Our fight against multiply resistant bacteria

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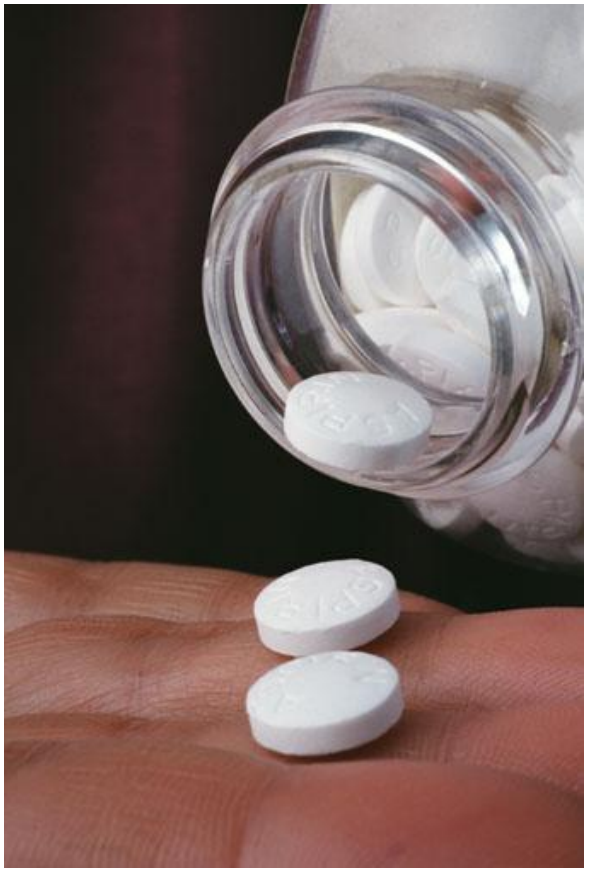
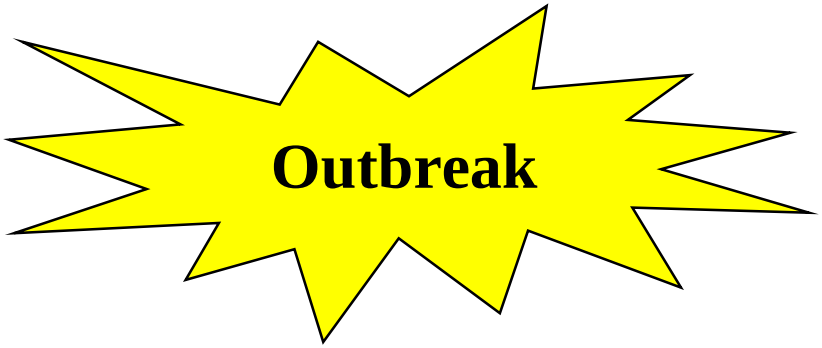
What is the issue with antimicrobial resistance?

- Impact
  - limited choice in therapy
  - possible nosocomial outbreaks



The crux of the issue

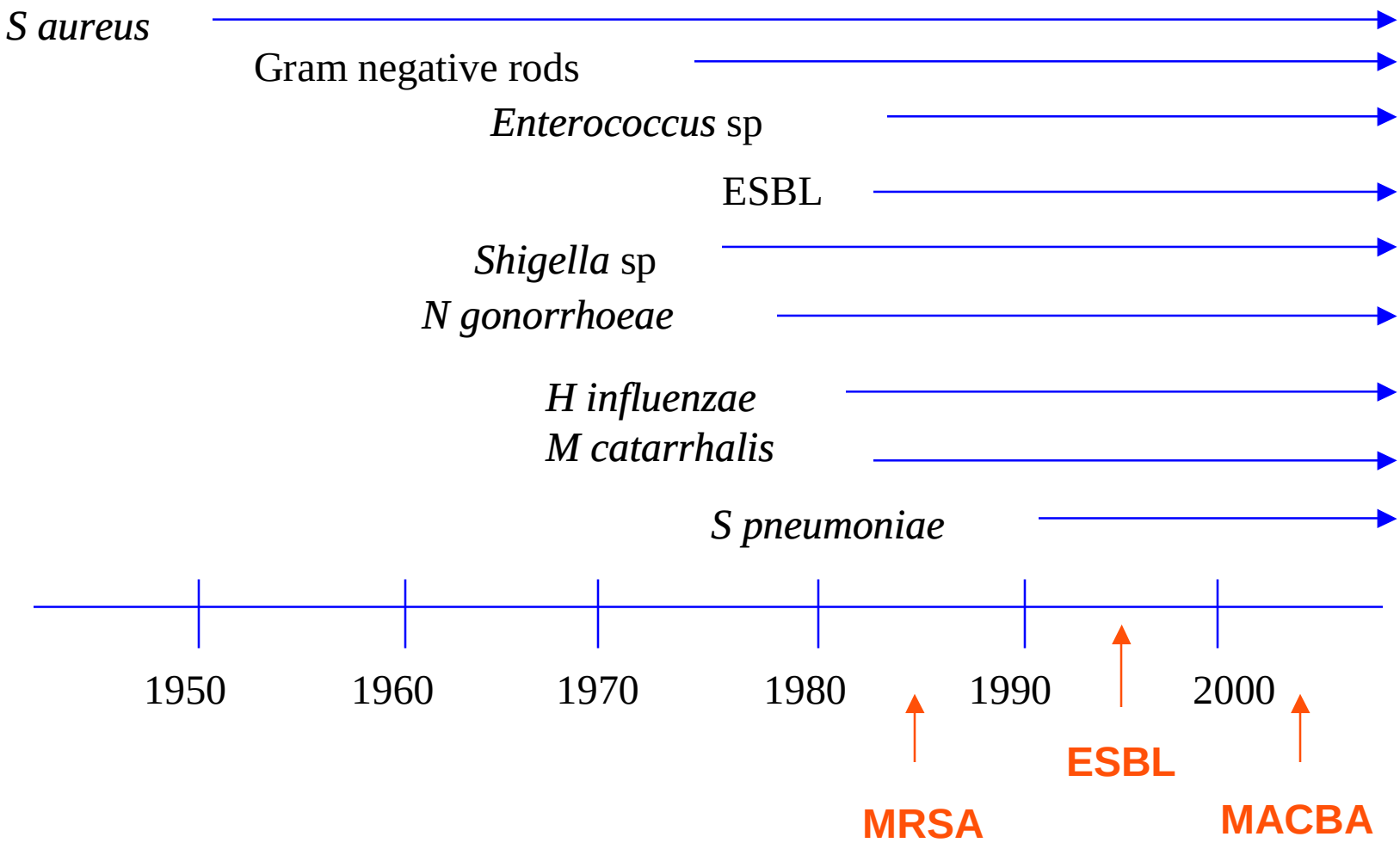
- Our primary concern
  - prevention of spread of bacterial strains among hospitalised patients



The facts

- Multiply resistance
  - rapidity in development
  - increasing incidence
  - nosocomial outbreaks
  - nightmare

Are we doing better in controlling the problem?

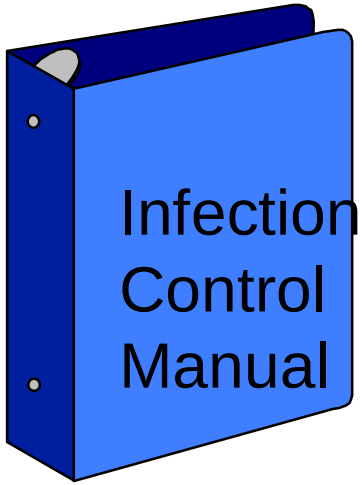


Lessons from experiences with MRSA control

- First isolated in Singapore
  - mid 1980s
- 1986 - top pathogen, MRSA register

Infection Control

- 1990 - Infection Control Manual updated
  - MRSA precautions
  - HIV infection
  - in-service education of all new medical and nursing staff



Infection Control

- 1991 - round yellow discs as MRSA indicators on beds, case sheets, monthly MRSA feedback to clinical heads
- 1995 - computer alert, MRSA cohort wards
- 1997 - liaison nurses training, quarterly meeting

MRSA precautions

- Strict isolation / cohorting
- Contact precautions
- MRSA register
- Notification
- Nasal screening for those with previous history of MRSA
- Nasal screening for clearance

Failure to isolate /cohort

- Insufficient beds to cohort all medical cases - only 16 beds in cohort ward of SGH
- No cohort areas for surgical cases
- Multiple patient transfers because of change in discipline
- Difficulty in patient identification: computer system not linked for in- and out-patient: MRSA cases not identified

Increases in MRSA cases

- Routine screening
  - cases referred to long term care facilities
  - patients on IJ and Tenchkoff catheter
  - weekly screening of urine, CVL exit sites, blood and throat swabs of all BMT patients
  - all Burns patients

National MRSA precautions - revised (1998)

- Isolating or cohorting MRSA patients:
  - pneumonia
  - wounds that cannot be adequately covered with sealed dressing
  - exfoliative dermatitis

- **STOP** all routine screening for clearance and carrier status for re-admitted MRSA cases

Facts on MRSA in Singapore

- Rational isolation precautions policy
  - isolating heavy MRSA dispersers
  - Standard Precautions
  - Contact Precautions
- Cost-effective infection control measures
- MRSA is an endemic problem in Singapore
  - acceptance of fact

What really works

- Strict isolation during SARS period
- Good hand hygiene practice during and post-SARS

Lessons from MRSA management

- There is nothing you can do if you miss the boat
- Nip the bud early while you can
- ISOLATE

Extended spectrum beta lactamases (ESBL)

- Multiply resistant Gram negative bacteria

- Antiobiogram
  - resistant to all penicillins, cephalosporins
  - susceptible ONLY to carbapenem (imipenem or meropenem)

Lessons from control of ESBL

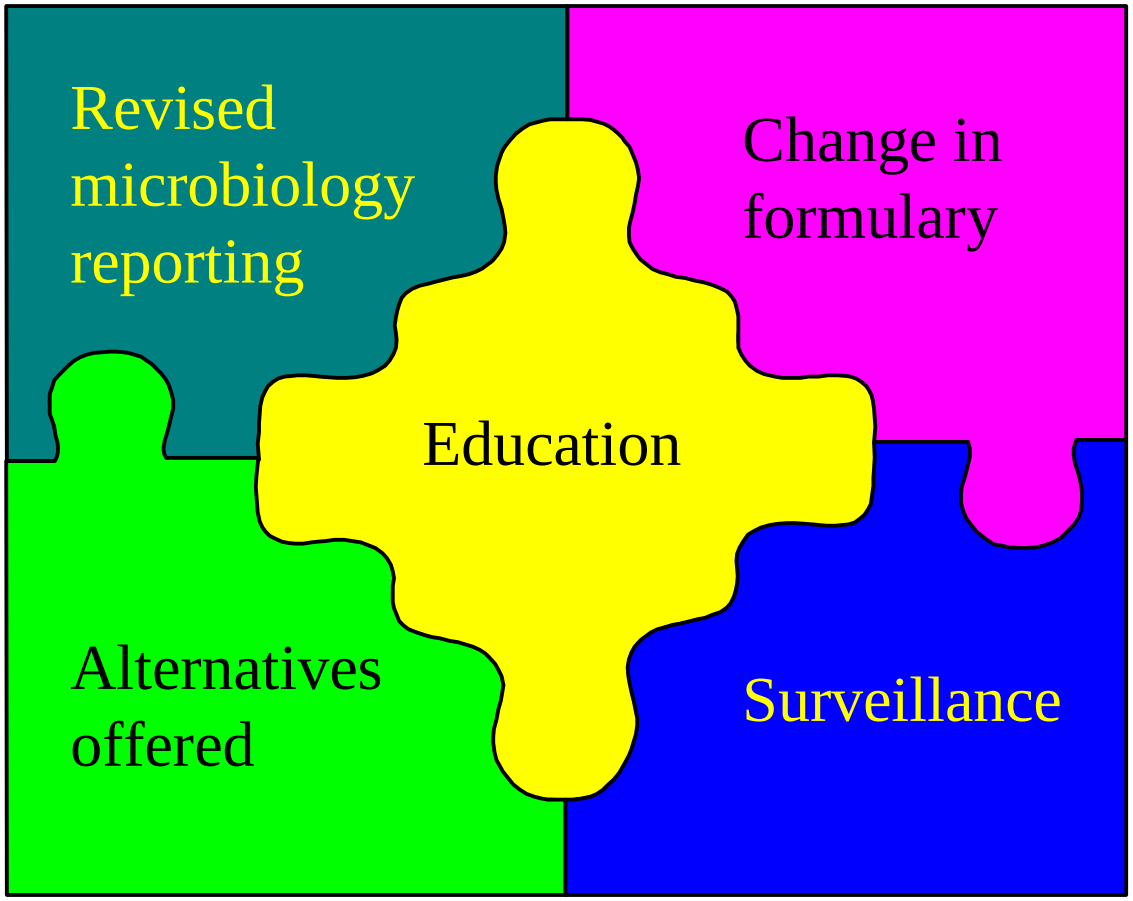
- First reported in literature in 1983 in world

- Singapore - first looked for in 1995

ESBL Control Workgroup at SGH

- Chairman of Medical Board
- Chairman, Pharmacy &Therapeutics
- Snr Consultant, Anaesthesia
- Infectious Disease Physician
- Chairman, Infection Control Committee
- Infection Control Officer
- Manager, Pharmacy

Strategies



Advantages

- Multi-prong approach
- Avoid squeezing the balloon
- Top management support

Lessons learnt

- Team approach
- Multi-prong strategy
- Top management support
- Physician buy-in
- **Difficult to sustain**

mACBA

- Antibiogram
  - multiply resistant *Acinetobacter baumannii*
  - susceptible ONLY to Polymyxin B
- Similar epidemiology as MRSA

Control measures

- Similar strategy as for ESBL control
- Wider commitment and involvement of Clinical Heads
- Regular feedback
- Ongoing education - posters, etc

Antibiotic Resistance

- Not an issue for committees
  - infection control
  - P&T

- **EVERYONE** has a part to play
  - team approach

Conclusion

- Control of antimicrobial resistance is an ongoing challenge
- Multi-prong strategy
- Success guaranteed with teamwork using quality improvement methodology