

# How is burn wound infection assessed in studies evaluating interventions for burns? A Systematic Review

Anna Davies<sup>1</sup>, Francesca Spickett-Jones<sup>2</sup>,  
Toby Jenkins<sup>3</sup> and Amber Young<sup>1, 2</sup>

<sup>1</sup>University of Bristol

<sup>2</sup>Bristol Royal Hospital for Children, and

<sup>3</sup>University of Bath



# The problem: Burn wound infections

- To identify effective treatments for burns we can only know if they work by assessing the **same** outcome
  - Recent reviews indicate inconsistency of assessment for antibiotic prophylaxis (Avni et al., 2010; Barajas-Nava et al., 2013)
- Burn wound infections are hard to diagnose
  - Share features with normal response to burn injury
- Clinical judgement is used
  - Numerous wound and systemic signs assessed
  - Follow-up tests used to determine if infection present
- We know that there is little UK guidance is available about when to treat (Davies et al., 2017)



# Burn wound infection tools/guidelines

- Handful of tools: ABA, CDC, EWMA, Peck et al., Church et al.,
- Limited by:
  - Tests that we don't use in UK- Biopsy (ABA, CDC)
  - Symptoms that we rarely see – e.g. ecthyma gangrenosum (EWMA)
  - Symptoms that *are* a wound infection - cellulitis
  - Unwieldy - 20+ items
- Are people using them to diagnose infection in intervention studies?

# Aims of the review

**Objective:** To document how burn wound infection has been assessed in studies evaluating interventions to treat patients with burns.

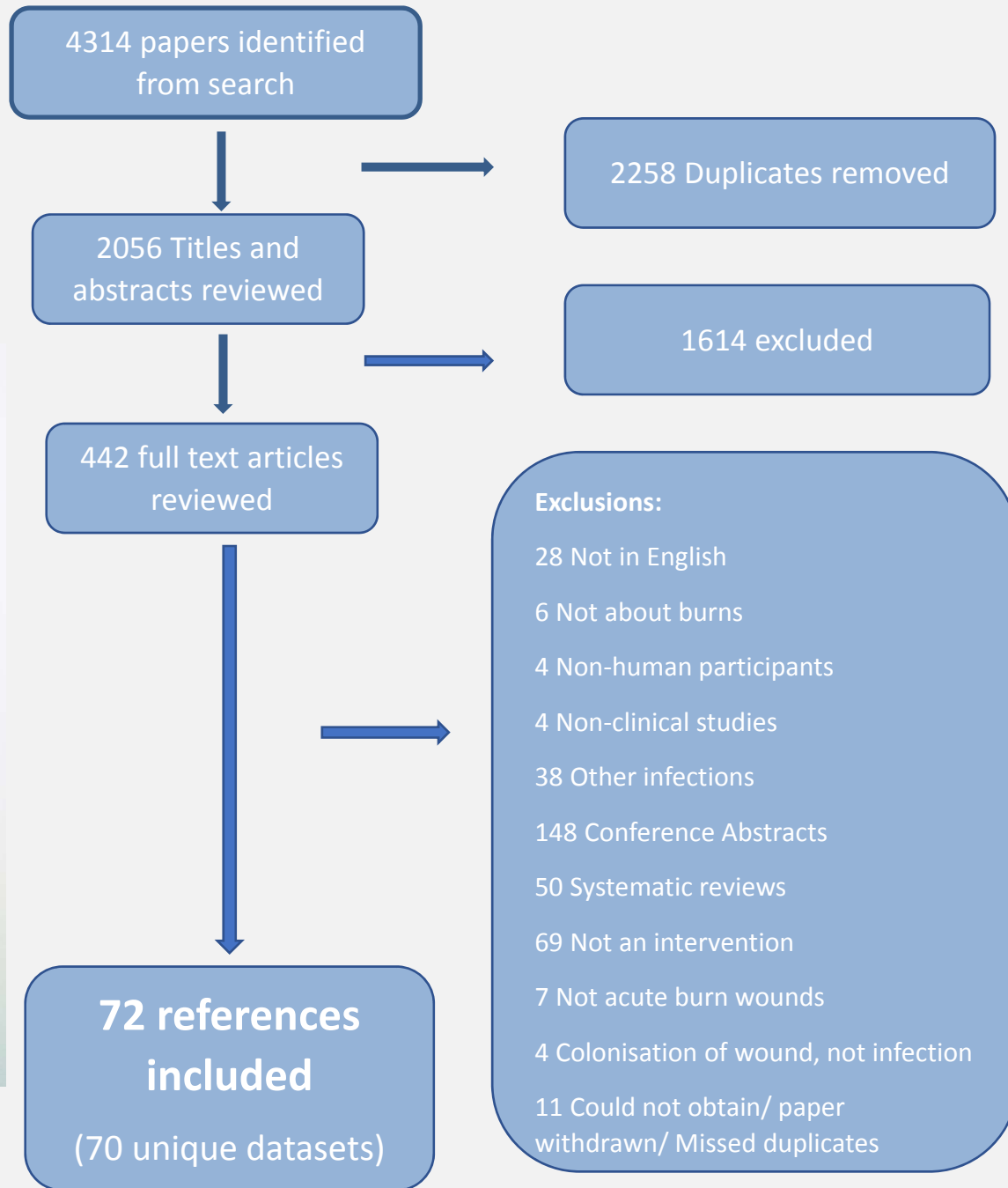
1. To identify what indicators of burn wound infection are being used to identify presence of wound infection
2. To determine the extent to which established tools are being used

# Method: Systematic Review

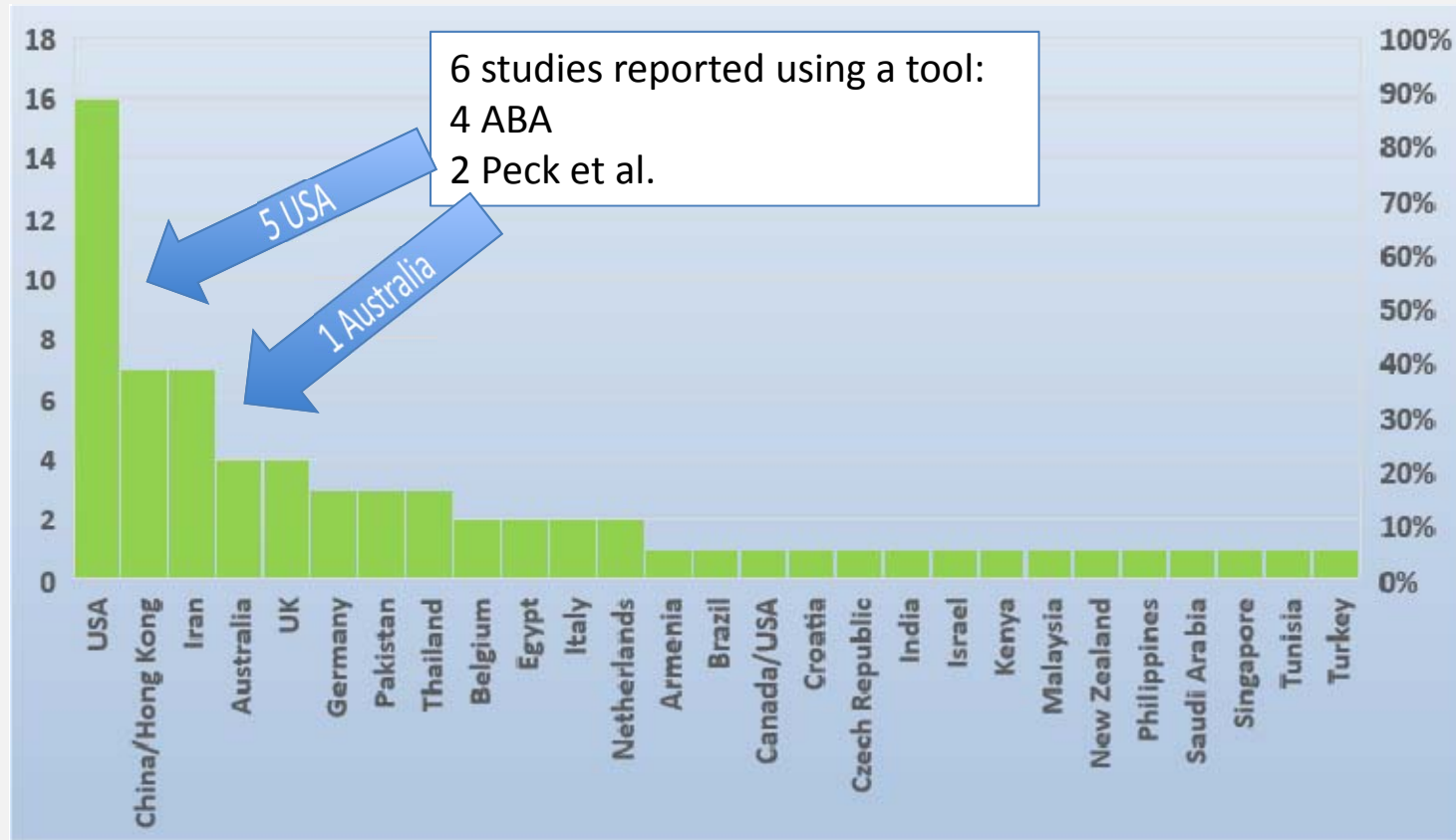
- Search of 5 databases 2010-end 2016:
- Searched: Burns, wound infection, trial/interventions

Inclusion	Exclusion
Studies published between 2010-16	Not in English
Trials/observational studies of an intervention	Not exclusively about burns
Report wound infection in methods or results	Non-human subjects
	Non-clinical study
	Other infections e.g. UTI, CLABSI, Donor site
	Abstract for conference
	Systematic reviews, single case studies
	Not an RCT or observational study reporting an intervention
	Not acute burn wounds (e.g. skin flaps)
	Reports colonisation only

# PRISMA diagram



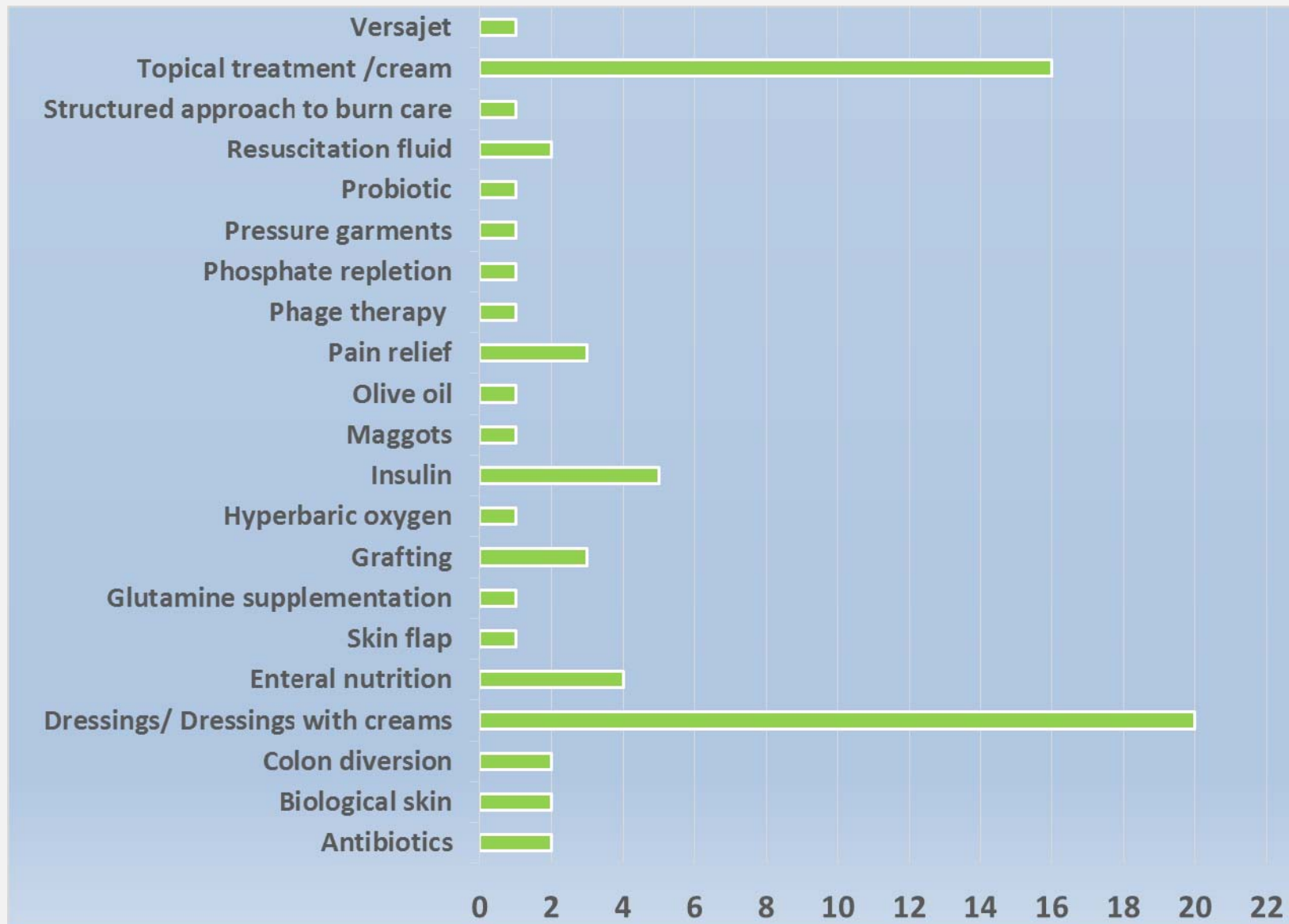
# Findings: types of studies



37 RCTs

20/70 Studies with primary/secondary aim of looking at wound infection

# Findings: types of interventions

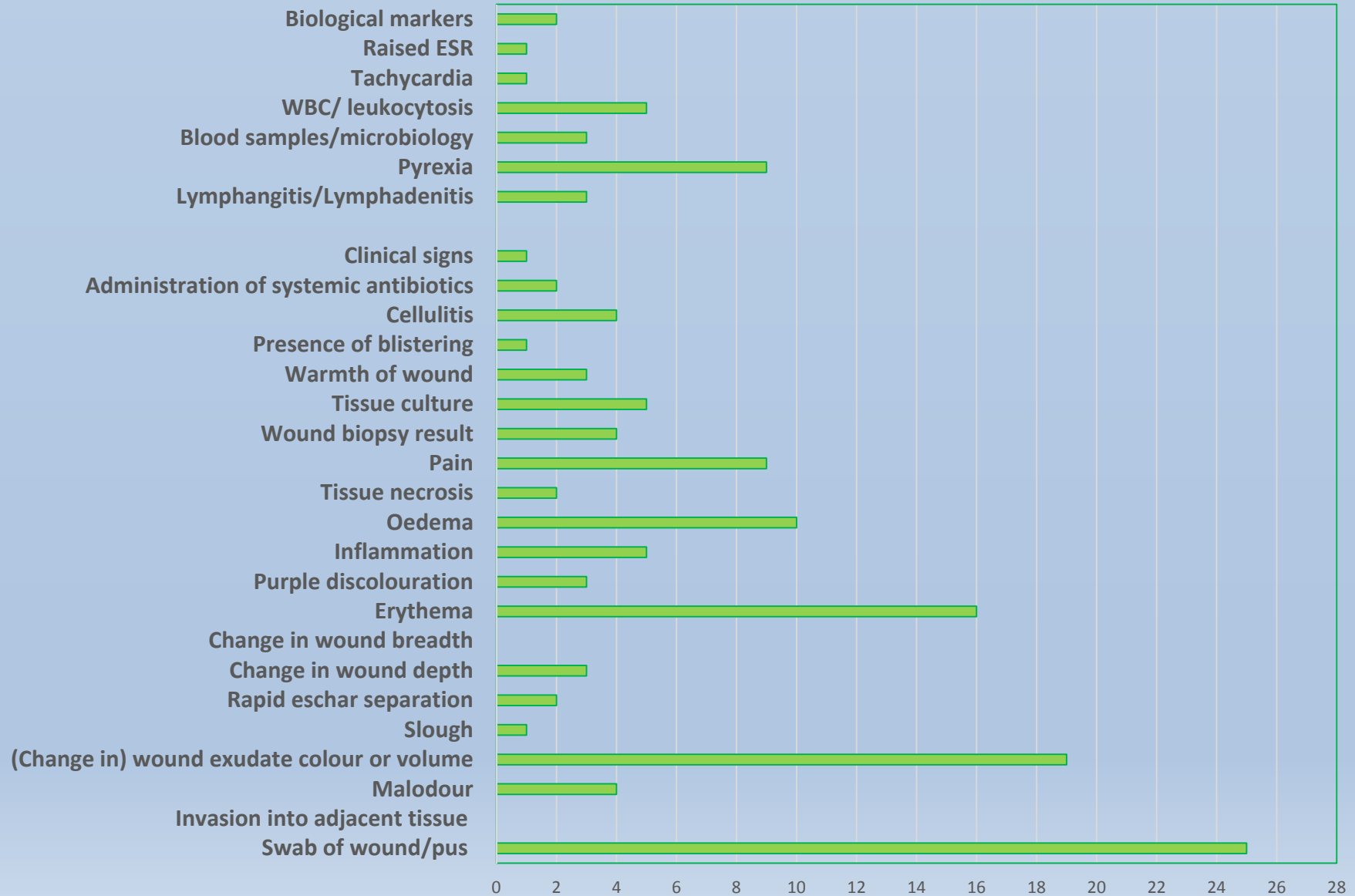




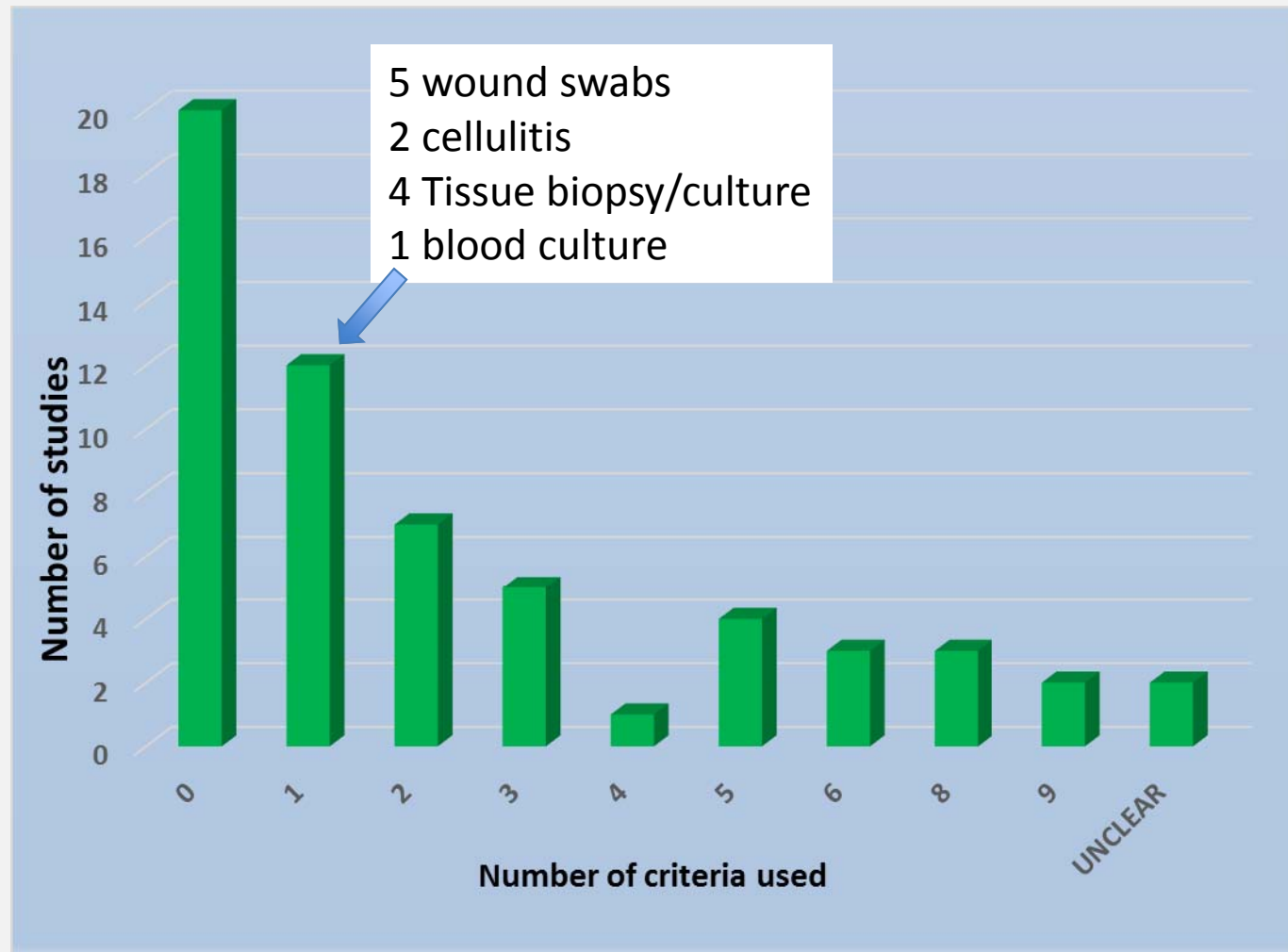
# Findings: Criteria used

- 57/70 Studies reported that they had assessed wound infection in their methods
- Of these: 24/57 reported only that they assessed wound infection/infection with no further details given
- There was varied terminology used: Wound infection, infection, infectious complications, adverse events, infection rate, infection episodes, local adverse events, cellulitis.

# Findings: Criteria used



# Findings: number of criteria used



# Conclusions

- Burn wound infections are difficult to diagnose
  - Current guidance (e.g. ABA, EWMA) is under used
  - In current evidence there is considerable variation in:
    1. Whether people report how they have diagnosed infection
    2. Criteria applied for diagnosing infection
- ? Over-reliance on swabbing without reference to the clinical picture

This evidence suggests we be careful about drawing conclusions about burns interventions without standardised reporting of burn wound infection

# Next steps: the ICon-B study

- Development of a new standard for reporting the presence of burn wound infection -minimum dataset
- In the absence of a gold standard, we need a pragmatic set of reporting criteria:
  - What (evidence-based) criteria do clinicians think are important for identifying infection?
  - If they are frequently seen in patients?
  - If they are tested and recorded in the UK?

# Next steps: Delphi survey

Survey with clinicians and microbiologists  
Summer 2018

**We need your help!**



Participation in the development work if you  
have expertise in Delphi or minimum datasets  
Participation in the Delphi if relevant to you

# Acknowledgements

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