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Comparison of Alcohol-Based Sanitizers Versus Personal Protective Equipment on the Incidence of Hospital-associated Infections

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PICO Question: In healthcare settings what is the effect of alcohol-based sanitizers compared to usual personal protective equipment on the incidence of infections?

**POPULATION**
The CDC healthcare-associated infection (HAI) prevalence survey provides an updated national estimate of the overall problem of HAIs in U.S. hospitals. Based on a large sample of U.S. acute care hospitals, on any given day, about 1 in 25 hospital patients has at least one HAI. There were an estimated 722,000 HAIs in U.S. acute care hospitals in 2011. About 75,000 hospital patients with HAIs died during hospitalizations. More than half of all HAIs occurred outside of the intensive care unit.¹

<table>
<thead>
<tr>
<th>Major Site of Infection</th>
<th>Estimated No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pneumonia</td>
<td>157,500</td>
</tr>
<tr>
<td>Gastrointestinal Illness</td>
<td>123,100</td>
</tr>
<tr>
<td>Urinary Tract Infections</td>
<td>93,300</td>
</tr>
<tr>
<td>Primary Bloodstream Infections</td>
<td>71,900</td>
</tr>
<tr>
<td>Surgical site infections from any inpatient surgery</td>
<td>157,500</td>
</tr>
<tr>
<td>Other types of infections</td>
<td>118,500</td>
</tr>
<tr>
<td>Estimated total number of infections in hospitals</td>
<td>721,800</td>
</tr>
</tbody>
</table>

**INTERVENTION**
- Alcohol-based sanitizers
- Chlorhexidine
- Iodines
- Handwashing
- Gloves
- Goggles
- Face Mask
- Gowns
- Shoe Covers

**STRENGTH OF EVIDENCE**

**Level of Evidence**
- 1
- 2
- 3
- 4
- 5
- 6
- 7

**Citation**

**CLINICAL DECISION**
- Based on the evidence alcohol-based products are more effective for standard hand hygiene/hand antisepsis, however Concentrations of alcohol-based sanitizers vary.
- The most effective in fighting hospital-associated infections are those with concentrations between 60% and 90%.
- Using a combination of alcohol based Sanitizers and gloves is also recommended in fighting HAIs.