

1989 ASM ANNUAL MEETING
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Official Abstract Form

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Start →	<p>ORGANISM SHEDDING RATE BY PERSONNEL IN OPERATING ROOMS, C.F. Croghan, A.J. Streifel, F.S. Rhame, B.Juni, University of Minnesota, Minneapolis</p> <p>We assessed shedding of microorganisms by operating room (OR) personnel (ORP) by air culture in occupied (O) and unoccupied (U) operating rooms. ORs under positive pressure were supplied with air from a central HEPA filter (99.97% removal of 0.3µ particles) at ~25 air changes/hr. Two min samples were collected on Inhibitory Mold, Mannitol Salt and McConkey agar using a Casella slit impactor (700 l/min). Following 48 hr incubation, plates were evaluated for gram negative bacilli (35°C), total Staphylococci (35°C) and total fungi (25 & 35°C). Organisms were identified by standard methods. The following equation was used to determine ORP shedding rate (S): $S=(C_O-C_U)AV$, where C_O=air microbial concentration in O rooms, and C_U=concentration in U rooms, A=air exchange rate and V=room volume. Sixty-nine samples from 5 ORs were cultured. Shedding rate was calculated from 3 ORs.</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th rowspan="2" style="text-align: left;">ORGANISMS</th> <th colspan="2" style="text-align: center;">MEAN CFU/M³</th> <th rowspan="2" style="text-align: center;">T-TEST P-VALUE</th> <th rowspan="2" style="text-align: center;">SHED RATE CFU/HR</th> </tr> <tr> <th style="text-align: center;">OCCUPIED</th> <th style="text-align: center;">UNOCCUPIED</th> </tr> </thead> <tbody> <tr> <td>total fungi(25°C)</td> <td style="text-align: center;">6.79</td> <td style="text-align: center;">1.64</td> <td style="text-align: center;">0.026</td> <td style="text-align: center;">8268</td> </tr> <tr> <td>total fungi(37°C)</td> <td style="text-align: center;">1.71</td> <td style="text-align: center;">0.38</td> <td style="text-align: center;">0.001</td> <td style="text-align: center;">4295</td> </tr> <tr> <td>gram (-) rods</td> <td style="text-align: center;">0.43</td> <td style="text-align: center;">0.05</td> <td style="text-align: center;">0.019</td> <td style="text-align: center;">1708</td> </tr> <tr> <td>Staphylococci</td> <td style="text-align: center;">37.93</td> <td style="text-align: center;">6.71</td> <td style="text-align: center;">0.001</td> <td style="text-align: center;">8347</td> </tr> </tbody> </table> <p>Because of the high shedding rate of microorganisms by ORP, air change rates are of great importance in the provision of relatively organism free air. When filtration efficiency is reasonable high, the primary determinant of airborne microbial load is the air change rate.</p>	ORGANISMS	MEAN CFU/M ³		T-TEST P-VALUE	SHED RATE CFU/HR	OCCUPIED	UNOCCUPIED	total fungi(25°C)	6.79	1.64	0.026	8268	total fungi(37°C)	1.71	0.38	0.001	4295	gram (-) rods	0.43	0.05	0.019	1708	Staphylococci	37.93	6.71	0.001	8347
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