physicians members who, in fact, do attend meetings regularly and are willing to set aside the necessary time to carry out the “prevalence round” as intended.

Several years’ experience appears to be required for infection control practitioners (ICPs) to develop proficiency at the Florida Consortium for Infection Control; this may well reflect the period necessary for their acquiring facility in skills of time management and networking with other hospital personnel, who act as referral sources of possibly infected patients, as well as for becoming familiar with application of criteria of infection. In a number of instances, it seems that, as a consequence of increasing burdens currently being placed on ICPs, surveillance receives a lower priority, and established accuracy falls concomitantly. Repeated use of recorded criteria as the “gold standard” of surveillance accuracy then serves to distinguish between what the ICPs are capable of doing and what they actually accomplish.

N. Joel Ehrenkranz, MD
James M. Shultz, MS, PhD
Emily Richter, RRA
Florida Consortium for Infection Control
South Miami, Florida

Is Expressed Breast Milk From Home Safe? A Survey From a Neonatal Intensive-Care Unit

To the Editor:

Human milk is the preferred diet for newborn infants. For infants in neonatal intensive-care units (NICUs) whose mothers may have been discharged from the hospital, it may be appropriate to provide fresh or stored raw human milk brought by the mother from home. We carried out a microbiological examination of 139 consecutive samples of expressed breast milk (EBM) brought by home from 24 mothers during a study period of 1 month. Mothers completed a questionnaire for each sample about the various aspects of breast milk expression, collection, storage, and transportation.

Prior to discharge, the nursing staff gave all mothers detailed instructions regarding hygienic practices needed while expressing, storing, and transporting EBM to the hospital. This was reinforced by a printed pamphlet. Sterile, sealed, empty bottles were supplied for collection. On request, sterilized manual breast pumps were supplied.

Using sterile syringes, milk was obtained and sent for culture from each sample brought in. An average of 5.8 samples per mother were studied. Twenty-two of 24 mothers had understood the instructions given in the postnatal ward. One mother expressed milk manually (six samples); the remaining 23 used the pump. The interval between expression of milk and delivering it to the NICU ranged from 1 to 8 hours. Mothers differed in their practices regarding cleaning of breasts, procedures for maintaining hygiene of the pump, and the mode of milk storage (Table 1).

Of the 24 mothers, there was only one (who had supplied two samples) from whose EBM no bacteria were isolated. The remaining 23 (95%) had bacterial growth from at least one of the samples. Twelve mothers (52.2%) had only nonpathogenic bacteria isolated, and 47 EBM samples (34%) from 11 mothers (46%) grew a mixture of nonpathogens and potential pathogens (Table 2).

We found potential pathogens from one third of the breast milk samples sent for qualitative culture. This is a higher prevalence than reported from previous studies.1,2 It is somewhat reassuring that large studies have not found adverse events that could be directly related to ingestion of bacteria in raw breast milk,2,3 nor did we observe any. Routine milk screening programs have not shown any benefit. However, infants in NICUs have low levels of immunity and are easily susceptible to infection, and common sense suggests it is preferable not to feed potentially pathogenic bacteria that could colonize the gut and lead to bacteremia. Pasteurization of breast milk has been practiced in several milk banks, but there is no doubt that it influences and alters the lymphocyte and antibody content of human milk.4

Studies have shown that simple but adequate cleansing of breasts lowers the incidence of contamination.4 In addition, breast pumps could be a potential source of contamination. We recommend that educating mothers in proper techniques of expressing, handling, and transporting breast milk should be emphasized. Expressed breast milk should be stored at 3°C to 4°C if it is to be used
within 48 hours and at 
\(-20^\circ\text{C}\) or lower if it is to be stored for more than 48 hours. Microbiological screening of breast milk for random monitoring or as part of a septic screen in sick infants might be useful.

In environments and specific instances where the expression, handling, and storage of breast milk are found consistently to be of unacceptable standards, using only breast milk expressed under supervision in the NICU may be advisable until the health and hygiene education program is strengthened.

Kumar R. Pejaver, DCH, MRCP
Mustafa A. Toonisi, MBBS, DCH
Anil K. Garg, FRCP
Ibrahim Al Hifzi, CABP, MRCP
NW Armed Forces Hospital
Tabuk, Saudi Arabia

REFERENCES

Brita Water Filters

To the Editor:
I am writing in response to a letter published in your August issue (1995;16:440-441), from Drs. Daschner and Rüden of Germany, that implied that Brita water filters sold in the United States may be contaminated by bacteriological growth, based on tests conducted on German filters. I would like to take this opportunity to set the record straight.

All Brita water filters sold in the United States are bacteriostatic; that is, they are treated to control bacterial growth in the filter. Brita filters are registered with the Environmental Protection Agency, and their bacteriostatic effectiveness has been proven in independent laboratory tests for the EPA. Furthermore, the bacteriostatic effectiveness of Brita filters sold in the United States has been confirmed by NSF International, the nation’s leading certification laboratory for water filtration products. The Brita filter is certified by NSF International under Standard 42 for bacteriostatic effects. Although there are a number of pour-through water filters sold in this country, Brita is the only one that is bacteriostatic.

Moreover, US filters use a different formulation than the German filter cartridge tested by the authors. Therefore, the test conduct-

---

<table>
<thead>
<tr>
<th>Number of samples submitted</th>
<th>139</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breast hygiene</td>
<td></td>
</tr>
<tr>
<td>Cleaned before and after expression</td>
<td>99 (71.2%)</td>
</tr>
<tr>
<td>Cleaned only before expression</td>
<td>29 (20.8%)</td>
</tr>
<tr>
<td>Used soap and water</td>
<td>74 (53.2%)</td>
</tr>
<tr>
<td>Used only water</td>
<td>54 (38.9%)</td>
</tr>
<tr>
<td>Breast pump hygiene*</td>
<td></td>
</tr>
<tr>
<td>Used pump from sterile package</td>
<td>28 (20.1%)</td>
</tr>
<tr>
<td>Pump cleaned and immersed in boiling water</td>
<td>52 (37.4%)</td>
</tr>
<tr>
<td>Cleaned just with soap and water</td>
<td>23 (16.5%)</td>
</tr>
<tr>
<td>Cleaned with water alone</td>
<td>20 (14.5%)</td>
</tr>
<tr>
<td>Storage and transport†</td>
<td></td>
</tr>
<tr>
<td>Samples brought in soon after expression (&lt;45 minutes)</td>
<td>16 (11.5%)</td>
</tr>
<tr>
<td>Samples stored in refrigerator(4°C)</td>
<td>24 (17.3%)</td>
</tr>
<tr>
<td>Samples stored in freezer compartment</td>
<td>60 (43.2%)</td>
</tr>
<tr>
<td>Samples left in room air</td>
<td>25 (18.0%)</td>
</tr>
</tbody>
</table>

* Eleven of the answers were unclear.
† Fourteen of the answers were unclear.

**TABLE 2**
BACTERIOLOGICAL PROFILE OF EXPRESSED BREAST MILK SAMPLES*

<table>
<thead>
<tr>
<th>Organism</th>
<th>Number (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nonpathogenic bacteria</td>
<td></td>
</tr>
<tr>
<td><em>Staphylococcus epidermidis</em></td>
<td>104 (74.8)</td>
</tr>
<tr>
<td><em>Bacillus</em> species</td>
<td>1 (0.7)</td>
</tr>
<tr>
<td><em>Streptococcus viridans</em></td>
<td>3 (2.1)</td>
</tr>
<tr>
<td>Potential pathogens</td>
<td></td>
</tr>
<tr>
<td><em>Escherichia coli</em></td>
<td>1 (0.7)</td>
</tr>
<tr>
<td><em>Enterobacter</em> and <em>Shigella</em></td>
<td>2 (1.4)</td>
</tr>
<tr>
<td><em>Streptococcus pyogenes</em></td>
<td>2 (1.4)</td>
</tr>
<tr>
<td><em>Staphylococcus aureus</em></td>
<td>29 (20.8)</td>
</tr>
<tr>
<td><em>Pseudomonas aeruginosa</em></td>
<td>6 (4.3)</td>
</tr>
<tr>
<td><em>Klebsiella pneumoniae</em></td>
<td>5 (3.5)</td>
</tr>
<tr>
<td><em>Serratia marcescens</em></td>
<td>1 (0.7)</td>
</tr>
<tr>
<td><em>Acinetobacter</em></td>
<td>1 (0.7)</td>
</tr>
</tbody>
</table>

* Two samples did not have any growth; 18 samples grew more than one organism.