“This house believes that infra-red taps should be removed from healthcare premises in Wales”
Speaking against the motion......

• The problem is more complex than can be simply solved by removing all infra-red taps.

• That there are benefits to such taps.

• We shouldn’t throw these benefits out with the tap water........
Facilities:
Adequate hand washing facilities must be available and easily accessible in all patient areas, treatment rooms, sluices and kitchens. Basins in clinical areas should have elbow or wrist lever operated mixer taps or **automated controls**
• Elbow-operated or **non-touch mixer taps** are required for all clinical hand-wash sinks.

• Hand-wash sinks must be designed for that purpose.

• The taps must not be aligned to run directly into the drain aperture.
Which sensor tap is right for me?

Reduces risks of infection from tap handling

Reduces amount of water used

Increases compliance with hand hygiene due to ease of use

Increases risk of infection due to tap colonisation

Increases risk of Legionella due to poor water flow (flushing)

Causes more splashing due to over-sensitive sensors.
TAP......
INTO THE EVIDENCE!!
**Pseudomonas aeruginosa and taps**

- Over 4 decades *Ps. aeruginosa* has been a significant pathogen on critical care units.
- There is little evidence to suggest that this has increased in relation to the more widespread use of infra-red taps.
- There are many papers documenting the colonisation of taps and sinks of all types in a variety of different ICUs.
<table>
<thead>
<tr>
<th>Authors / year of publication</th>
<th>Study period</th>
<th>Setting</th>
<th>Ward(s)</th>
<th>No of positive tap water samples/no tested (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ferroni et al 1998</td>
<td>1994</td>
<td>Paediatric Hospital Paris</td>
<td>Paeds surgical ward</td>
<td>21/118 (18)</td>
</tr>
<tr>
<td>Berthelot et al 2001</td>
<td>1995 – 1996</td>
<td>University Hospital St. Etienne</td>
<td>2 mixed ICUs</td>
<td>34 in each, but no denominator given</td>
</tr>
<tr>
<td>Trautmann et al 2000</td>
<td>1996 – 1997</td>
<td>University Hospital Ulm, Germany</td>
<td>Surgical ICU</td>
<td>49/72 (68.1)</td>
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<tr>
<td>Reuter et al 2002</td>
<td>1998 – 1999</td>
<td>University Hospital Ulm, Germany</td>
<td>Surgical ICU and peripheral wards</td>
<td>150/259 (58)</td>
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<tr>
<td>Valles et al 2004</td>
<td>1996 – 1999</td>
<td>Teaching Hospital, Barcelona, Spain</td>
<td>Mixed ICU</td>
<td>93/149 (62.4)</td>
</tr>
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<td>Blanc et al 2004</td>
<td>1998</td>
<td>University Hospital Lausanne, Switzerland</td>
<td>5 ICUs of different specialties</td>
<td>21/216 (9.7)</td>
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<tr>
<td>Trautmann et al 2005</td>
<td>2001</td>
<td>University Hospital Ulm, Germany</td>
<td>Medical ICU</td>
<td>60/143 (42)</td>
</tr>
</tbody>
</table>
Contribution of tap water to patient colonisation with *Ps. aeruginosa* in a medical intensive care unit

- Conventional water taps.
- 657 tap water samples taken
- 127 hands of healthcare workers were sampled
- *Ps. aeruginosa* was isolated from 38 patients
- >50% of *Ps. aeruginosa* carriage in patients was acquired via tap water or cross contamination.
- Carriage of *Ps. aeruginosa* by patients was both the source and the consequence of tap water colonisation.

*Journal of Hospital Infection* 2007;67, 72-78
Recent concerns

• Two ICU related outbreaks of *Pseudomonas* in Wales where infra-red taps had been fitted during refurbishments.

• Report from John Hopkins Health System: 50% of water cultures from infra-red taps were positive for *Legionella*, compared with 15% of manual taps. They also had higher counts of other bacteria, but there was no statistically significant different in this case.
Legionella outbreak
Haematology Unit Cardiff

• 31 water outlets tested
• Mainly lever operated conventional taps with thermostatic mixer valves.
• Infra red taps in corridor areas only (5 in total)
• 15 water outlets were positive for Legionella
  • 2 of the infra-red taps were positive.
Two patients identified with multi-resistant *Ps. aeruginosa* – confirmed by typing to be the same.

*Ps.aeruginosa* also isolated from adjacent water supply, but typing confirmed a different type in the water.

Infra-red taps throughout unit

Also problems with shallow hand washing sinks and excessive splashing of water.
Hand Hygiene

• *Ps. aeruginosa* is uncommon on dry healthy hands (Pilsbury *et al* 1950)

• Following appropriate hand hygiene practices with additional alcohol gel post soap and water hand washing eradicates *Ps. aeruginosa* carriage on HCWs hands. (S. Jones *Journal of Infection Prevention* July 2011)
TAP

INTO THE LATEST GUIDANCE!!
American Society for Healthcare Engineering (ASHE) and the Association for Professionals in Infection Control and Epidemiology (APIC) Joint Statement 2011

- APIC and ASHE endorse the use of the Infection Control Risk Assessment (ICRA) to identify and mitigate risks from infection that could occur during design and construction activities. Key element of ICRA is identifying the design and location of hand washing stations. Electronic (sensor-activated) faucets are permitted as they support hands-free operation.

- Several studies have found that manual, hand operated faucets were the source of bacterial infection in patients......This demonstrates there is NO SINGLE DESIGN FEATURE THAT CAN MITIGATE ALL RISK OF CROSS CONTAMINATION.

- Other studies did not find these fixtures to be a source of bacteria. Electronic faucets help with water conservation.......they also lessen risks of recontamination of hands after washing as there is no need to manually turn off the water supply.
In Summary

- Tap colonisation with bacteria is a long standing issue, not only related to infra-red sensor taps.
- Simply removing all infra-red taps will not solve the problem and will cost the NHS in Wales a huge amount of money.
- Effective maintenance and flushing of taps, use of deep sinks and appropriately fitted taps may be a more cost-effective approach.
- Improving hand hygiene practices is also key.
The motion should therefore be Flushed Away!