

**Please read this bit first**

The HPCSA and the Med Tech Society have confirmed that this clinical case study, plus your routine review of your EQA reports from Thistle QA, should be documented as a "Journal Club" activity. This means that you must record those attending for CEU purposes. Thistle will **not** issue a certificate to cover these activities, nor send out "correct" answers to the CEU questions at the end of this case study.

The Thistle QA CEU No is: **MT00025**.

Each attendee should claim **THREE** CEU points for completing this Quality Control Journal Club exercise, and retain a copy of the relevant Thistle QA Participation Certificate as proof of registration on a Thistle QA EQA.

**Cycle 24 - Organism 5:**

***Morganella morganii***

**Background**

*Morganella morganii* is a gram-negative rod commonly found in the environment and in the intestinal tracts of humans, mammals, and reptiles as normal flora. Despite its wide distribution, it is an uncommon cause of community-acquired infection and is most often encountered in postoperative and other nosocomial settings. *M. morganii* infections respond well to appropriate antibiotic therapy; however, its natural resistance to many beta-lactam antibiotics may lead to delays in proper treatment. *M. morganii* was previously classified under the genus *Proteus* as *Proteus morganii*.

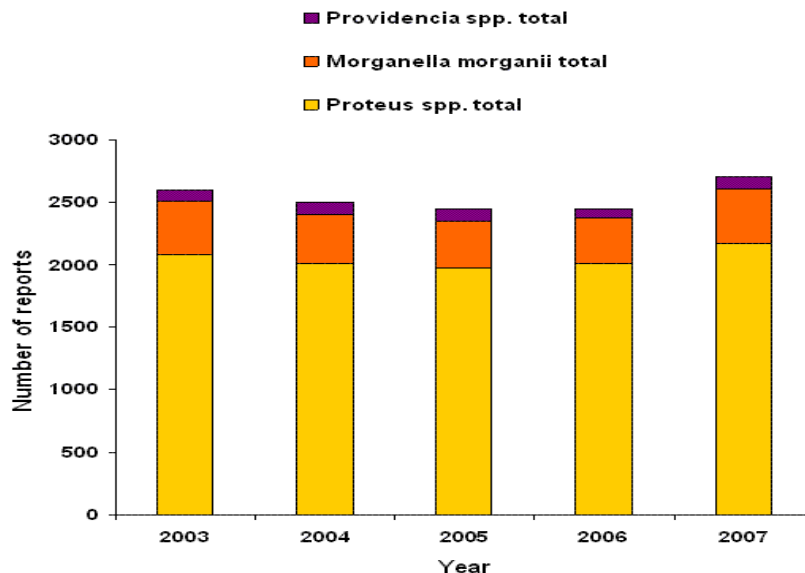
In the late 1930s, *M. morganii* was identified as a cause of urinary tract infections. Anecdotal reports of nosocomial infections began to appear in the literature in the 1950s and 1960s. Tucci and Isenberg reported a cluster epidemic of *M. morganii* infections occurring over a 3-month period at a general hospital in 1977 and of these infections, 61% were wound infections and 39% were urinary tract infections.

The most common source of bacteraemia was postoperative wound infection, and most infections occurred in patients who had received recent therapy with a beta-lactam antibiotic. Other important epidemiological risk factors in these studies included the presence of diabetes mellitus or other serious underlying diseases and advanced age.

**Lab Studies**

- Identification of *M. morganii* is made by recovery of small oxidase-negative catalase and indole-positive gram-negative rods on blood agar or MacConkey agar.
- *M. morganii* ferments glucose and mannose but not lactose.
- *M. morganii* is motile, facultatively anaerobic, and nonencapsulated, and it hydrolyzes urease and reduces nitrates.
- Unlike *Proteus* species, swarming does not occur.
- *M. morganii* urinary tract infections are often associated with an alkaline urine pH.

A recent UK health study found that there was a 4.1% increase (Figure 1) in the total reports of *Proteus* spp., *M. morganii*, and *Providencia* spp. bacteraemia reported via the voluntary surveillance scheme in 2007 (2709 reports), compared to 2003 (2602 reports). This increase was far lower than the 24% increase in reports for all bacteraemia (85,354 to 105,928).



**Figure 1:**  
***Proteus* spp., *Morganella morganii*, and *Providencia* spp. bacteraemia reports (England, Wales and Northern Ireland): 2003 to 2007\***

The number of laboratories voluntarily reporting data for *Proteus* spp., *M. morganii*, and *Providencia* spp. bacteraemia decreased marginally from 196 in 2003 to 184 in 2007. However, the percentage of laboratories identifying *Proteus* spp., *M. morganii*, and *Providencia* spp. isolates to species level increased from 98% in 2003 to 99% in 2007 while the percentage reporting drug susceptibility data increased from 81% in 2003 to 92% in 2007.

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### **CPD Questions:**

1. What factors increase the risk factor for bacteraemia with *M. Morganii*?
  2. Using Figure 1, would you say that bacteraemia with *M. Morganii* is a significant risk?
  3. What percentage of Gram negative bacilli isolated in your own laboratory are *M. Morganii*?
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