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transfusionoutcomes

research collaborative



A partnership between Monash University and the Australian Red Cross Blood Service



Haemovigilance and research



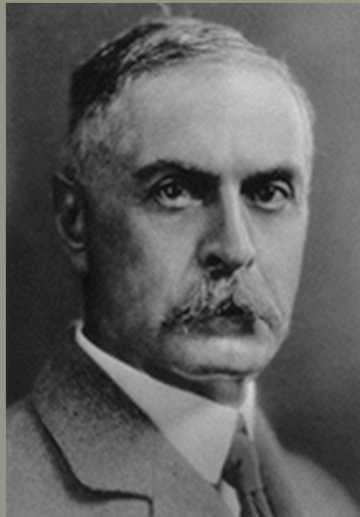
Karl Landsteiner, 1868 – 1943
Discovered ABO blood groups in 1901

What else did Karl Landsteiner describe/discover?

- MN and P(1) antigens
- “Rhesus factor”
- Donath-Landsteiner phenomenon
- Purification of antibodies
- Haptens
- Polio virus
- Dark-field microscopy for study of syphilis, also transfer of syphilis between animals

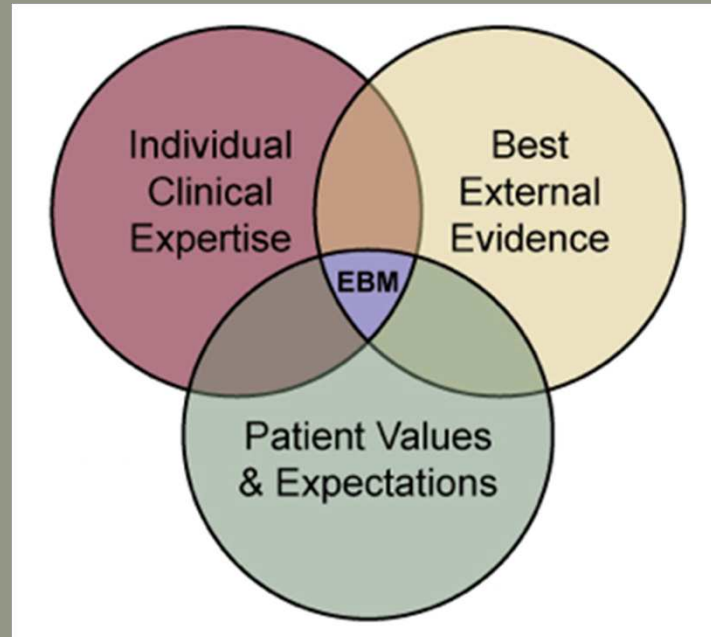
“On individual differences in human blood....”

“All in all, the results of blood transfusions are already highly satisfactory, and we have reason to hope that a thorough study of cases with undesirable after-effects will help us to assess the significance of the suspected causes and perhaps reveal unknown causes, and thus finally virtually eliminate the slight risks which transfusion still involves.”

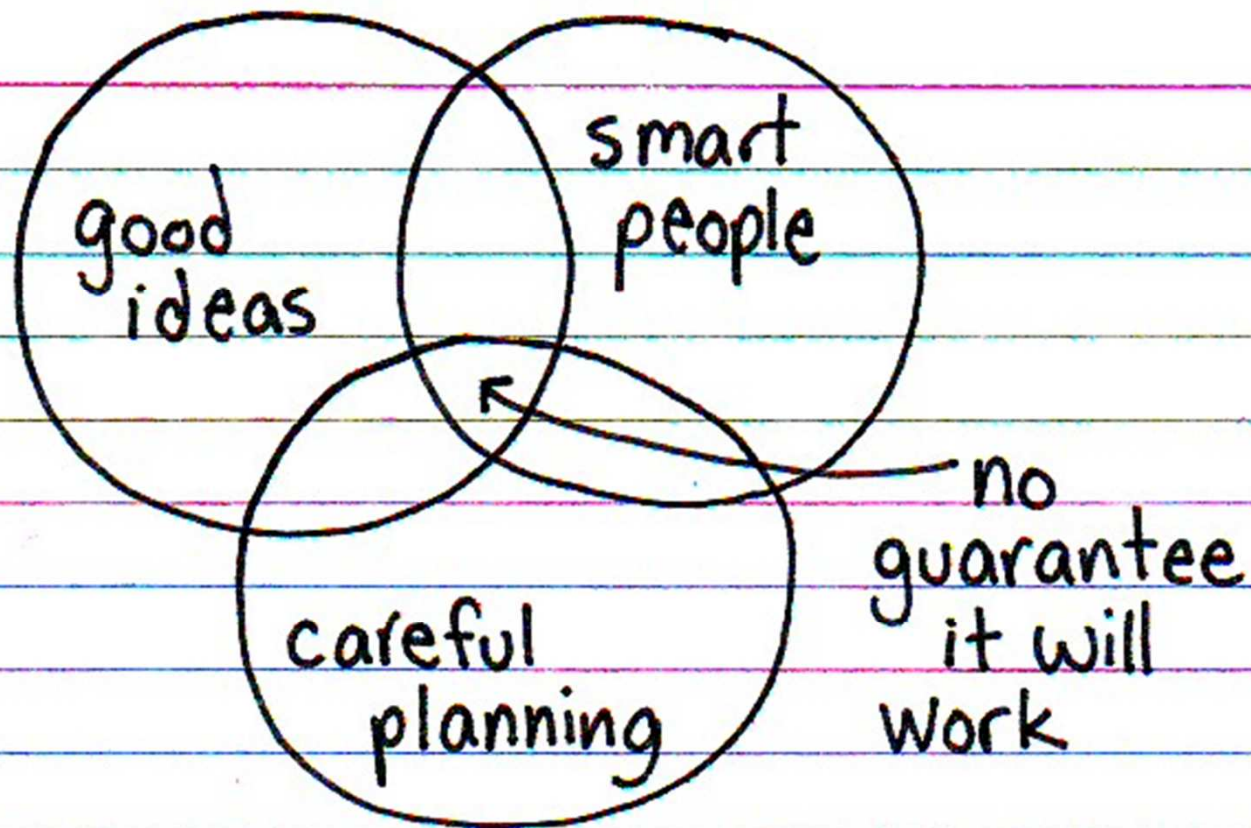


Haemovigilance!

Evidence-based transfusion practice



- Need more evidence-based practice
- Many types of data can be used to improve practice
- Consider broadly, incl understanding cost-effectiveness



Scope of HV

- HV and research: investments to reduce risks and improve outcomes
- Interaction of HV, clinical practice and research depends on definitions/boundaries
- If transfusion not indicated, no risk is worth taking, even if small (→ understanding clinical decision-making and appropriateness central to HV)
- Many questions:
 - What is optimal scope of HV activity?
 - Who decides and how?

HV scope and definitions

- If HV includes broader practice-related aspects (decision-making, utilisation/wastage), how to define & monitor?
- Recognition and classification (e.g. DHTR; TRALI v ARDS)
- “Non-blood” but transfusion-related, e.g.
 - recombinant products
 - procedural aspects (e.g. line-related TPE procedural complications)
- Precise, common definitions to compare experience and monitor progress
- Mechanism to update definitions with changes in concepts as better understand basic biology or procedural issues?

Bacterial contamination: Active vs passive surveillance

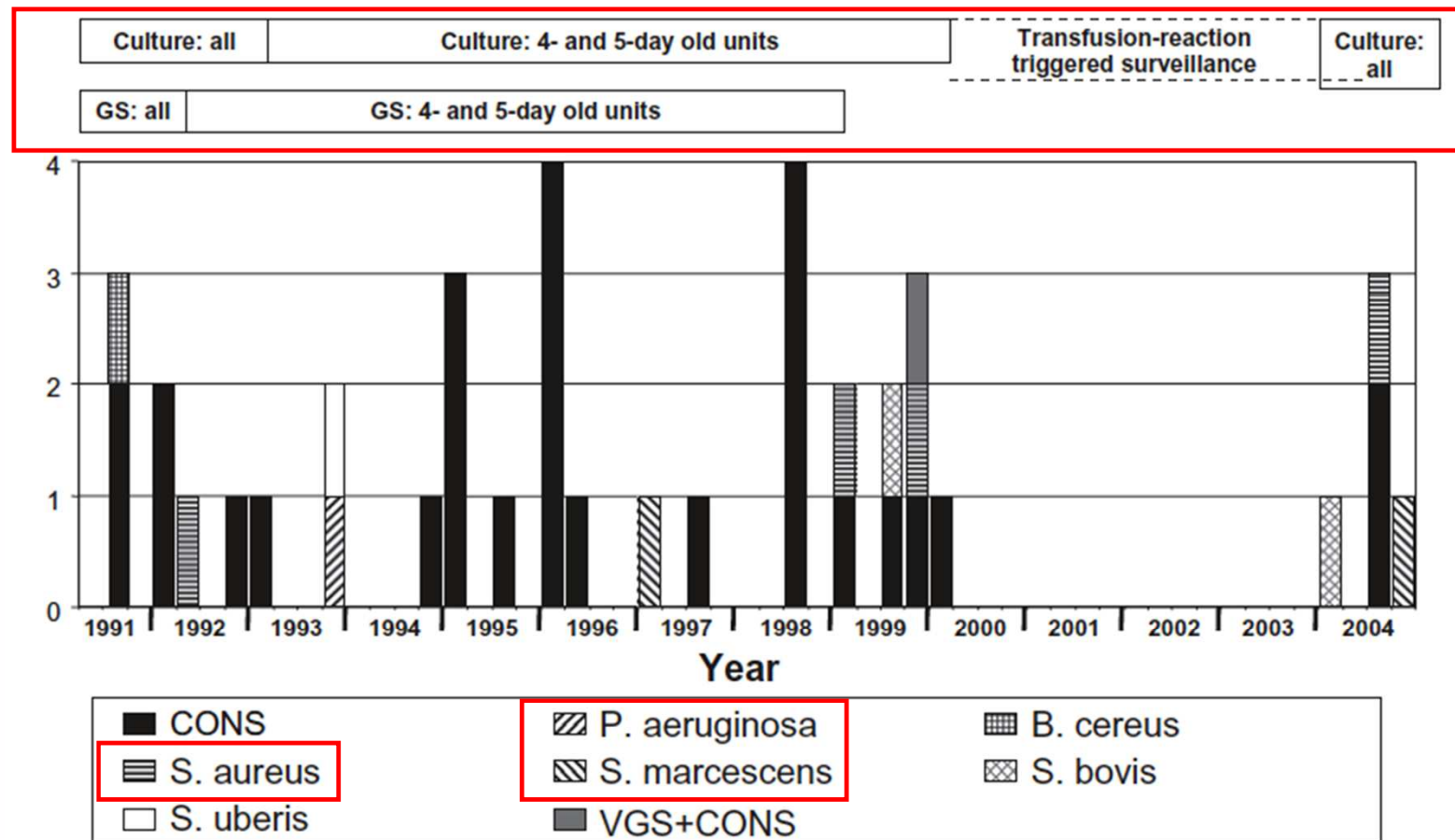


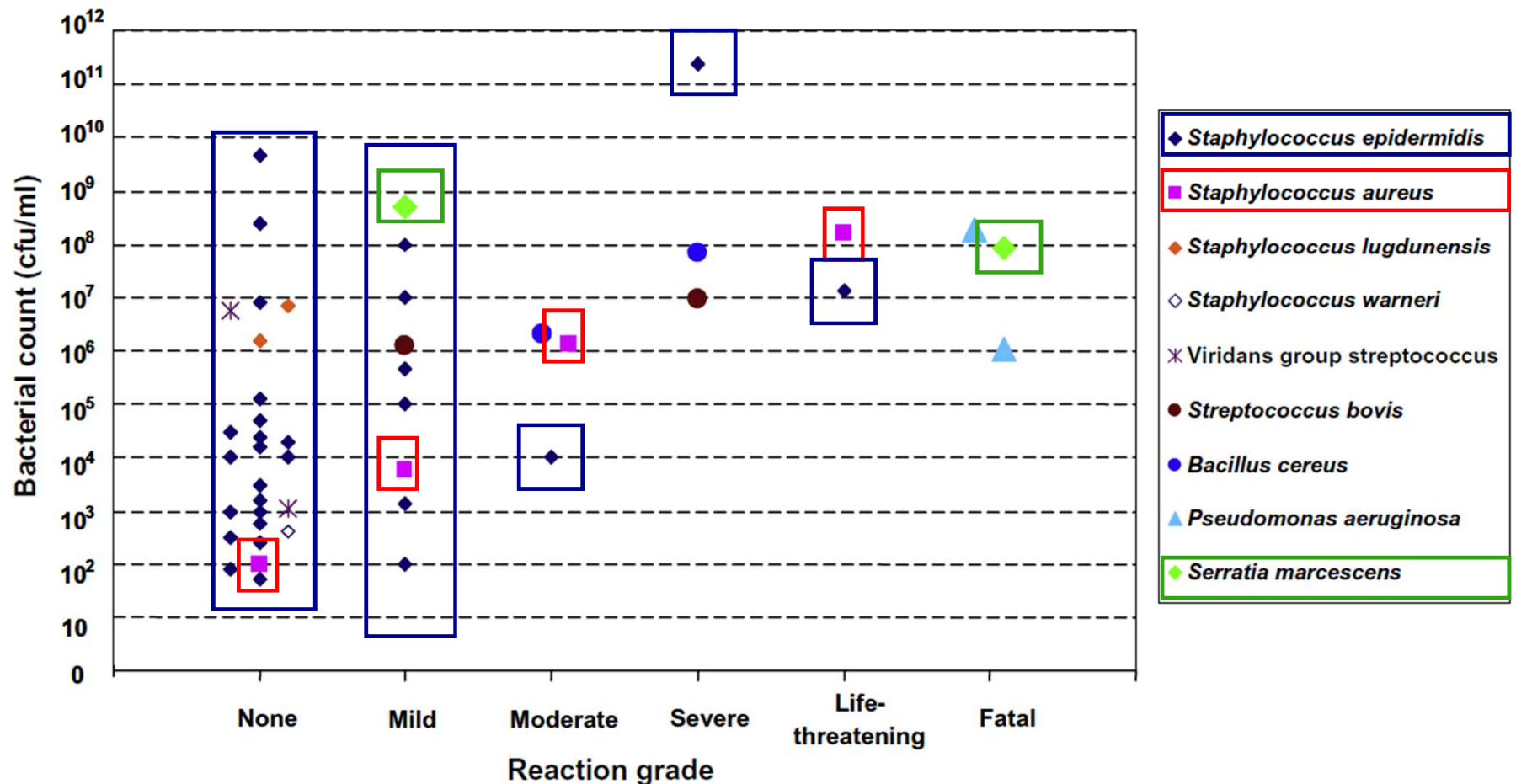
Fig. 1. Histogram of bacterial contaminants isolated during study period with surveillance procedures in use. Data are shown by quarter in each year. GS = Gram stain; CONS = coagulase-negative staphylococcus; VGS = viridans group streptococcus.

What can HV do?

Identify problems that need more research:

- What the problems are and their consequences:
 - for donors and patients
 - for the system (e.g. impact of changing donor eligibility on blood availability; cost-effectiveness questions)
- The scale of the problem: how common, impact and spectrum (from severe to trivial, near misses)
- Priorities: Where to direct our efforts
- Careful case description and analysis can suggest donor/product/patient/process-related factors/mechanisms
- Potential approaches to investigation

Patient and product factors: Bacterial load and transfusion reactions



What can HV do?

- Raise profile of transfusion with
 - Patients and community
 - Hospital management
 - Blood services and other suppliers
 - Blood donors
 - Governments
- Share data and show success to build more success:
 - Impact of hospital experience for other hospitals
 - Impact of one country's data for other countries