at Erie County Health Department at 608 William St, Buffalo, or call 716-858-7687.
- Anyone can go to www.itsyoursexlife.com/gyt/test for info on STDs and where to get tested and treated in their area.

Don't have sex until…

- 8 days after both you *and your partner* have finished your medication.
- You could re-infect each other!

COME BACK FOR YOUR FOLLOW-UP APPOINTMENT:

- Make sure to come back for a follow-up appointment in 6-8 weeks.
- Put it in your calendar for 6 weeks from today: call 716-829-3316 for a ***"test of re-infection"***.
- Check your UB email for a reminder from us in 5 weeks, or email mancuso@buffalo.edu today and tell us how to contact you by another email address or phone number.

Template for Email Reminder

- Date:
- Dear UB student
- On 00/00/0000, you tested **POSITIVE** for a test done at the University at Buffalo Student Health Center and you were treated with medication by medical provider: Name of Provider

- This is an **important reminder** to make a follow-up appointment with a provider for retesting.
-
- The infection that you were treated for can cause **infertility** if the infection has stayed in your body.
- Please call 716-829-3316 and reschedule a follow-up appointment with a provider for **TEST OF REINFECTION TESTING**.
- **You need to make this appointment no later than 2 weeks from the date of this e mail.**

Outcome of Phase 3
a. who returned?

Phase 3 8/13/11 to 4/4/12	Ideal time frame 25-55 days
Number + CT/GC or both	45
% retested	91.1 % (41/45)
% CT cases	88.8 % (40/45)
% GC cases	9.8 % (5/45)
% GC+CT	0 %
median age	20.9
Age range for both males /females	17 to 39
% who asked for TOR?	**100 % (41/41)**
% positive at TOR	4.87 % (2/41 CT)
% tested in Ideal time frame	**95.4%** (39/41)
# tested 855	5.4% positive

Outcome Phase 3: positive CT/GC by Ethnicity

Ethnicity	Males	Females
White	**18**	**9**
Black	7	5
Asian	1	3
Hispanic	0	1
Multiracial	0	1
Total +	**26**	**19**
Returned for testing?	23 * (1 missed opportunity CT + 1 not qualified GC)	18 * (1 CT missed opportunity)
average age both sexes	20.9	
Age range both sexes	17-39	

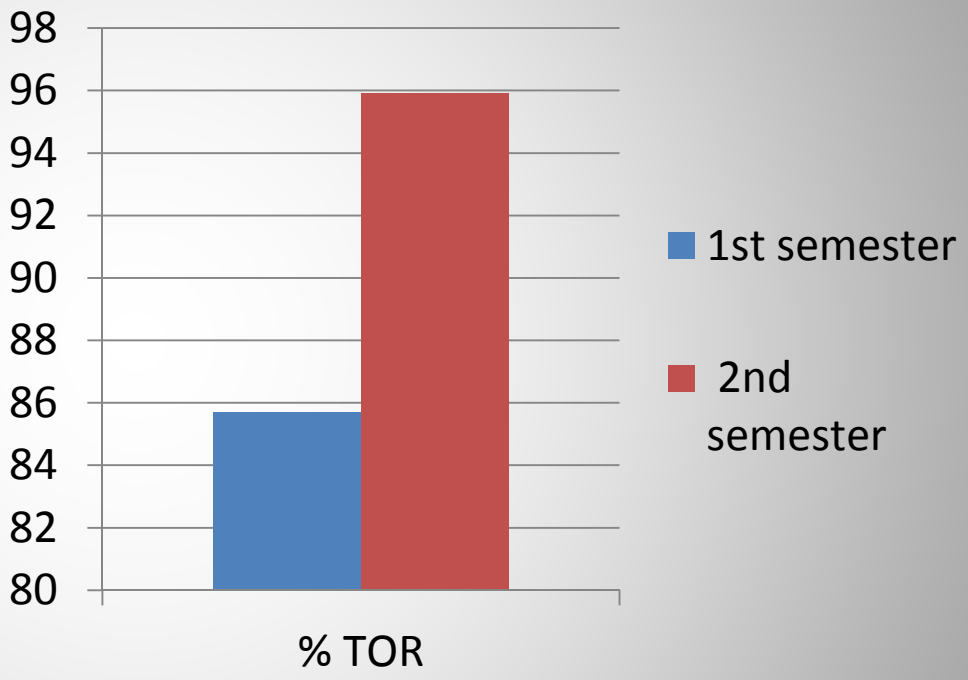
Breakdown of ideal time frame for Phase 3
Ideal time frame 25-55 days

NOTE: all TOR were done within 90 day ideal time frame per CDC

ideal time frame	25-55 days
# tested in ideal time frame	**39/41 (95.1%)**
median in days	**39.1 days**
Range in days	23-59 days 23 days* due to international tennis travel
days to retest	
<24 days	1*
25-55 days (ideal time)	39
56-75 days	2
76-90 days	0
> 90 days	0

Comparison Phase 3 Test of re-infection for Ct/GC: First semester versus Second semester

- **Was this a "One trick pony"?**



First semester reported at CDC meeting as poster: 8/13/11 to 12/9/11 with 21 cases

Second semester: 1/13/12 to 4/4/12***

24 cases in that date range

**** At least 15 more positive since that date up to 5/14/12- of those qualified to return 100% returned!

Comments: more Positive outcomes

Many other improved outcomes in Phase 3:

- **Increased staff morale**

- Patients seem to be **better informed** – in Phase 1 and 2 many patients returned for testing only because they had s/s of STI again..not one patient did the same in Phase 3..**no** "**repeat offenders**".

- Some students (5/41) actually "**took charge of their health**" and made follow-up appointments for TOR without being called or receiving Email reminder..this is what we strive for!

- Patients actually had **their contacts** (7/41) come in for testing and treatment.

- Patients actually **must have read educational letter** and called or Emailed me if they had medication problems (4/41) or other concerns (2/41).

- **Decreased missed opportunity** – but could improve with "pop up prompts".

Some Negative outcomes

- Still 2/41 were positive for CT - issues with long distance relationships

- Making follow-up appointment for 6-8 weeks later at end of treatment appointment did not seem to work. Patients advised to do this but > 85% did not!

- If follow-up appointment is made, **Medicat** sends out Email reminder (only to Email address listed in EMR) and free parking pass only 8 hours before appointment!

  Most patients didn't even see it.

Brief Outline of Phase 3 TOR protocol

Step 1

- + STD case
- Contact patient

Step 2

- Appointment – “in person appt advised”
- Treat/educate/make follow-up/ pt aware of TOR and staff contact name etc!
- Given EMR educational letter
- RN CRF for Communicable disease

Step 3

- Coordinator: review CRF/ review EMR progress note
- Completes Excel variables/ Outlook reminder - 5 weeks
- Send reminder to f/u in 2 weeks..choice of reminder
- Follow lab report of TOR – complete Excel

Can this be duplicated elsewhere?

- Yes…with **little intervention** but you must have **team effort!**

- Team **must understand disease** $ burden to health care system. They should know the importance of TOR- do "they buy into the changes needed?"
- There definitely must be a **central way** that all + CT/GC are managed → is there established protocols, a CRF, an STD Coordinator and/or a department Champion?

  a. most established protocols can be "retooled" easily
- **EMR system would be best for easier access** to progress notes, treatment dates, contact info, automatic reminders, follow-ups!

  templates and prompts help staff
- Coordinator should have access to a confidential **Excel** and/or **electronic calendar for reminders.**

Other points regarding duplication of our success!

THIS CQI PROTOCOL IS ADAPTABLE TO ANY CLINIC!

Some important points we learned through our baby step improvements:

- The **name and contact information of the Coordinator**, who will be contacting the + patient, must be known by the patient.

- How the patient wants **to receive a reminder** must be known by Coordinator.

- **Staff** must realize that “baby steps” can eventually lead to true success but it will take time.

  Feedback from team needs to be evaluated frequently and protocol “tweaked”.

As for Clinic CQI!

- This is a perfect example of a process of creating an environment in which management and workers strive to create constantly improving quality!

- Found a need
- Developed a plan(s)
- Looked at results
- Continued to improve plan until the goal was reached (improved TOR: baby step approach)

Outcome is multifaceted:

For the patient: Improved quality of care for patients-hopefully, decreased PID etc. Enhanced client tracking….

For the staff: Improved staff morale

Better EMR documentation

Team work

Continuous review

JAMA

at Johns Hopkins University School of Medicine, Baltimore, and coauthor of the accompanying editorial (Burton E and Mossa-Basha M. *Ann Intern Med.* 2012;156[2]:158-159).

Burton said she's been interested in the imaging autopsy discussion since the approach came on the scene in the early 2000s. Although she's an advocate, she said it doesn't address one of the major reasons that autopsy rates have declined—cost. "One of the biggest problems with the performance of autopsy is there's no reimbursement," she said.

Despite budgetary constraints, there are good reasons for continuing to do autopsies. "For example, we know that the accuracy of death certificates isn't good," said Burton. National mortality data are used to determine funding for research in specific areas of disease, she said, so if death certificates are wrong, funds may end up misdirected.

Burton also pointed out that autopsy studies provide information about the natural history of disease. "Most of the good autopsy studies looking at disease pathogenesis were done 50 years ago, when people died at younger ages, usually of one disease," she said. "But now people are dying with multiple diseases, and we don't have any idea how those conditions interact."

Information from an autopsy can even change how medicine is practiced, said Burton. Her laboratory was involved in the first report on cases of rabies that were transmitted through solid organ transplantation (Srinivasan A et al. *N Engl J Med.* 2005;352[11]:1103-1111). "We knew the virus could be transmitted through corneal tissue, but the autopsy information opened our eyes to the risk with other tissues," she said.

FUTURE DIRECTIONS

Experts in postmortem imaging are working toward improving the technology. One recent advance from Persson's group at CMIV is a virtual autopsy table that consists of a large, touch-sensitive LCD screen that displays images of the body. It was designed to manage and visualize the enormous data sets produced by the medical imaging modalities.

"It's like a huge iPad, where the imaging data are reconstructed into 3-D images of bone and tissues," he said. With the swipe of a finger, users can navigate through the body in real time, peeling back layers of muscle, zooming in and out of organs, rotating tissue and "cutting" through it with a virtual knife—almost all the functions of a traditional autopsy. This technology also would be a great addition to medical education, he said.

Postmortem imaging is also being used to make imaging safer for living patients. Mannudeep Kalra, MD, and Sarabjeet Singh, MD, radiologists at Massachusetts General Hospital (MGH), Boston, are working on a project in conjunction with Persson and others to study various levels of radiation dosing from CT scans in cadavers in a hospital setting, trying to identify the lowest dose that still provides an accurate diagnosis. Another objective of their research is to create a teaching module that compares premortem and postmortem imaging studies with photographs from gross and microscopic autopsy examinations. The intention is to enhance the understanding of radiological and pathological correlates of different disease processes that have led to a patient's death.

Kalra noted that many residents and fellows in radiology at MGH have expressed interest in learning how to correlate postmortem images with pathology. "It may be a bit premature," he said, "but going forward I could envision a special joint subspecialty in radiology and pathology." □

CDC: Improve Targeted Screening for Chlamydia

Mike Mitka

SCREENING RATES FOR CHLAMYDIA among the group most adversely affected by the infection—sexually active young women—remain too low, according to the US Centers for Disease Control and Prevention (CDC). The low rates trouble public health officials because this sexually transmitted disease (STD) can cause chronic pelvic pain, potentially fatal ectopic pregnancy, and infertility if the infection is left untreated.

During a telebriefing held at the National STD Prevention Conference in March, CDC officials presented self-reported data from teenaged girls and young women who participated in the 2006-2008 cycle of the National Survey of Family Growth. Only 38% of sexually active young women surveyed were screened for chlamydia in the previous year, suggesting that more than 9 million young women nationwide were not screened as recommended. Testing rates were higher for women belonging to populations associated with a greater risk of chlamydia infection: blacks (55%), those with multiple sex partners (47%), those receiving public insurance (50%), and those who were uninsured (41%).

Rescreening rates for those who had been diagnosed and treated for chlamydia are also low, CDC officials said. Laboratory data from publicly funded STD and family planning clinics in New York, New Jersey, and the US Virgin Islands revealed that just 11% of men and 21% of women who had tested positive for chlamydia between 2007 and 2009 were retested within 1 to 6 months; about 25% of the men and 16% of the women who were retested had been reinfected.

The low retesting rates can be improved, as demonstrated at the University at Buffalo student health clinic in New York. After clinic staff implemented a process when treating students with chlamydia that involved sending reminders to be retested, the retesting rate went from 16% prior to the program to 89%. □

Questions/ Concerns/ Explanations?