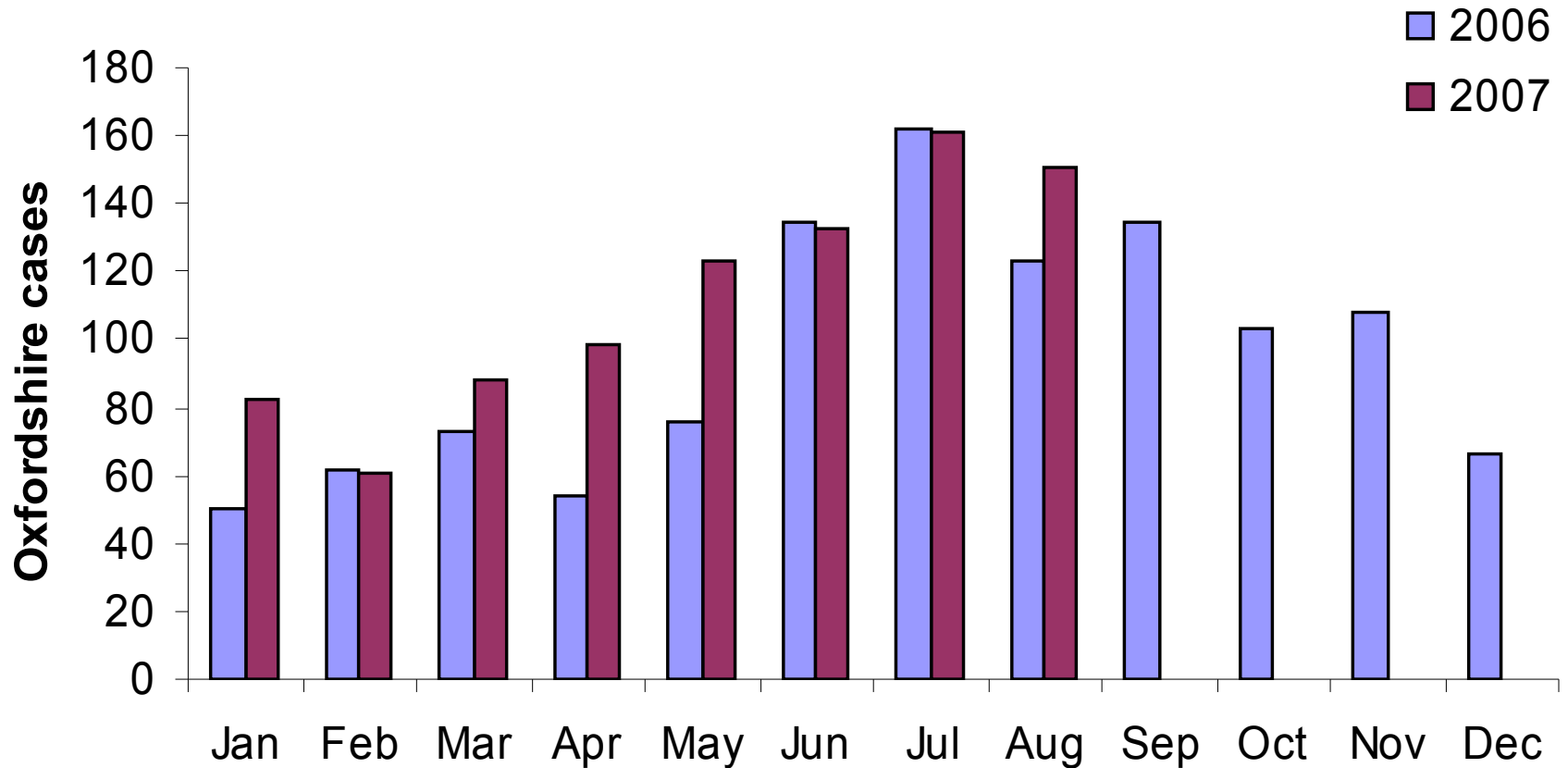




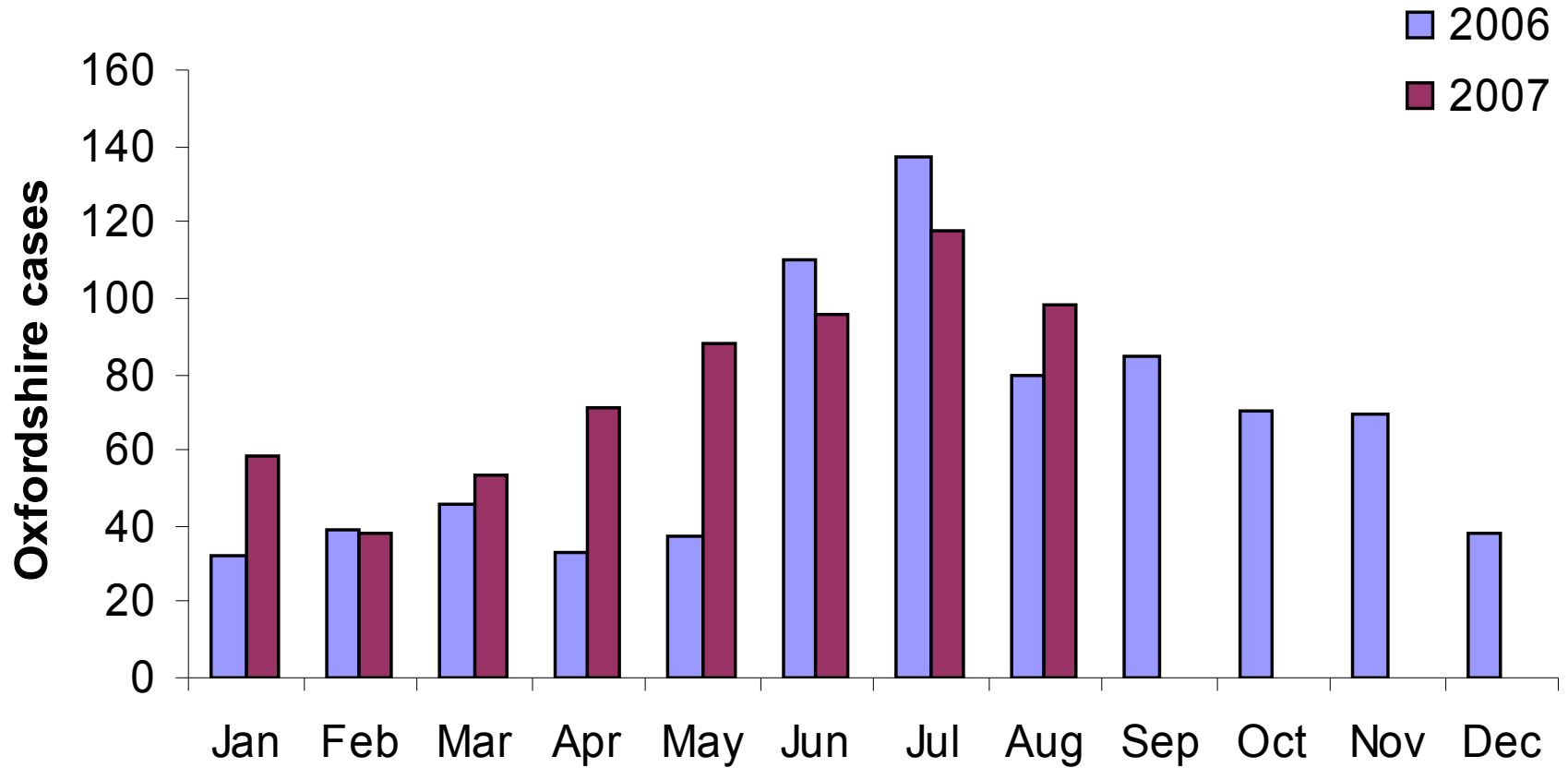
Trends in GI Infections

- Epidemiology
- Viral gastroenteritis
- Campylobacter
- Salmonella
- E coli O157
- C difficile
 - Practice points

All food poisoning 2006/7



Campylobacter 2006/7



Background

- Passive surveillance
 - Variables: patients, Drs and labs
 - Notifications
 - Laboratory isolations
 - good for bacteria
 - poor for viruses, toxins

Background

- Food Standard Agency
- Report of the Study of Infectious intestinal diseases in England 2000

Study of infectious intestinal diseases in England

- Prospective
- Cohort

- Cases - acute diarrhoea
- Controls

- All possible pathogens looked for in both cases & controls

Definitions

- Acute diarrhoea
 - ≥ 3 stools per day
 - take shape of pot
 - < 14 days

Incidence

- 9.4 million cases of IID
- 20% of population
- 3% of the population presented to their GP

Impact

- Of those presenting
 - 9 day illness
 - Cost £250 per episode
 - £750 million
 - 25-50% to the NHS

Ascertainment

- 136 cases in community
- 23 present to the GP
- 6 have stools sampled
- 1 positive in the laboratory

Ascertainment

- For each Salmonella detected
 - 3 more cases in community
- For each Campylobacter detected
 - 8 more cases in community
- For each Norovirus detected
 - 1562 cases in the community

Infectious intestinal disease

- Total disease burden
 - Mostly viral
 - Half resolve in < 1 day
 - Culture rarely positive if symptoms have resolved (carriage rare)

In those presenting to their GP

- Viral 14%
- Campylobacter 12%
- Salmonella 5%

- No pathogen 45%

- 17-50% food related

Practice Point

- What do we look for in all samples sent?
 - Campylobacter
 - Salmonella
 - Shigella
 - E coli O157

 - Cryptosporidium/Giardia <11years

 - C difficile >65 years

Practice Point

- What do we look for on request?
 - C diff in <65years (recent hospitalisation)
 - Giardia, Cryptosporidium >11years
 - (Travel, symptoms)
 - Request Ova,cysts and parasites
 - Yersinia (RIF, recurrent abdo pain)
 - Vibrio parahaemolyticus (shellfish)

Oxford 2006-7

Campylobacter	830
Salmonella	109
Crypto	77
Giardia	48
Shigella	23
E coli O157	10
C difficile	125 (663 in ORH)

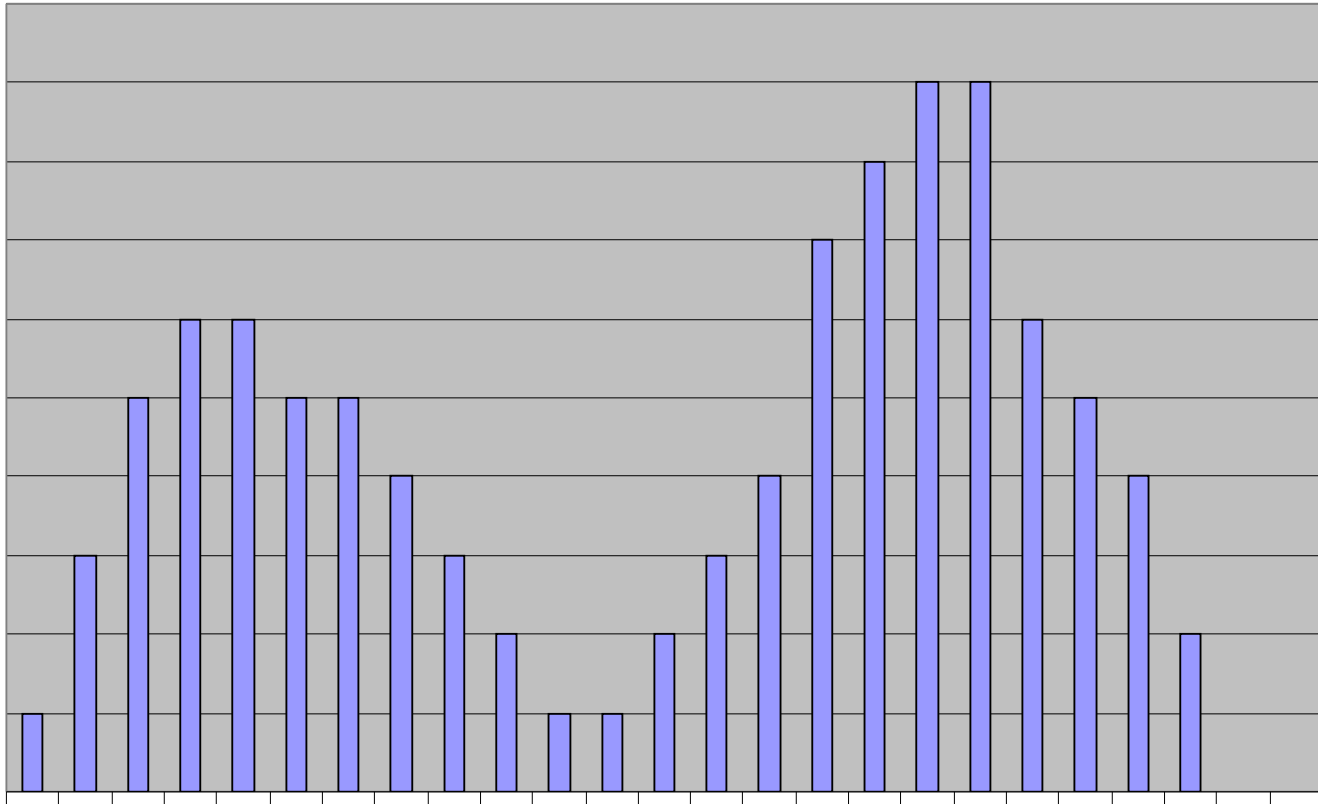
GP Oxfordshire Yield 2006-7

14,843	Cultures	9%	Camp/Salm/Shig E coli O157
2,665	OCP	2%	Crypto/Giardia
618	C difficile	20%	

Risk factors

- Social class
- Housing
- Contact with a case
- Foreign travel
- Keeping unusual pets

Positives by age



1

11

>65

Paediatric Practice Points

Rehydration usually more important than pathogen directed therapy

Avoid agents in young children that slow transit time (imodium)

Generally no antibiotics for acute gastroenteritis

Culture and consider antibiotics for prolonged diarrhoea if pathogen identified

Salmonella gastroenteritis in babies has a significant risk of invasive disease and should be treated - refer to paed id for advice

Think about HUS

Consider other paediatric causes of diarrhoea esp if prolonged (coeliac, milk intolerance, ibd etc)

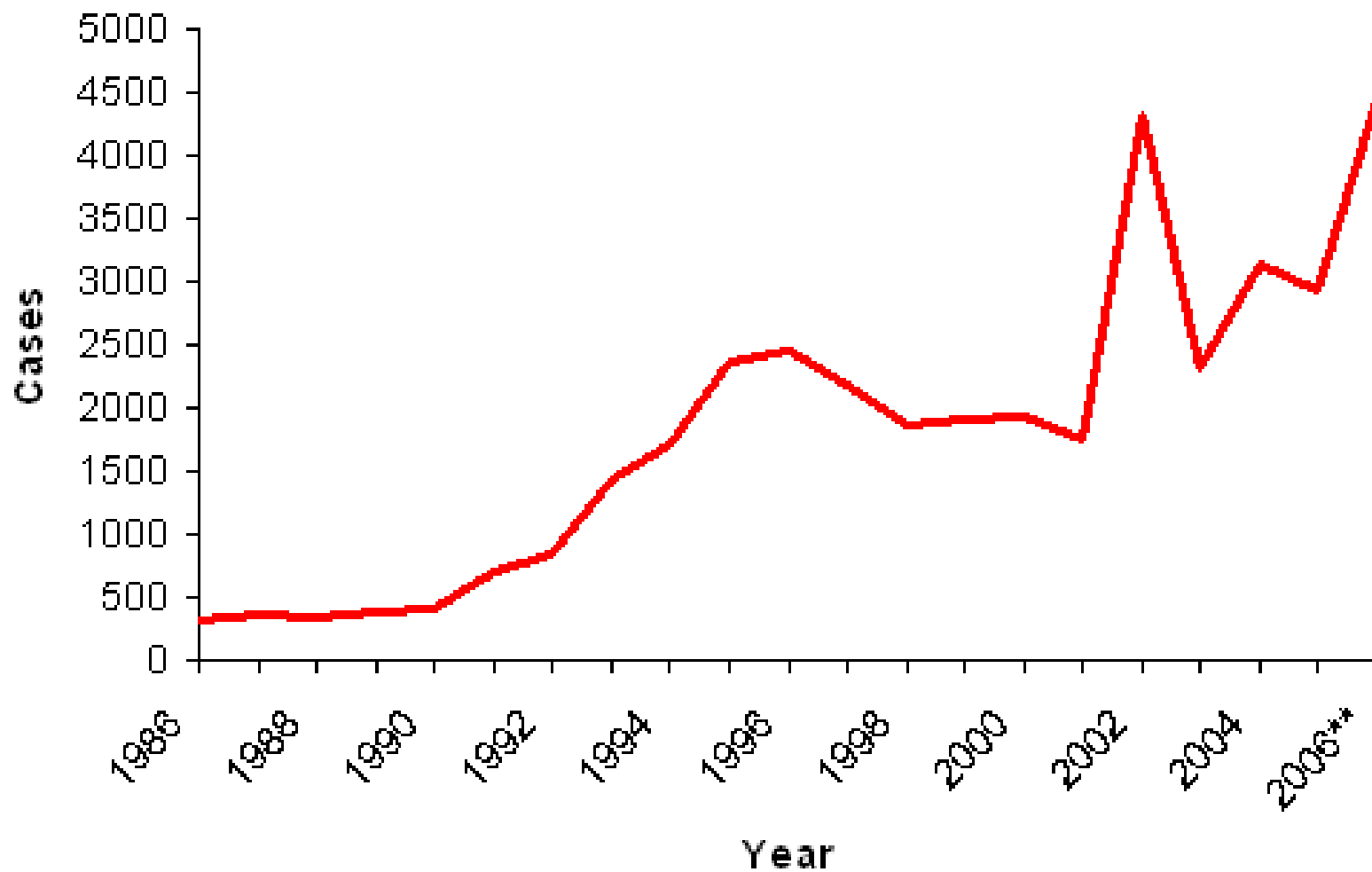
Adult practice points

- Use ORS
- Consider empiric therapy for bloody diarrhoea, febrile or old (and ill).
- Consider Hospital admission - John Warin Ward
 - 1) very ill
 - 2) needs IV therapy
 - 3) needs nursing care that cannot be done at home
 - 4) genuine doubts about aetiology

Viral gastroenteritis



Norovirus



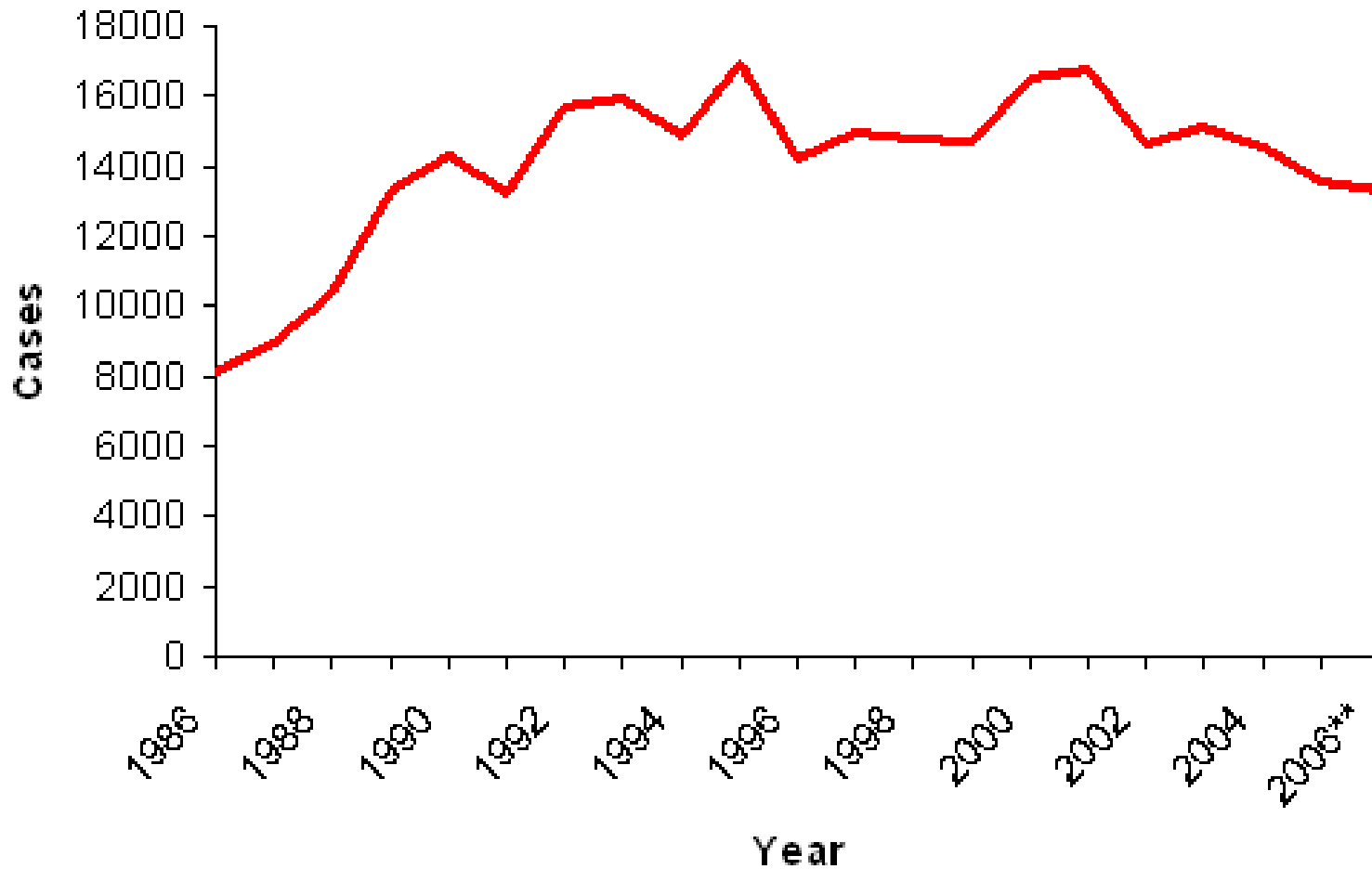
Inter-seasonal diversity of norovirus genotypes: Emergence and selection of virus variants

C. I. Gallimore, M. Iturriza-Gomara, J. Xerry, J. Adigwe, and J. J. Gray

Centre for Infections, Health Protection Agency, Enteric Virus Unit, Virus Reference Department, Colindale, London, U.K.

Received August 9, 2006; accepted February 7, 2007; published online March 15, 2007
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Rotavirus



Viral gastroenteritis

- Commonest cause of gastroenteritis
- Highly transmissible
 - Person to person
 - Food handled without further cooking
 - Raw shellfish
- Short lived illness
 - Flu like prodrome
 - Sudden onset of vomiting
 - Dehydration

Norovirus outbreaks

- >50% of affected are vomiting
- Short incubation
- Short illness
- Patients and staff involved

Rotavirus outbreaks

- Usually children
- <50% of affected are vomiting
- Short incubation & illness
- Usually staff not involved

Practice Point

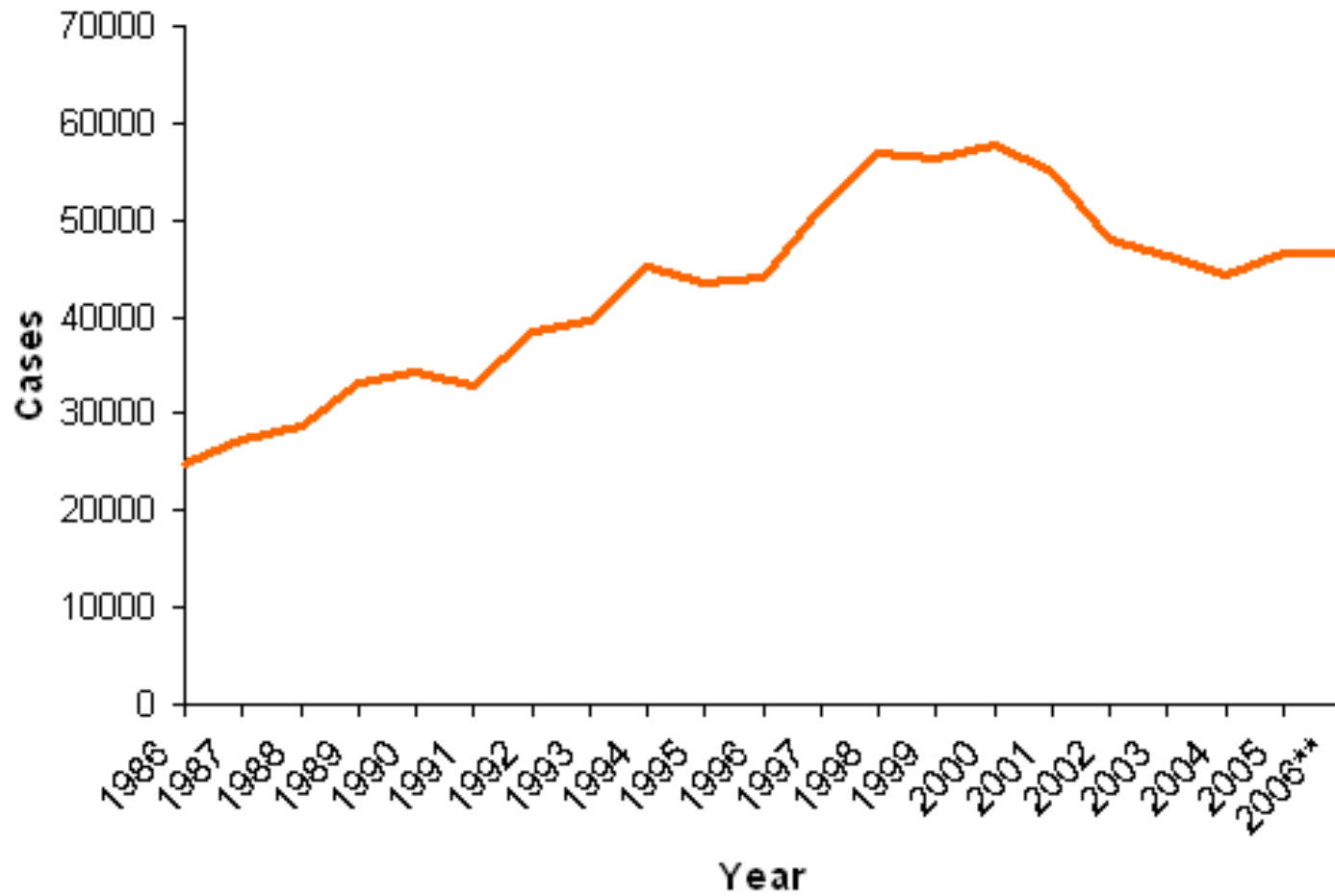
- Ensure hydration
- Reinforce hygiene
- Use the 48 hours rule
- Send sample
 - If symptomatic and food poisoning/outbreak
- Notify Health Protection by phone if outbreak
 - Ox 226858

Practice Points

- Control measures
 - Restrict admissions/transfers
 - Environmental cleaning with bleach
 - Burns out in about 1 week



Campylobacter E&W



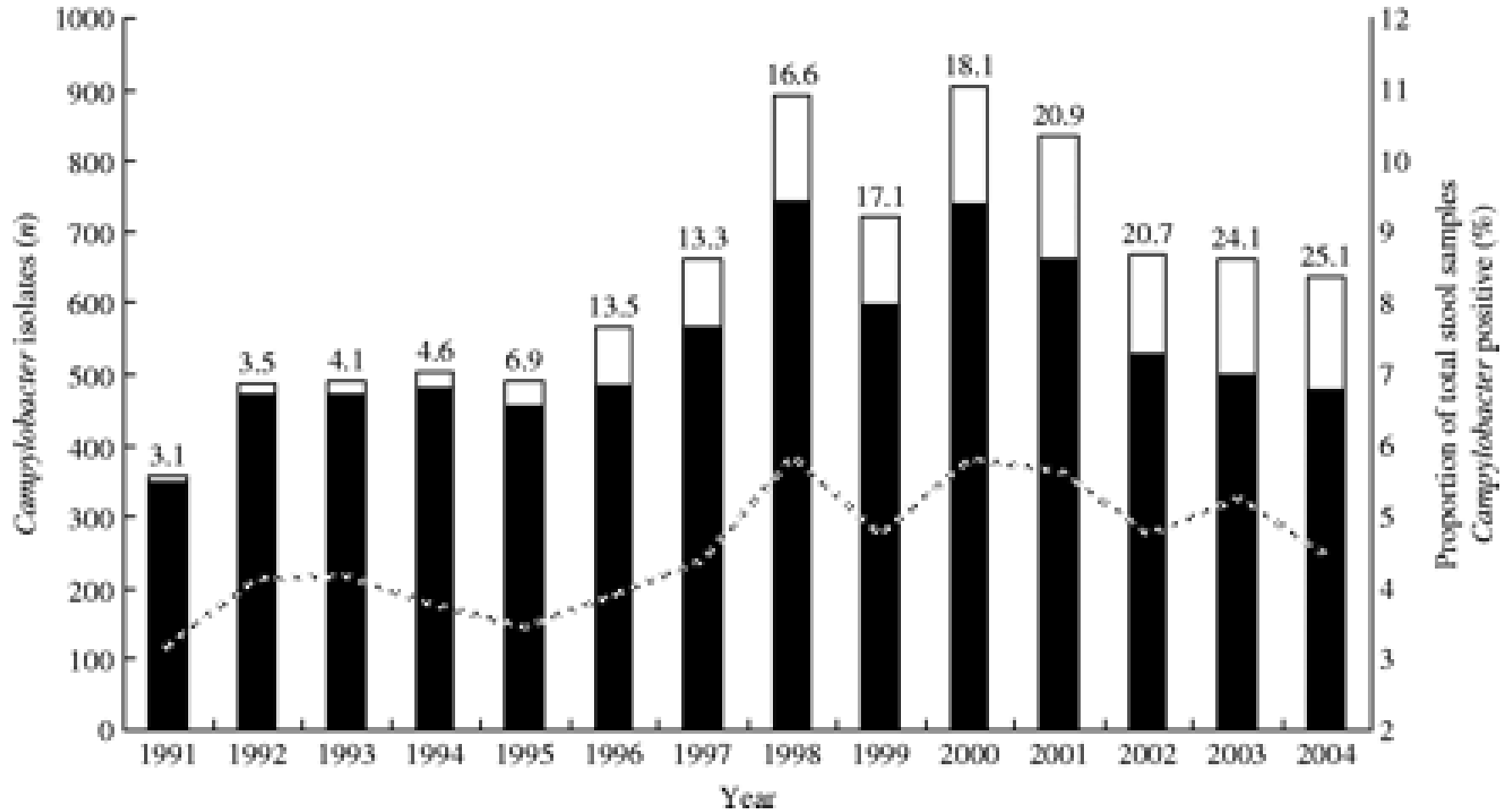
Oxford 2006-7

Campylobacter	830
Salmonella	109
Crypto	77
Giardia	48
Shigella	23
E coli O157	10
C difficile	125 (663 in ORH)

Campylobacter

- Most episodes are sporadic
- MLST typing shows most are chicken associated
- Cross contamination
- Undercooking

Campylobacter - Oxfordshire

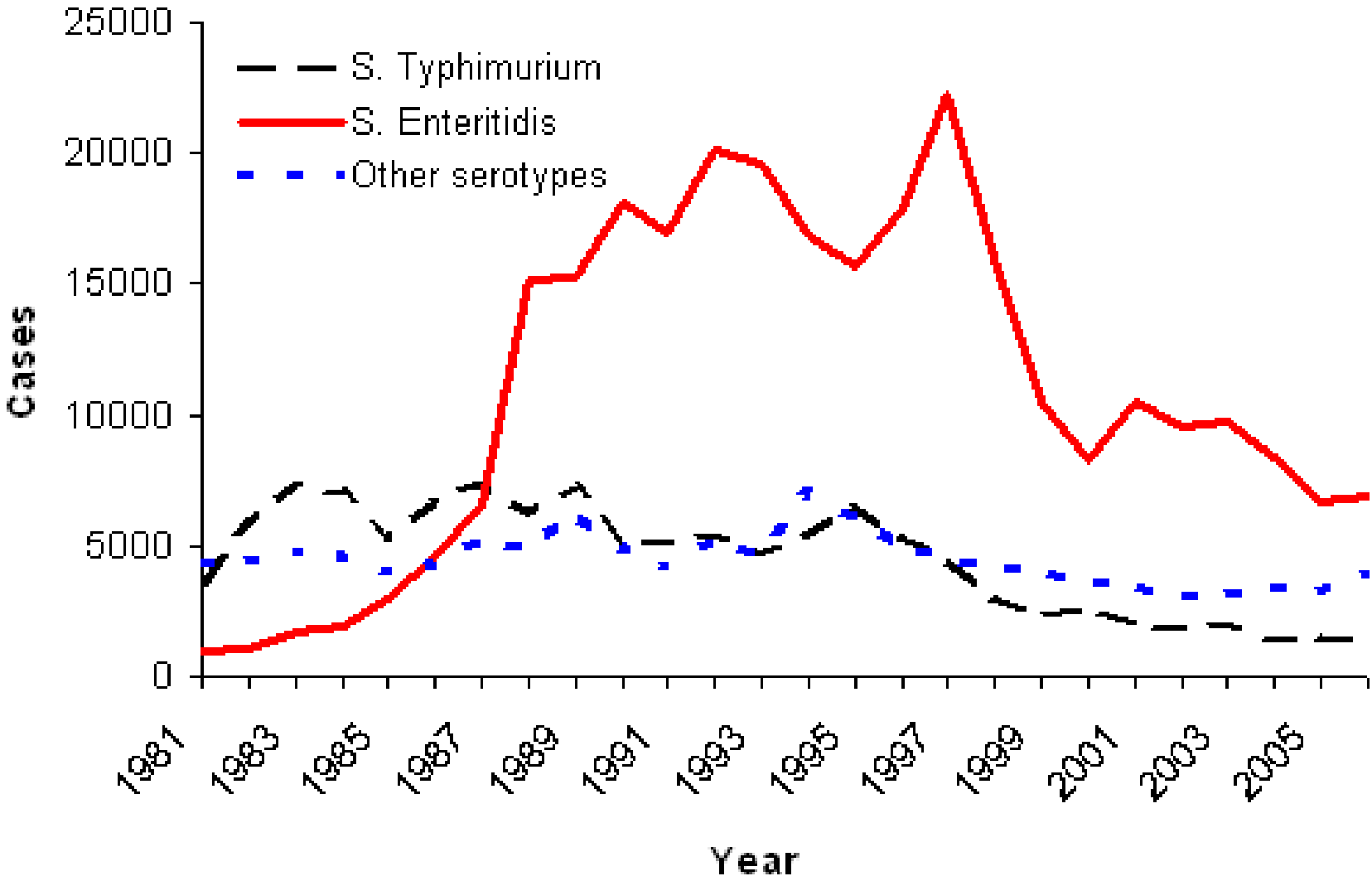


Practice Point

- Campylobacter - commonest cause of bloody diarrhoea
- Increasing Cipro resistance - travel
- Macrolides still effective
- Treat with result if symptomatic



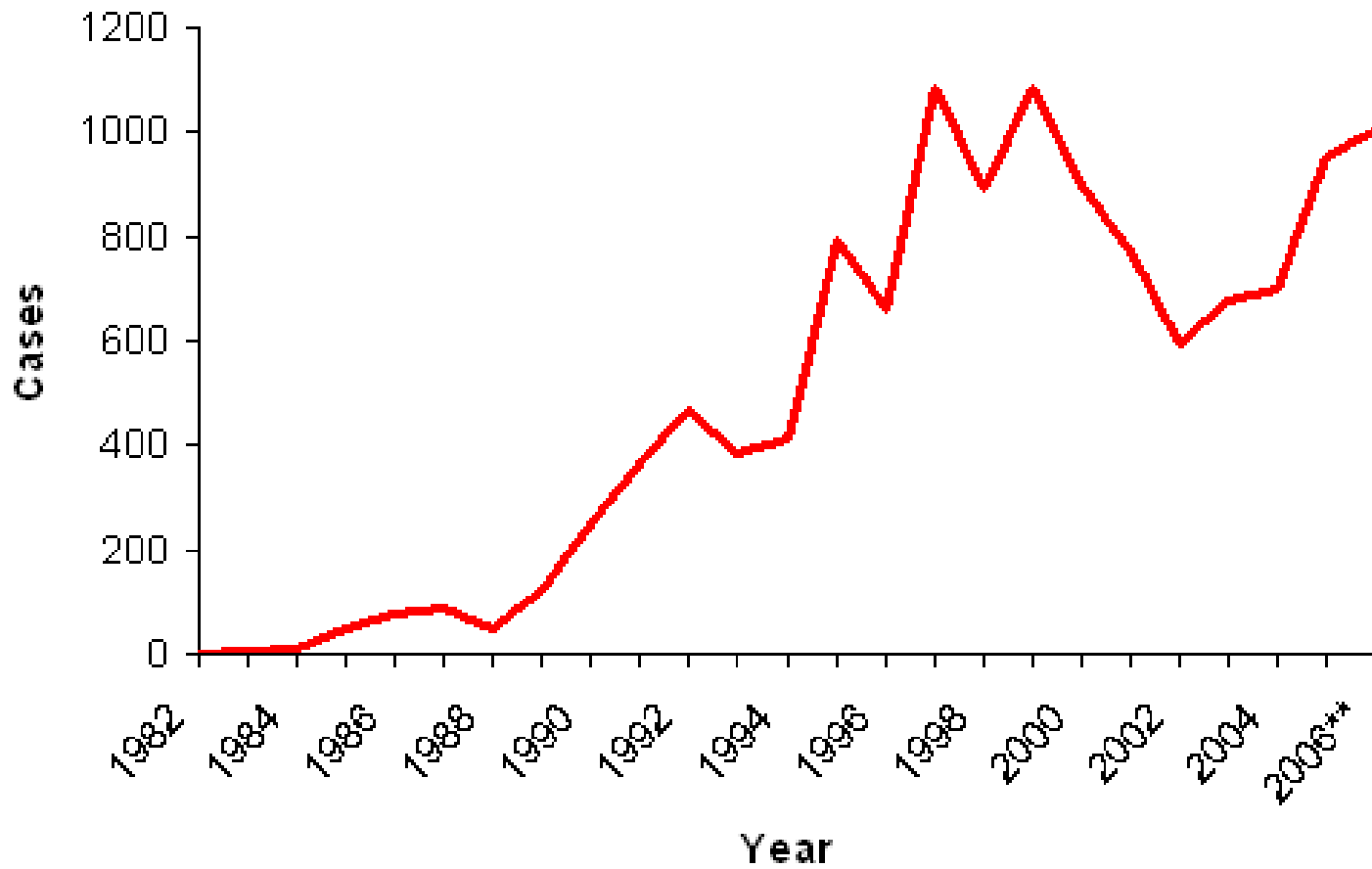
Salmonella



Practice Point

- More invasive
- Assessment of high risk patient
 - <3 or >60
 - Immunosuppression
 - Aortic aneurysm
 - Discitis
- Emerging quinolone resistance only in *S typhi*
- Treat with result if symptomatic

E coli O157



E coli O157



E coli O157

- Cross contamination
 - Lanarkshire
 - Morrisons sliced meats
- Extremes of age
- Toxin mediated disease
 - Vascular endothelium is target

Practice points

- Bloody diarrhoea without fever
- Insidious onset of HUS (TTP +/- CVA)
- Paeds - hospital assessment
- FBC & film + Creat, U&Es
- Antibiotics not indicated



I
Pseudomembranous colitis



II
Pseudomembranous colitis

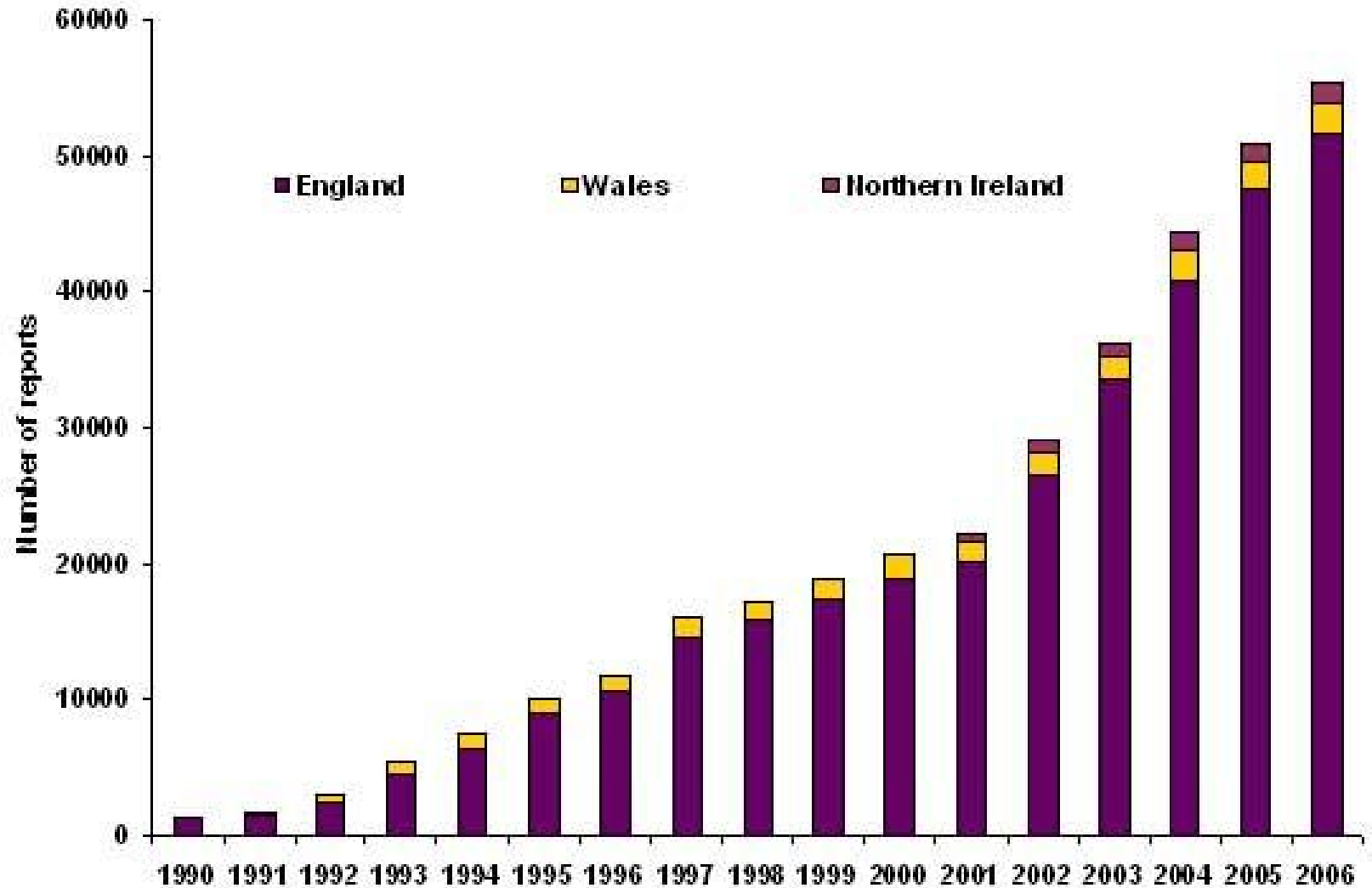


III
Pseudomembranous colitis

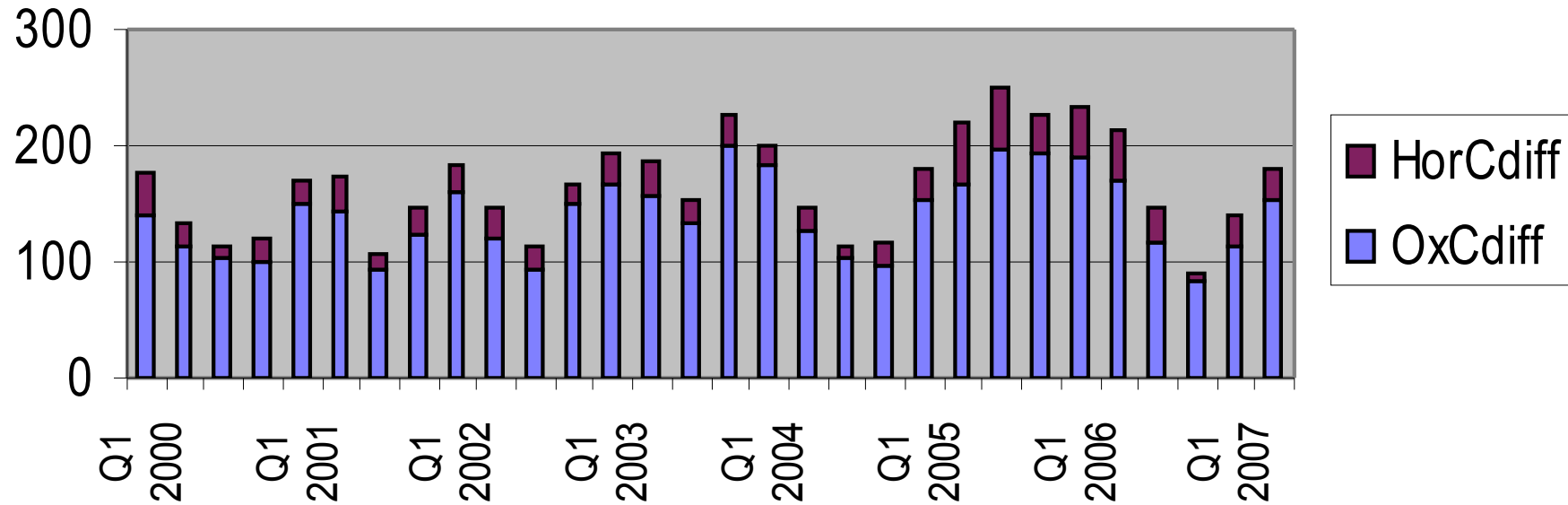


IV
Pseudomembranous colitis

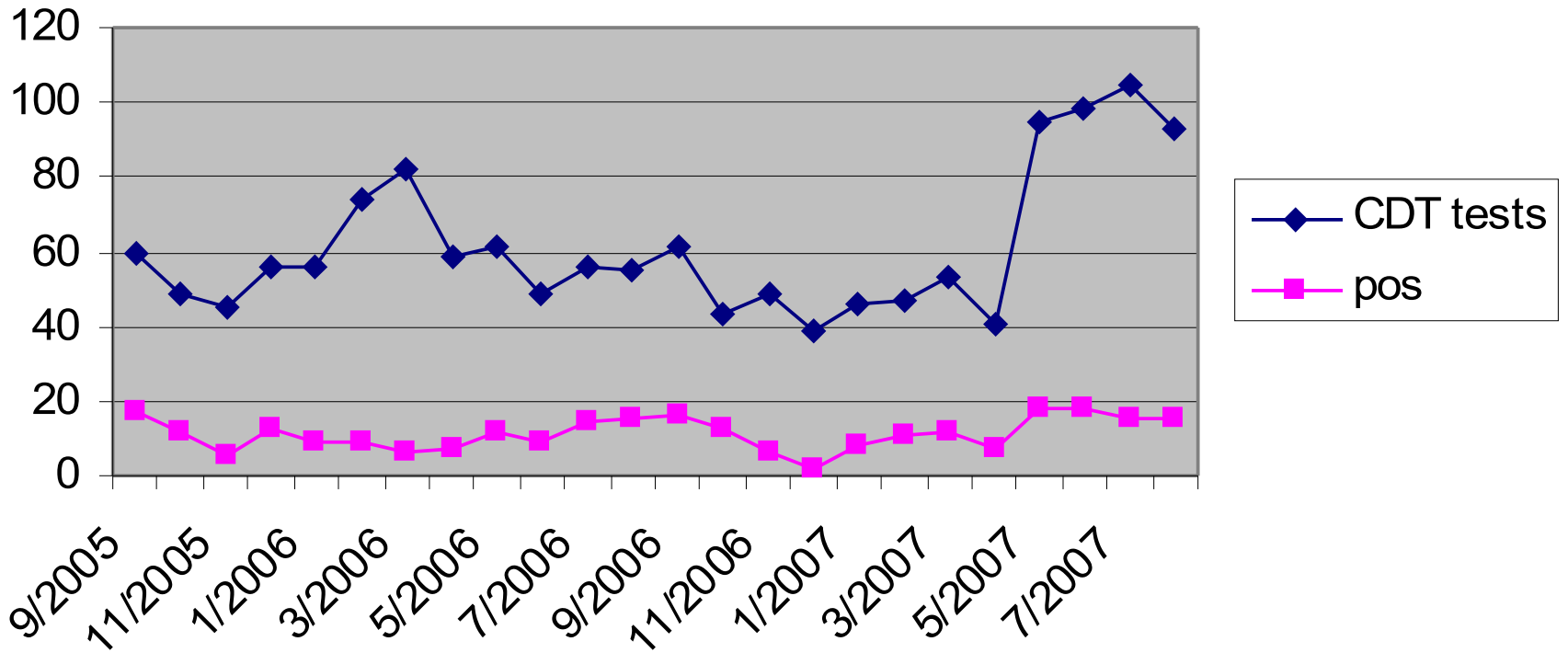
Clostridium difficile



ORH C. difficile

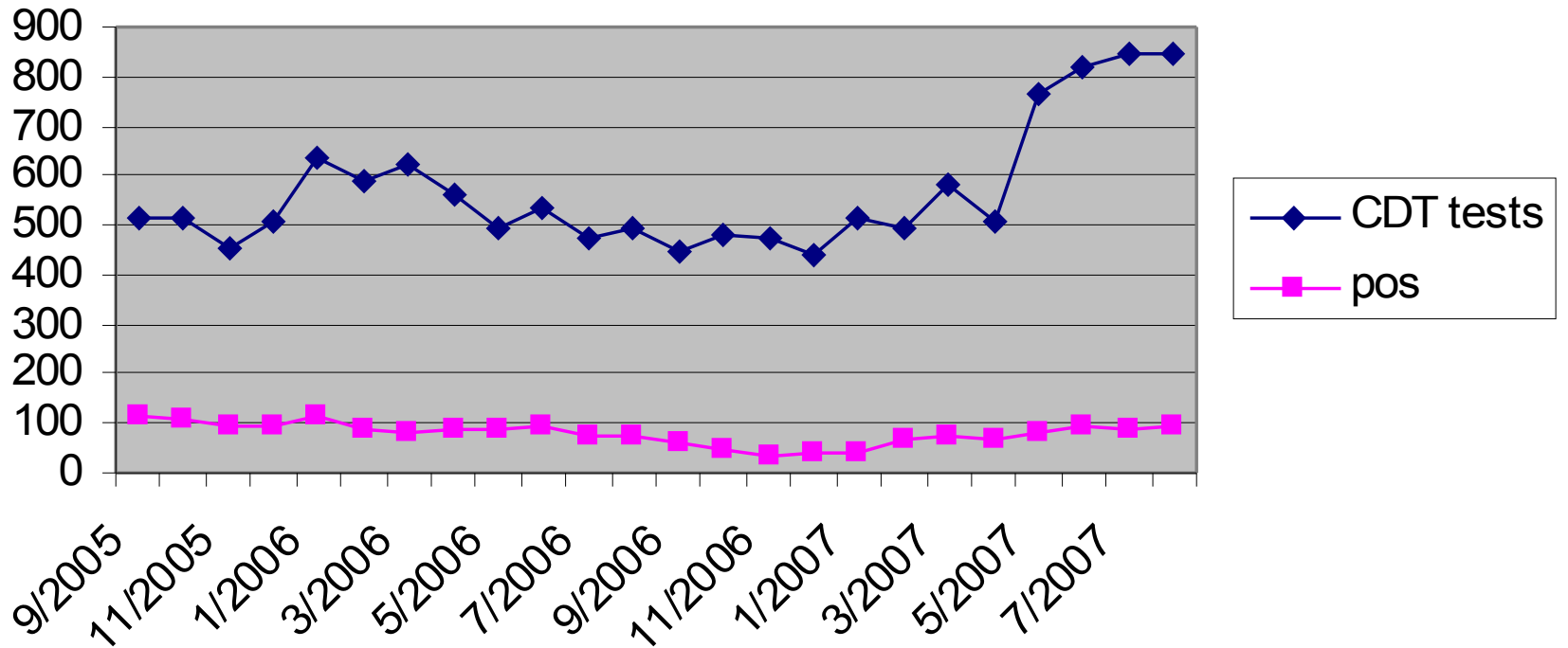


C difficile - General Practice



- 027 strain
 - More toxin
 - Ciprofloxacin Resistant
- ? Higher attack rates
- ? More severe cases
- Crude in hospital mortality is 25-30%
- ORH has higher rate than peers
 - Enhanced infection control
 - Early empirical therapy with Vancomycin

C difficile 2005 - 2007



Risk factors

- Age >65
- Comorbidity
- Antibiotic exposure - ciprofloxacin
- Recent hospitalisation
- Ulcer healing drugs
- Chemotherapy

Assessment

- Abdominal pain/distention
- Stool frequency
- Blood/pus in the stool

- Temperature

- WBC ↑

Practice Point

- C difficile toxin test
 - Needs to be specifically requested in <65 yrs
 - Sensitivity 90 – 95%
 - Specificity varies - 90% in ORH
- Many patients have mild disease

Practice point

- 10 days
- Metronidazole 400mg tds 80p
- Vancomycin 125mg £90
- Vancomycin better for severe disease
- Relapse common -20%
 - Retreat with metronidazole

Practice Point

- When to send a sample
 - Clinical
 - Public health



Practice Point

- Clinical
 - Systemic upset/dehydration
 - Hospital admission/empirical therapy
 - Blood in stool
 - Prolonged diarrhoea >10days (Giardia)
 - Recent hospitalisation (C difficile)
 - Foreign travel

Practice Point

- Other Clinical
 - Age <3 or >60
 - Inflammatory bowel disease
 - Diabetes
 - Renal impairment
 - Immuno-deficiency
 - Rheumatoid/SLE
 - Gastric hypochlorhidria (H₂ blocker & PPI)
 - Prosthetic heart valve
 - Aortic aneurysm

Practice Point

- When to send a sample
 - Public health
 - Suspected food poisoning
 - Part of outbreak
 - Contact (E coli O157/Typhoid)
 - Food handler
 - Healthcare worker
 - Child in preschool/nursery
 - Elderly in residential/nursing

Practice Point

- When to send a sample
 - One sample is usually sufficient (>90% sensitive)
 - Up to 2 samples if suspect Giardia (98% sensitive)
 - 1ml volume (Pea sized)

Practice Point

- Reinforce hygiene
 - Handwashing
 - Food preparation
- Use the 48 hour rule
- Advise that EHO may call

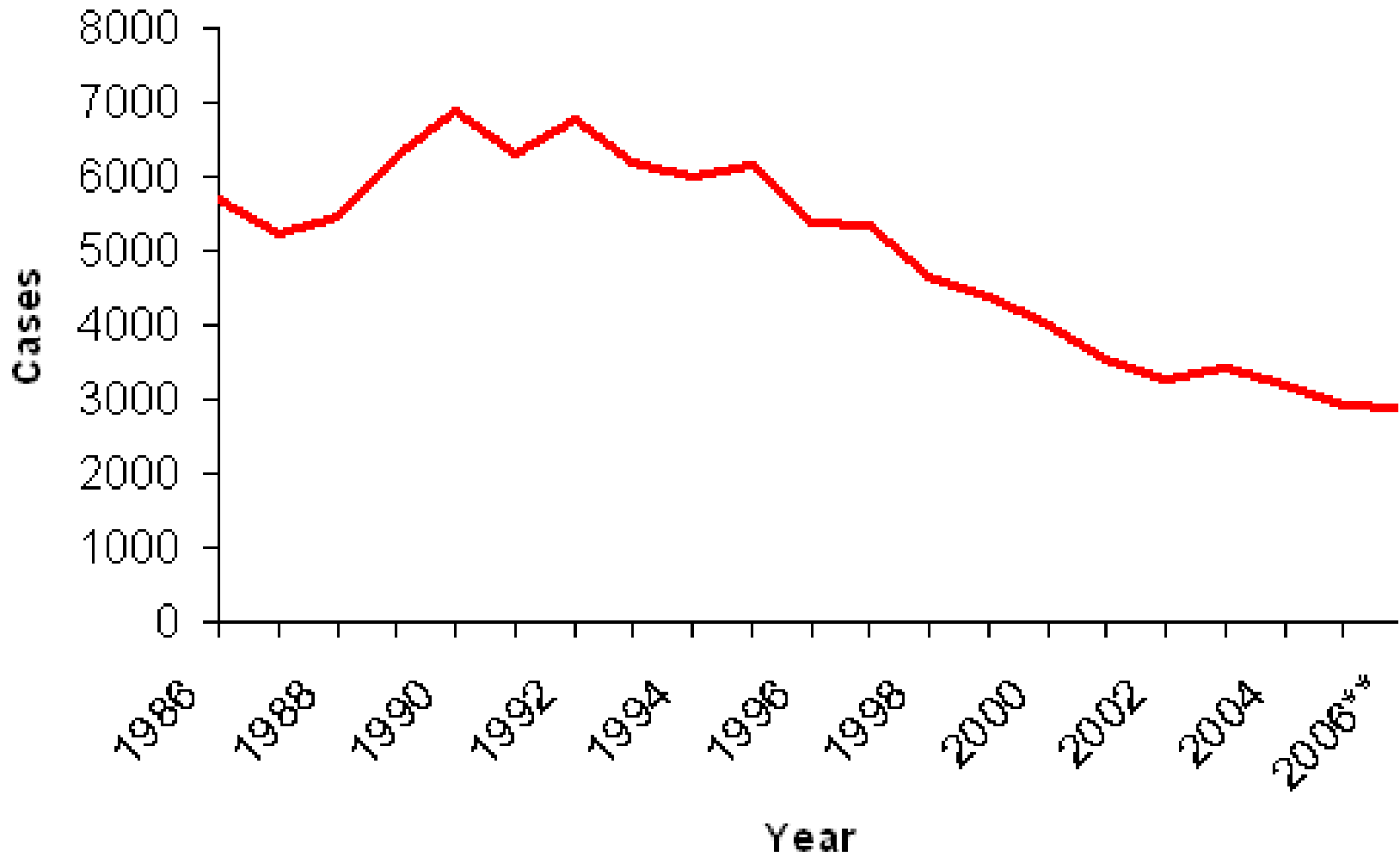
Notification

- Food poisoning - suspected
- Dysentery
- Typhoid / Paratyphoid fever
- Viral hepatitis
 - *Hepatitis A*

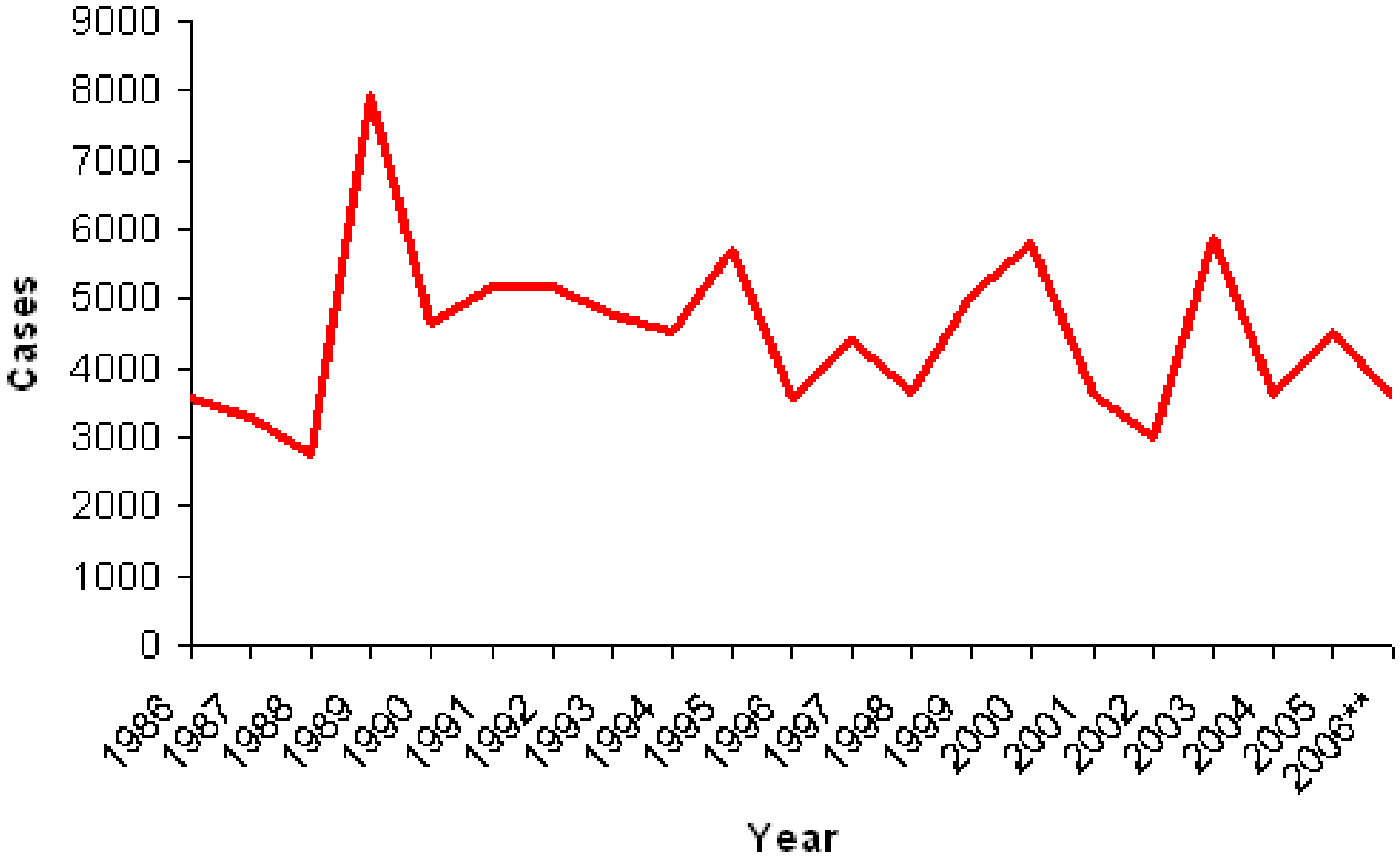
More information

- <http://www.oxfordshire.nhs.uk/documents/Vol9no1-AcuteDiarrhoea.pdf>
- The Management of Infectious Gastroenteritis in Adults. Farthing et al 1996 J of Infection; 33:143-152
- HPA Prodigy guide in draft
- <http://www.hpa.org.uk/cdph/issues/CDPHvol7/No4/g>

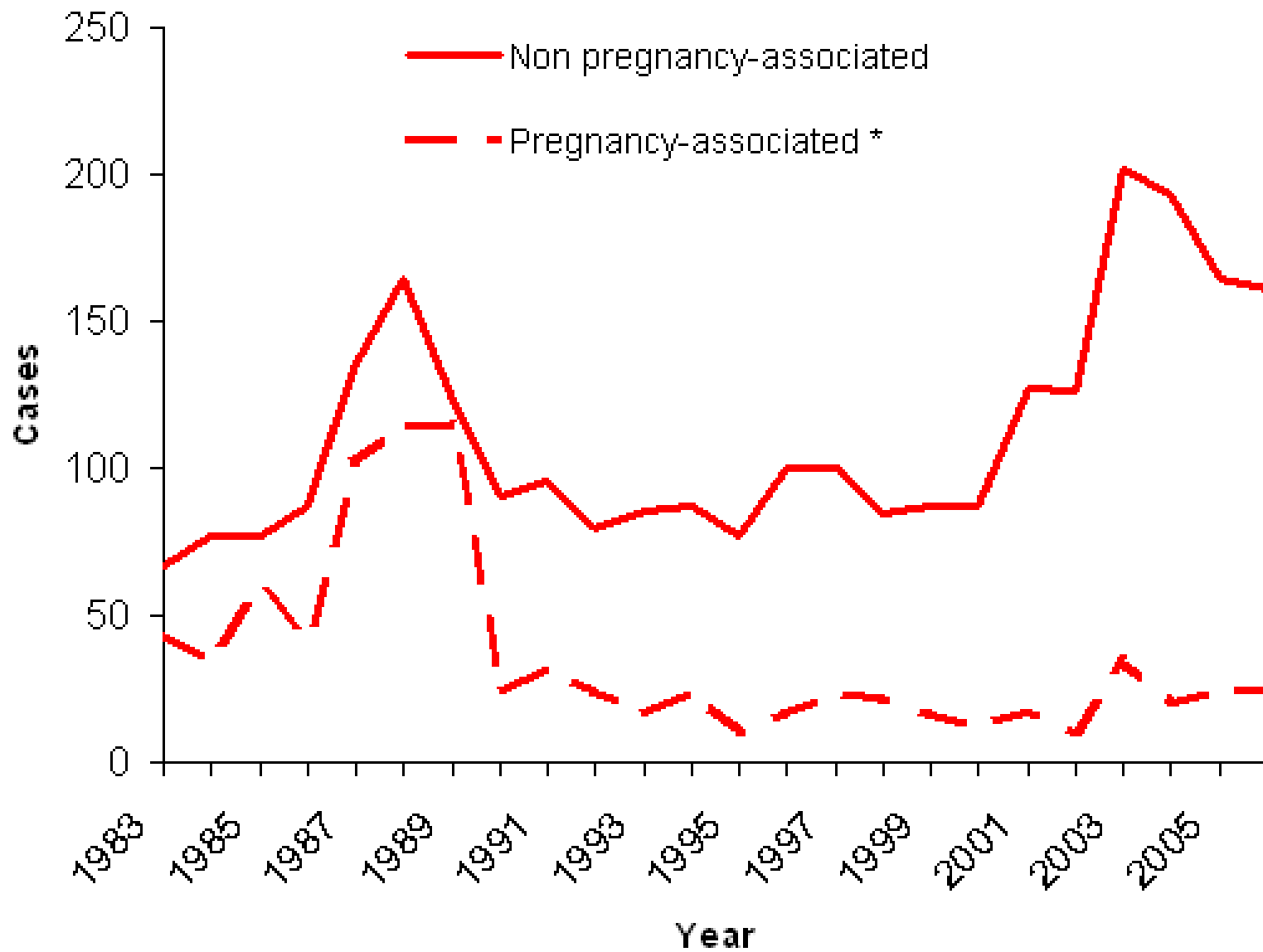
Giardia



Cryptosporidium



Listeria



Cases per 100,000 population

	Oxford	E&W
Campylobacter	138	87
Salmonella	18	21
E coli O157	1	2
Shigella	4	2
Crypto	13	9

C difficile Monthly totals

