
# CLAB Investigation Process CMDHB

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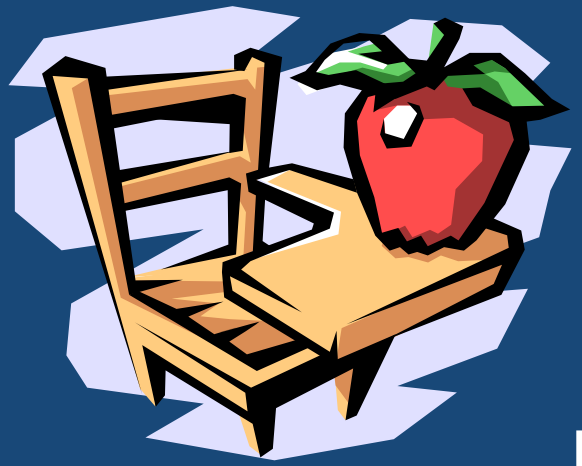
- Purpose
- Review Examples
- Benefits
- CMDHB Current Process

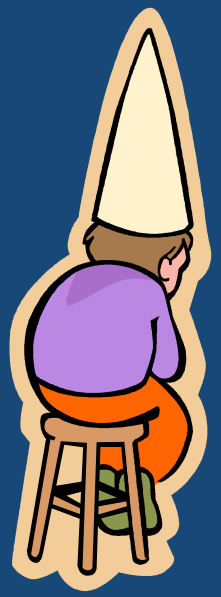
# Purpose of Investigation



Learning

NOT

Punishment



# Brief Summary - Example #1

- Admitted to ICU with severe Epstein -Bar Virus Infection and hemophagocytic syndrome.
- 16/08/2009 – CLAB (central line associated bacteraemia)
  - Total of 4 central lines inserted.
  - All lines 100% compliant with both bundles.
- Very immunologically compromised with a lymphocyte count of 0.1 on the 17/08/2009.

# Problems Identified

- Severe immunological compromised patient not recognised as high risk.
- Difficult to ascertain if line was antimicrobial or not
- Delay in CCC being aware of CLAB due to Infection Preventionist away
- The need to identify patients that are at high risk for CLAB.
- The need for additional intervention for high risk patients

# Recommendations & Actions

- Identify group of patients at higher risk for CLAB
- Identify additional measures for high risk patients, i.e. antiseptic/antibacterial impregnated lines and chlorhexidine impregnated dressings.
- Add to checklist an option to circle if an antiseptic or antibacterial line has been inserted.

# Recommendations & Actions

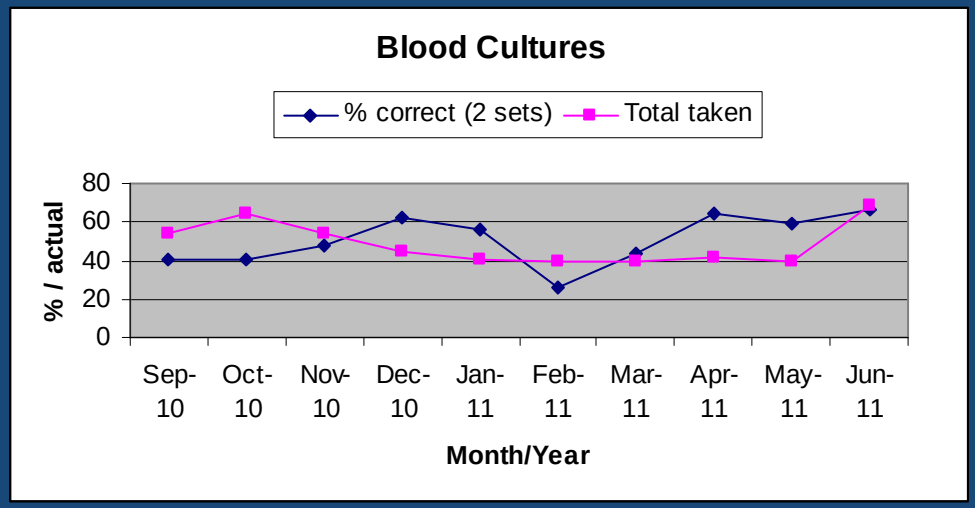
- CLAB needs to be a clinician activity as well as a Infection Preventionist activity. Clinicians need to be familiar with the BSI definitions.
- Improvement in blood culture collection to assist in clarity around attribution of the definition
- Microbiologist to initiate review of  blood culture collection practice

# Example #2 - CLAB cluster

| Patient | Date Line Inserted | Date of BBC | Days to CLAB | Organism | Service inserting line | Insertion Checklist Compliant | Maintenance Checklist Compliance | CHG Dressing | Antibiotic Line | Site/type of line | TPN | LOS in ICU to CLAB | Total LOS in ICU |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| #1 | 13/05/11 | 18/05/11 | 5 | Serratia marcescens | Theatre MMH | Yes | 100% | Yes | Yes | Right Fem Central | No | 7 | 10 |
| #2 | 27/05/11 | 5/06/11 | 9 | Candida albicans | ICU - by radiologist | Yes | 30% | No | Not recorded | PICC | Yes | 36 | 73+ |
| #3 | 10/06/11 | 15/06/11 | 5 | Stenotrophomonas maltophillia | ICU Reg | Yes | 60% | Yes | Yes | Right Jug VC<br>Left Sub Central | No<br>Yes | 22 | 27 |
| #4 | 20/06/11 | 26/06/11 | 6 | Staph epidermidis | Theatre MMH | No | 80% | No | No | Right Jug Central | Yes | 5 | 9 |
| #2 Same patient | 25/06/11 | 1/07/11 | 6 | Enterococcus faecalis | ICU Reg | Yes | 30% | No | Not recorded | Right Jug Central | Yes | 60 | 73+ |

- Interdisciplinary Group Meeting
- Agreed this was an unusual event
- Commonalities reviewed
- In depth discussion around risk factors for each patient

# Review of Blood Cultures




Increased Correct Blood Cultures

Not felt to be a contributing factor.

# Review Findings

- Poor bundle compliance, especially with the maintenance bundle
- Long term patients
- Receiving TPN
- Emergency line not identified as high risk

# Problems Identified

- Compliance to Maintenance bundle not at 100%
- High Risk patients not identified and high risk elements not actioned
- Longer term patients not currently identified as high risk

# Recommendations & Actions

- Raise awareness of compliance problems – charge nurses to check each shift regarding compliance to maintenance bundles
- Raise awareness of high risk patients additional interventions required – Reminder of process to place in communication book and sent to all SMO's and Registrars

# Recommendations & Actions

- Sticker developed for high risk line easy identification


- Widen our criteria for a high risk patient to include patients on TPN (not just long term) and also patients in the ICU longer than 7 days.

# High Risk Profile

- All burns patients
- Immunocompromised patients
- Patients in ICU longer than 7 days
- Patients on TPN
- Lines inserted during an emergency
- Lines that have been rewired.

# Additional High Risk Elements

- Must have a chlorhexidine impregnated dressing on at all times
- Replace emergency line as soon as possible
- Consider using an antibiotic line
- Consider daily bathing with Chlorhexidine

# Example #3 - Brief Summary

- 52% Burns patients, upper body, mainly back and arms, face and chest
- Day 7 of ICU admission
- CVL in place 5 days

# Problems Identified

- 100% compliant with insertion bundle
- 100% compliant with maintenance bundle
- 100% compliant with high risk bundle
  - Antibiotic Line
  - Chlorhexidine Dressing
- Femoral line

# Recommendations and Actions

- Congratulations to all staff
- Despite best efforts some CLAB may still occur
- Continue to encourage avoidance of femoral site when possible.

# Communication of Findings


# Benefits of Review

- Complex Staff Awareness
- Identification of system problems
- Increased importance of CLAB program in complex
- Visiting Staff Awareness

# CMDHB Current Process

- Infection Control email identified CLAB details to Charge Nurse
- Investigation form attached to email
- Completed investigation form reviewed at zero patient harm CLAB meeting

# Investigation Form Contents

- Date of CLAB(use date blood culture drawn)
- Date Line inserted
- Organism Identified
- Where line inserted
- Site inserted
- Brief summary of patients journey

- Did pt meet criteria for high risk?
- Were high risk interventions put in place?
- What high risk interventions were used?
  - Chlorhexidine impregnated dressing
  - Antibiotic Line
  - Antimicrobial lock
- Was insertion checklist compliant?

  If no what was incomplete?
- Was maintenance checklist compliant?

  If no what was incomplete?

- Issues identified
- High risk factors identified
- Opportunities for improvement (Learning's)