



# CSHP 2015 Success in Alberta

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Pharmacy Grand Rounds  
June 21, 2012

Develop of an Algorithm &  
an Antimicrobial Pre-Print Order Form  
for the treatment of  
*Clostridium difficile* infection  
in hospitalized immunocompromised patients  
at the Cross Cancer Institute

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# CSHP 2015 Objective 3.2

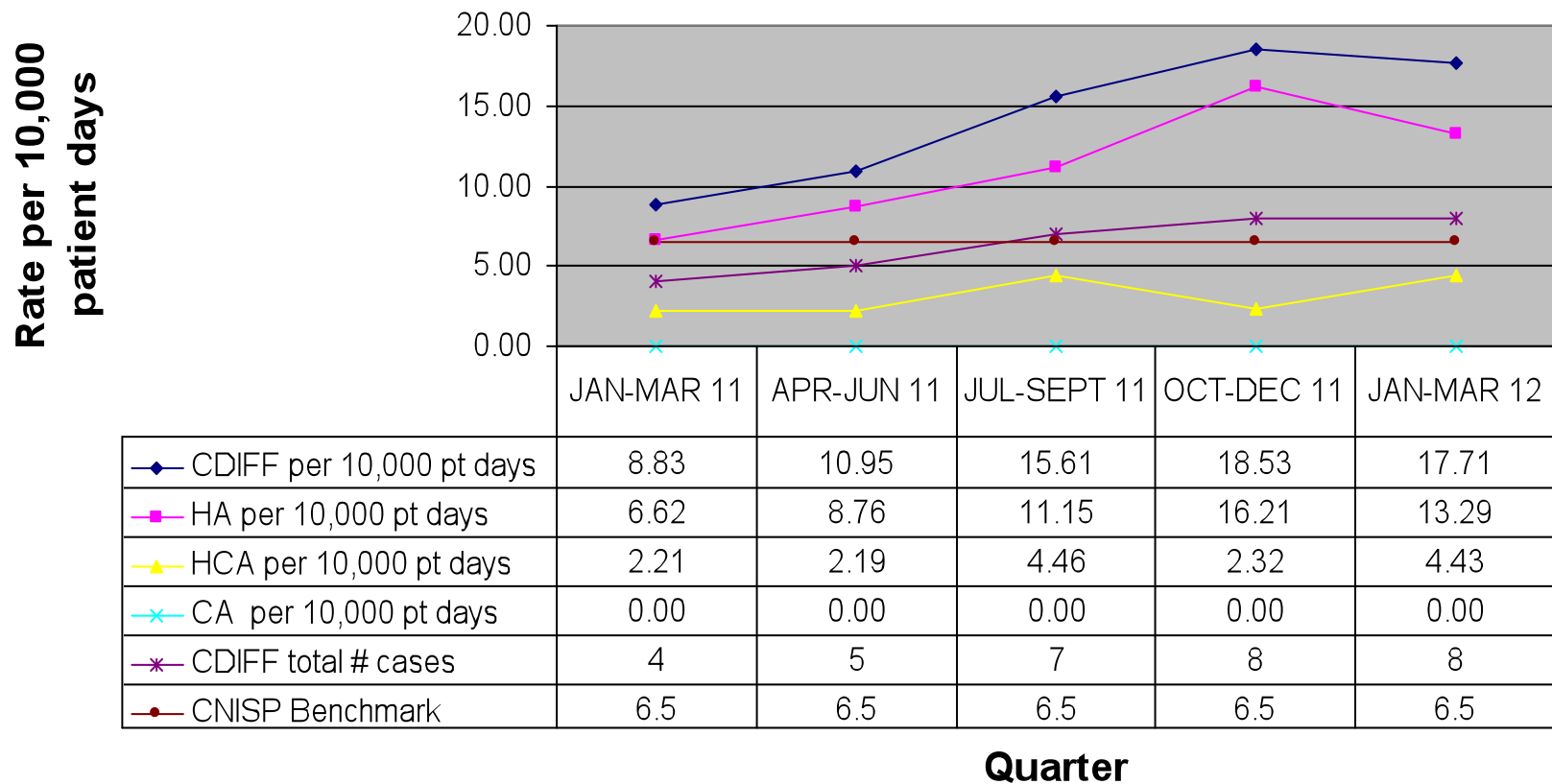
In 100% of hospitals and related healthcare settings, pharmacists will be actively involved in the development and implementation of evidence-based drug therapy protocols and/or order sets.

# Background

- Infection Prevention & Control Committee
  - Multi-disciplinary committee
  - Surveillance review & Outbreak management
  - *C. difficile* infection rate @ the Cross Cancer Institute compared to National benchmark rate

# Background

**2011-12 Quarterly Clostridium Difficile Infection Rates  
CCI Inpatient Units**



# Why a pre-print order?

- Pre-Print Order for chemotherapy are used regularly
- Standardize testing
- Standardize clinical definitions
- Systematic treatment plan
- Increase awareness of status of each individual case
- Education resource for current Best Practice Guidelines

# Methods

- Literature search....
- Definitions / clinical staging / antimicrobial Tx
- Feedback from Infectious Disease physicians, Oncology physicians, Associate physicians
- Feedback from nurses
- Feedback from pharmacists
- Edited pre-print orders accordingly



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DATE / TIME

- Indwelling Bowel Catheter System (order for bedridden patients only)
- If patient is NPO, consult Infectious Diseases
- Place patient on contact precautions
- C. difficile Toxin Test:** Sent \_\_\_\_\_ (date)
- 1.  **MILD TO MODERATE INFECTION:**
  - INITIAL THERAPY** Start date: \_\_\_\_\_  
\*Metronidazole 500 mg PO STAT and then TID for 14 days
  - FIRST REINFECTION** Start date: \_\_\_\_\_  
**Re-treat with:**  
\*Metronidazole 500 mg PO STAT and then TID for 14 days
- If no improvement after 3 days reclassify as severe infection.**
- 2.  **SEVERE INFECTION:**
  - Discontinue** current metronidazole for mild to moderate C. difficile infection
  - INITIAL THERAPY** Start date: \_\_\_\_\_  
\*\*Vancomycin 125 mg PO STAT and then qid for 14 days
  - FIRST REINFECTION** Start date: \_\_\_\_\_  
**Re-treat with:**  
\*\*Vancomycin 125 mg PO STAT and then qid for 14 days
  - SECOND REINFECTION:**  
Consult Infectious Diseases
- 3.  **SEVERE COMPLICATED INFECTION:**  
Consult Infectious Diseases
- 4.  If UNRESOLVED DIARRHEA after 14 day treatment, AND patient is otherwise STABLE, consider re-testing C.difficile toxin test.  
If toxin test is negative, consider symptom management with anti-diarrhea medication.

Physician name (print) \_\_\_\_\_

**Clostridium difficile Definition**

Diarrhea AND lab confirmation

OR

Fever WITH abdominal pain and/or ileus AND lab confirmation

OR

Pseudomembranes on endoscopy /pathology

**Diarrhea Definition:**

3 or more unformed stools in a 24 hour period for at least 1 day.

OR

6 or more watery stools within a 36 hour period.

OR

8 or more unformed stools over 48 hours.

AND This is new or unusual for the patient.

**Mild to Moderate Infection Definition:**

Mild to moderate diarrhea, creatinine < 1.5 times baseline

**Severe Infection Definition:**

Fever, profuse diarrhea, abdominal pain, creatinine > or = 1.5 times baseline, elevated lactate level, hemodynamic instability, elevated BUN, low albumin (<25 g/L)

**Severe Complicated Infection Definition:**

Clinical findings of severe infection AND hypotension, shock, toxic megacolon, ileus

**Reinfection Definition:**

New clostridium difficile infection episode occurs > 8 weeks after diagnosis and symptoms of first infection have resolved.

\*Metronidazole

- No Therapeutic interchange
- Oral therapy preferred

\*\* Vancomycin

- Do not change to IV (IV therapy not effective)

DICTATED RECALL

PHYSICIAN'S SIGNATURE

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## Results: Highlights of Pre-Print Order

- Documentation of *C. difficile* toxin test date
- Classify the infection - mild to moderate
  - severe
  - severe complicated
- Determine initial infection or first re-infection
- Definitions & monitoring parameters

# Results: Highlights of Pre-Print Order

## Mild to Moderate Infection

- Metronidazole 500 mg po STAT, then TID x 14 days

## Severe Infection

- Discontinue metronidazole
- Vancomycin 125 mg po STAT, then QID x 14 days

## Severe Complicated

- Consult Infectious Disease Physician

# Implementation

- Nursing in-services
- Included in nursing mandatory re-certification
  
- Pharmacy in-services
- Discussions with doctors
- Surveillance - patient status & outcome
  - monitor use of pre-print

# Pre-print Benefits: Focused Pharmacy clinical services

- Identify patients with *C. difficile* infection
- Patient status & therapy plan
- Medication review
- Target interventions

**Pharmacist role & responsibility:  
promoting optimal antimicrobial use**