neuraminidase inhibitor available for use at home, to use it early (within 24 to 48 h) when they develop any flu-like symptoms, and to seek medical attention from their transplant physician if their symptoms persist.

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Pulmonary Artery Catheterization in the ICU/Critical Care Unit

Indications and Contraindications Remain Objectively Undefined

Pulmonary artery catheterization for ICU/critical care unit diagnosis and treatment is used extensively and intensively.1–4 Reviewed several times in CHEST,1–3 a fundamental problem that will not go away is illustrated by two presentations at CHEST 2000, each of which concluded that randomized trials of the pulmonary artery catheter (PAC) are still needed to refine its indications and safety.4,5 Randomized trials of PACs were originally called for >2 decades ago.6

This vital subject is an excellent example of physicians’ problems—scientific, ethical and behavioral7—with any new diagnostic or therapeutic modality beginning with its initial exhibition. Objective proof of efficacy and safety (a low risk/benefit ratio) is needed before wholesale introduction of anything new; mere technical feasibility and animal studies are never sufficient. For new and altered medications, everyone accepts the prospective, randomized, blinded investigation. Equally high standards have not been applied to instrumental methods, while new generations of physicians increasingly rely on them as clinical bedside skills have atrophied.8,9 (It is probable that some instrumental, especially imaging, modalities may indeed prove superior to many traditional bedside skills; but, sadly, in terms of these skills, we are developing a generation without an umbilical cord).

The case for appropriate studies of the Swan-Ganz PAC has already been made with carefully matched cumulative studies, particularly at the University of Massachusetts2 and University of Virginia.8 In these PAC investigations and in those presented at CHEST 2000,4,5 demonstrations of far poorer net outcomes (mainly greater than expected mortality) ascribed to the PAC strengthens the need, especially in this day of “evidence-based medicine,” for objective trials to determine patients who should and should not have a PAC.

The reasons for the PAC to be investigated thoroughly are not merely those well-known accidents and side effects that are obvious and, mercifully, at a relatively low level for experienced operators. The reasons include the demonstration that indwelling instrumentation of any type changes the recipient physiologically, including responses to circulatory challenges.4 Unlike the overt complications of PAC, these unmeasured physiologic costs are not obvious. Thus, a compelling additional reason for randomized trials is manifest: if the study groups are comparable at baseline, then the investigation will measure not only what is apparent; its outcome should also reflect the unmeasurable “hidden” variables that, by randomization, should equalize among the study groups. On the ethical side, the argument has been made to randomize the first patient,10 which also applies to “pilot” trials and even technical feasibility trials; it may take twice as long to get an answer, but all trial patients should enter
with a "50-50 chance" not to get a new or unproved therapy or diagnostic method.

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