Developing an Integrated Infection Prevention and Control Program on a Regional Basis Using a Population-based Approach: The Calgary Experience, 1995-2005

Nancy Alfieri,
Administrative Director, Infection Prevention and Control
Calgary Health Region

nancy.alfieri@calgaryhealthregion.ca

The Calgary Health Region

- Fastest growing Health Region in Canada
- Service population: 1,085,496
- Employees: 23,000
- Urban acute care sector: >2000 acute care hospital beds on 4 sites
- Merger with rural health regions in 2003
- 12,000 home care visits per year
- 8,000 long-term care beds

The Calgary Health Region

- Concentration of high-acuity specialized programs at one site
- Highly mobile patients in system
- Highly mobile staff in system
- Crowded emergency departments
- Outsourcing of housekeeping, long term care, surgical procedures, occupational health and safety, etc., etc., etc. …

CHR Infection Prevention and Control Program

- ◆ Director, Medical Director, 4 Site Officers, Hospital Epidemiologist
- ◆ One Infection Control Practitioner per 137 acute care beds
- ◆ Scope of coverage:
  - ✳ Acute care
  - ✳ Home care
  - ✳ Long term care facilities
  - ✳ Rural sites
- ◆ Infection Prevention and Control (IPC) investigative laboratory
- ◆ Affiliation with University of Calgary Community Health Sciences Program

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- ◆ Public Health accountability:
  - ✳ Calgary Health Region
  - ✳ Province of Alberta
- ◆ Public Health administered and funded through the Calgary Health Region

When We Began…
"The Barriers"

- Human
  - Lack of trust
  - "Turf" issues/job threat
  - Lack of shared values
  - Lack of a common goal
  - One Infection Control Practitioner per 180+ beds
  - One Medical Director

"The Barriers"

- Infrastructure:
  - No regional information technology system
  - A small budget
  - Individual microbiology laboratories merging into one central laboratory
  - The issue of "out-sourcing"

The Tetrad:

aim

resources   recipe

ground
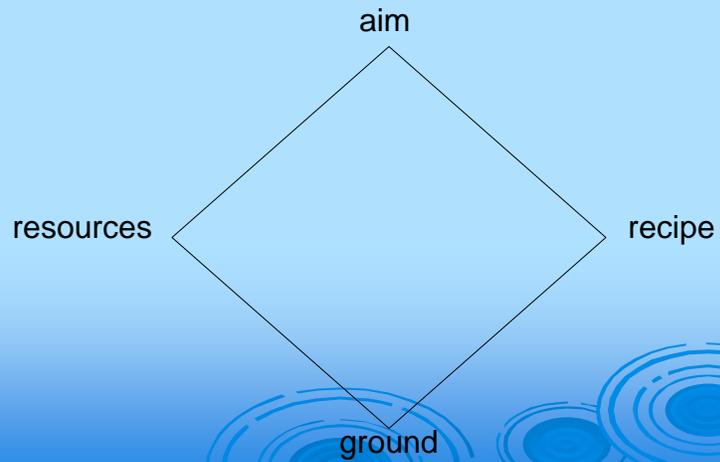
Our Aim

♦ Population-based Infection Prevention and Control across the health care continuum

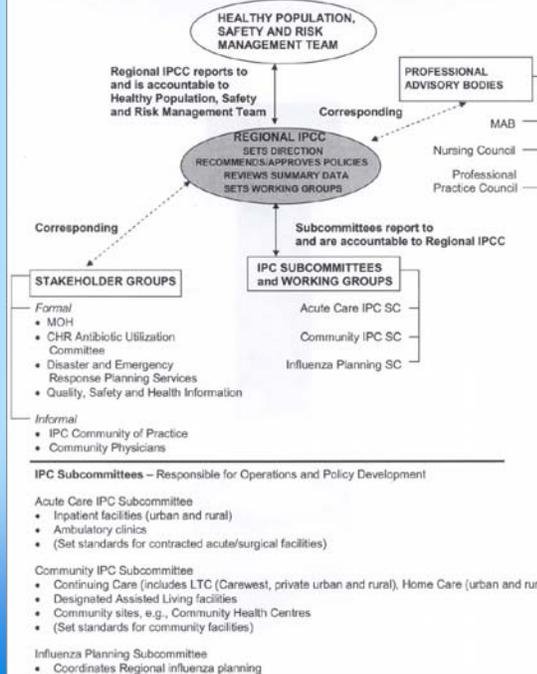# Prior to a "Health Region"

- Four acute care IPC committees
  - Site based, site administered
  - Individual policies, procedures, standards
  - Public Health liaison through the Medical Officer of Health attendance at each committee

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Regional Infection Prevention and Control Committee – An Integrated Structure

REGIONAL IPCC STRUCTURE AND REPORTING RELATIONSHIPS

Our Successes

- Surveillance programs for hospital-acquired infections that continue past the hospital walls
  - System-wide tracking of antibiotic-resistant organisms and *C. difficile*
- Standardization of policies, procedures, practices
  - On-line "searchable" IPC manual

IPC Website

Slide: CDAD: A Model Approach for Case Management

CDAD:
A Model
Approach for
Case
Management

SUBJECT/TITLE Management of Adult Patients with *C. difficile*-Associated Diarrhea (CDAD)*	Number 10.	Page 1 of 2
ADDITIONAL REFERENCE NAMES Infection Prevention & Control Manual	ESTABLISHED 01/03/14	REVISED

Watery unformed stools

Stool for *C. difficile* toxin[1]
(cannot test rectal swab or formed stools)

POSITIVE — EQUIVOCAL — NEGATIVE

Send second specimen

POSITIVE — NEGATIVE

- Single Room/Bathroom[2]
- Contact Isolation

POSITIVE

- If high suspicion for *C. difficile*, RETEST

NEGATIVE

Consult ID or GI Service

TREATMENT OF NEW CASES[3]
- **Mild Cases**: If possible, withdraw offending antibiotic and observe. If no resolution in 2-3 days, manage as moderate/severe case
- **Moderate/Severe Cases**: First-line treatment is metronidazole 500 mg po tid for 10 days[4] (14 days if immunocompromised)

TREATMENT FAILURE[5]
- Vancomycin 125 mg po qid for 10 days (14 days if immunocompromised)

RELAPSE OF CDAD[6]
- Course of metronidazole or vancomycin

Slide: Admission Criteria During Outbreak

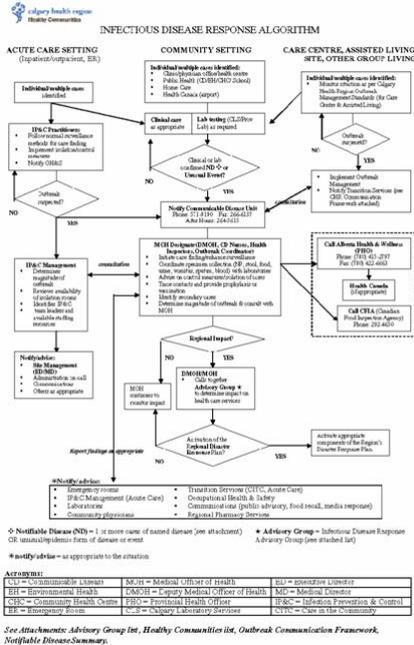Admission
Criteria
During
Outbreak

Attachment 7

Admission and Transfer Algorithm for Care Centre, Designated Assisted Living and Assisted Living Sites Associated with a Current Outbreak

Patient Ready for Transfer from Acute Care to Long Term Care, Assisted Living or Designated Assisted Living Site that is Associated with a Current Outbreak

What is status of person being transferred?

Current resident sent to hospital with symptoms consistent with outbreak and transferring back → Re-admit

Potential New Resident or Current Resident in hospital prior to Outbreak

Code Burgundy in effect at hospital or other urgent need for admission/transfer? — Yes / No

Outbreak Under Control? — Yes / No

No Admission No Re Admission

Meets compliance requirements See attached. — Yes / No

Resident may be admitted/readmitted Once Outbreak is Declared Over by Outbreak Specialist

Resident may be admitted/readmitted.

Compliance Requirement	Responsibility for Action
Consultation has occurred regarding the admission/transfer with the Outbreak Specialist/Designate	Transition Services
If influenza is the infectious agent the resident is on antiviral or vaccinated and on antiviral	Resident/Physician Acute Care
Primary Physician at receiving facility has been consulted	Transition Services/Receiving Facility
Resident or decision maker is informed of risk and accepts any special measures that need to be initiated	Transition Services/Acute Care Provider/Physician/Resident
Facility has adequate staffing levels to meet care needs	Facility

Infectious Disease Outbreak Specialist
Phone: (403) 943-8033
Fax: (403) 943-8067
Pager: (403) 240-8617

1 Urgent Need including but not limited to: necessity for specialized care to mitigate resident safety risk, length of time on waiting list for specialized services or urgency of specialized service provision
2 Under Control MAY be defined as: no new cases of illness for at least one incubation period of implicated agent

Calgary Health Region- Continuing Care   September
Outbreak Management   2005   Section II Page 12
Attachments

Coordinated Rapid Response to Infectious Disease Threats

Design Standards for Renovation and Construction

Economies
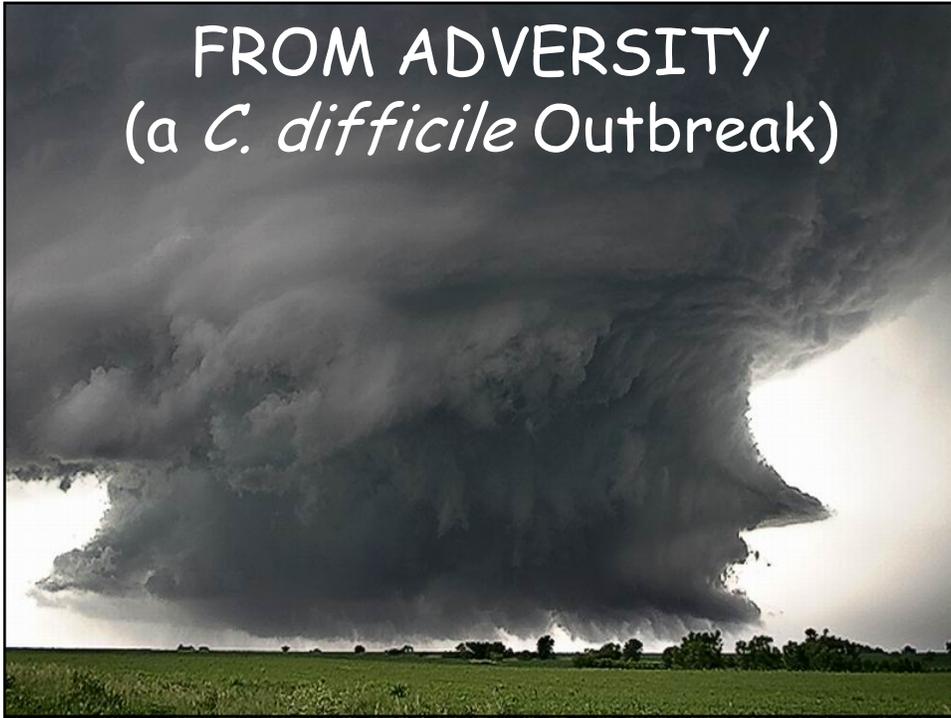of Scale
-
Product
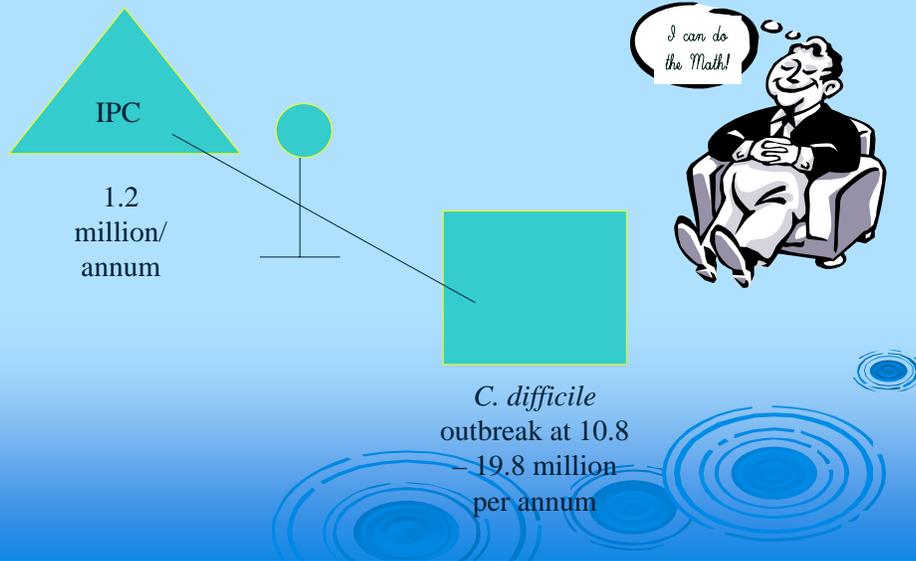Standardization

Hand
Hygiene

FROM ADVERSITY
(a *C. difficile* Outbreak)

Create Advantage
(improved resourcing of
IPC and housekeeping)

Cost Effectiveness of
Infection Prevention and Control

IPC

1.2
million/
annum

C. difficile
outbreak at 10.8
– 19.8 million
per annum

I can do
the Math!

Housekeeping Standards

♦ Cleaning is often the "Cinderella" of infection control
♦ "Good cleaning more achievable than enforcement of hand hygiene and antibiotic prescribing" (S.J. Dancer,Journal of Hospital Infection, 1999)

Our Opportunities

- Developing interactive learning modules
- Employing social marketing strategy to change behaviour
  - Hand hygiene
  - Influenza vaccination
- The beginning of a strategy to control the rising trend in community-acquired MRSA
- An electronic health record
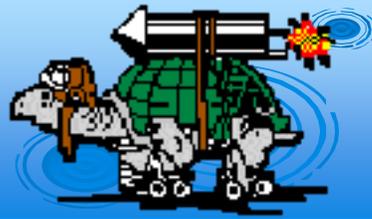- We are training the next generation of IPC professionals

Key Learnings

- Big programs are like elephants

♦ Decisions are often on a large scale and involve extensive stakeholder input
♦ They can be slow!

Innovation Requires New Approaches

♦ Creating communities of practice transcends programs and departments
♦ Choose Collaboration Over a Forced "Merger
♦ Create opportunities for short term gain, while embarking on long term change strategies

Core Infrastructure Requirements Include

♦ Strong administrative and fiscal support
♦ Regional information systems

"Faith is taking the first step when you don't see the whole staircase…"
(Martin Luther King, Jr.)