

# Mayo finds many liver transplant patients can avoid costly stay in ICU after surgery

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The liver transplant team at Mayo Clinic in Florida has found, based on 12 years of experience, that more than half of patients receiving a new liver can be "fast-tracked" to return to a surgical ward room following their transplant, bypassing a one- or two-day stay in the Intensive Care Unit (ICU).

In the September issue of the [American Journal of Transplantation](#), the physicians and researchers have turned their knowledge of who can be safely fast-tracked into a scoring system that other transplant centers can also use—thus sparing patients potentially overly aggressive treatment and saving substantial health care dollars.

Mayo Clinic in Florida consistently ranks in the top three nationwide in number of [liver transplants](#) performed. It is the only center that does not routinely send all transplant patients to the ICU.

"To the best of my knowledge, our program has been the only liver transplant program in the United States, and perhaps in the world, with this unique fast-track patient care model consistently practiced," says the study's senior investigator, C. Burçin Taner, M.D., chair of Transplant Surgery at Mayo Clinic, Florida.

"We have been fast-tracking patients after liver transplantation for more than a decade, and our experience has demonstrated that a subset of patients can bypass the ICU after [liver transplantation](#)," he says.

There are distinct advantages in avoiding the ICU when safely possible, Dr. Taner says.

"Keeping a patient on ventilation in the ICU increases the risk of infection, and other complications can arise. Many more tests, such as routine X-rays, are ordered in the ICU, compared to post-transplant care in the surgical ward. So less intensive patient care can be done in those patients who do not need it," he says.

"And avoiding the very expensive care in the ICU helps the patient as well as the health care system. For each patient thousands of dollars can be saved when bypassing the ICU entirely."

When the Mayo Clinic transplant center in Florida began fast-tracking patients in 2002, the clinical decision for each patient was based on assessments made by attending transplant surgeons and anesthesiologists at the time of the liver transplant operation.

To determine the objective variables that mirror such a subjective, although expert, decision, a team of physicians and researchers at Mayo examined 1,296 [liver transplant patients](#) treated at the center between 2002 and 2010. They found that 704 patients (54.3 percent) were successfully fast-tracked, meaning that they were sent to their rooms after approximately two hours spent in the post-anesthesia care unit (PACU), where anesthesia was withdrawn and patients were awoken. In contrast, only 592 (45.7 percent) went to the ICU after briefly staying in PACU.

The nine objective variables that determined patients who bypassed ICU were: being male, of younger age, lower body weight, having a first transplant, a shorter operative time, no time spent in the hospital before transplant, lower MELD score (a biological marker that indicates a patient's sickness), a lower use of blood transfusions, and little use of

medication to increase blood pressure.

Patients who were fast-tracked had better survival compared to patients sent to the ICU. Eight years after transplant, 74 percent of fast-track patients were alive, compared to 65 percent of patients sent to the ICU.

"Patients who receive a liver transplant have end-stage liver disease and are all very sick, so it is very important that we provide the highest quality care," Dr. Taner says. "With detailed analysis of our fast-track practice, we demonstrate that we can tailor the appropriate care according to the individual patient's medical needs.

"In the era of cost-containment, with this tailored approach we can have more control of resource utilization without sacrificing quality of care. Both individual [patients](#) and the [health care](#) system overall benefit from this approach," he says.

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Provided by Mayo Clinic

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