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## Alcohol-Based Scrubbing: Potential for Savings



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Eliminating water from presurgical hand preparation and instead adopting exclusive use of alcohol-based hand scrub may save modern health care facilities millions in costs and potentially conserve water resources.

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A new study (Javitt et al. 2020) found that at a large ophthalmic surgical hospital adopting waterless scrub technique could result in substantial savings in water usage, supply costs and scrub time.

Alcohol-based surgical scrub is recommended for presurgical antisepsis by leading health organisations, including the WHO. It is used in American hospitals alongside traditional aqueous scrub solutions, which have changed little since the introduction of the practice of preoperative hand antisepsis (scrubbing) in 1847.

In order to calculate the potential financial impact of converting to waterless surgical hand preparation, the authors reviewed accounting records and assessed costs in relation to water consumption and scrub materials for both alcohol-based surgical scrub and water-based presurgical scrub.

The assessment used the standard definition of a preoperative aqueous scrub by the WHO – two minutes of scrubbing with soap and one minute of running water per hand, ie two minutes of continuous water use per scrub. Scrub sinks were found to consume 15.9 l of water per scrub (47.7 l per procedure with an average of three scrubbed personnel), which amounted to 61 631 l and €250 (\$277) in water and sewer cost per operating room per year.

Water savings and resulting environmental benefits associated with the shift to alcohol-based surgical scrub are substantial. Still, the biggest input to cost savings comes from the lower costs of supplies and the savings in chargeable operating room time.

The supply cost of alcohol-based surgical scrub was €976 (\$1,083) less than that of aqueous soap and €244 (\$271) less than that of chlorhexidine gluconate-impregnated scrub brushes per operating room per year. It may potentially save €4,085 (\$4,534) annually per staff member. Adopting waterless scrub technique could also result in decreased scrub time and potential annual savings of between €252 000 and €314 000 (\$280 000 and \$348 000) per operating room depending on the duration of scrubbing.

The authors note that their model has limitations and that flow rates of sinks, cost of water, surgical volumes and scrubbing procedures will vary between institutions. However, adopting waterless scrub techniques has the potential for cost saving in water as well as in supplies and facilities resources. The effect may be more pronounced for surgical facilities performing more personnel-intensive procedures.

## References

Javitt MJ et al. (2020) Association Between Eliminating Water From Surgical Hand Antisepsis at a Large Ophthalmic Surgical Hospital and Cost. *JAMA Ophthalmol.* Published online February 27, 2020. doi: [10.1001/jamaophthalmol.2020.0048](https://doi.org/10.1001/jamaophthalmol.2020.0048)

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