

| Background                                                                                                                                                                                                                                                                                                                                         | Results: Infection                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Wider Impact |        |    |    |                      |     |    |      |                   |     |      |      |                    |     |      |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|--------|----|----|----------------------|-----|----|------|-------------------|-----|------|------|--------------------|-----|------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"><li>Traumatic wounds account for ~5% of ED attendances; infection occurs in ~3–5%.</li><li>Irrigation reduces bacterial load and infection risk.</li><li>Most guidelines permit either tap water (TW) or sterile saline (SS); the American College for Emergency Medicine recommends TW.</li></ul>               | <ul style="list-style-type: none"><li>No increased infection risk with tap water</li></ul> <table><tr><th>Study</th><th>n</th><th>TW</th><th>SS</th></tr><tr><td>Moscatti et al. 2007</td><td>634</td><td>4%</td><td>3.3%</td></tr><tr><td>Weiss et al. 2013</td><td>625</td><td>3.5%</td><td>6.4%</td></tr><tr><td>Angerås et al.1992</td><td>705</td><td>5.4%</td><td>10.3%*</td></tr></table> <p>*p&lt;0.05; other comparisons non-significant</p> <ul style="list-style-type: none"><li>Smaller RCTs (n&lt;60) found no significant difference (Griffiths, Valente, Bansal)</li><li>Resende et al.: TW showed significantly greater gram-positive bacterial clearance (p=0.041)</li></ul> | Study        | n      | TW | SS | Moscatti et al. 2007 | 634 | 4% | 3.3% | Weiss et al. 2013 | 625 | 3.5% | 6.4% | Angerås et al.1992 | 705 | 5.4% | 10.3%* | <p><b>Cost</b></p> <p>Projected national saving: ~US\$65.6M/year if TW replaced SS.</p> <p><b>Sustainability</b></p> <p>Less single-use plastic, clinical waste and carbon emissions.</p> <p><b>Workflow</b></p> <p>Immediately available at point of care; no sterile packaging or storage.</p> <p><b>Patient experience</b></p> <p>No significant difference in pain, comfort or satisfaction.</p> <p><b>Accessibility</b></p> <p>~74% of the global population has safely managed potable water.</p> |
| Study                                                                                                                                                                                                                                                                                                                                              | n                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | TW           | SS     |    |    |                      |     |    |      |                   |     |      |      |                    |     |      |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Moscatti et al. 2007                                                                                                                                                                                                                                                                                                                               | 634                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 4%           | 3.3%   |    |    |                      |     |    |      |                   |     |      |      |                    |     |      |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Weiss et al. 2013                                                                                                                                                                                                                                                                                                                                  | 625                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 3.5%         | 6.4%   |    |    |                      |     |    |      |                   |     |      |      |                    |     |      |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Angerås et al.1992                                                                                                                                                                                                                                                                                                                                 | 705                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 5.4%         | 10.3%* |    |    |                      |     |    |      |                   |     |      |      |                    |     |      |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <h3>Aims</h3> <ul style="list-style-type: none"><li>To compare TW with SS for traumatic wound irrigation in the ED, focusing on infection, cost, sustainability and accessibility.</li></ul>                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |              |        |    |    |                      |     |    |      |                   |     |      |      |                    |     |      |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <h3>Methods</h3> <ul style="list-style-type: none"><li>Narrative review: PubMed &amp; Google Scholar, August 2025.</li><li>Prospective comparative human studies reporting infection outcomes.</li><li>Excluded: open fractures, animal studies, high-risk/complex wounds.</li><li>No PRISMA methodology used — acknowledged limitation.</li></ul> | <div>Cochrane pooled analysis<br/>RR 0.84 (95% CI 0.59-1.19)<br/>8 RCTs . N = 2,204<br/>No significant difference in infection</div> <div><h3>Take-Home Message</h3><p>Potable TW appears as safe as SS for traumatic wound irrigation in the ED.</p><p>Potential advantages include lower cost, less waste and easier point-of-care access.</p><p>Evidence remains low-certainty, larger standardised multicentre trials are needed.</p></div>                                                                                                                                                                                                                                               |              |        |    |    |                      |     |    |      |                   |     |      |      |                    |     |      |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |