

The Creation of a Geriatric Trauma Unit "G-60"

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Many elderly trauma patients have isolated orthopedic injuries compounded by chronic medical conditions. We organized a trauma unit, led by trauma surgeons, that is designed to expedite the care of geriatric patients through a multidisciplinary approach. The development of G-60, our Geriatric Trauma Unit, began with discussion between trauma surgeons and hospital administration. Dialogue between trauma surgeons and emergency department physicians yielded triaging, disposition, and admission criteria. Orthopedic surgeons helped implement a goal of operative management in 48 hours. Internal medicine assisted in optimizing chronic disease and providing preoperative clearance with involvement of cardiology and anesthesiology. Meetings were held among surgeons, physical therapists, occupational therapists, respiratory therapists, nutritionists, pharmacists, social workers, case managers, internists, a geriatrician, and physical medicine and rehabilitation. A unit in the hospital was chosen, and a paging system was implemented. Six months lapsed from inception to fulfillment. The multidisciplinary team has achieved several improvements in this population. Through a multidisciplinary approach, a geriatric trauma unit was created that expedites triage, optimizes chronic illness to facilitate definitive management, and provides safe discharge.

THE SENIOR POPULATION of the United States continues to increase. As a consequence, trauma centers are seeing a rise in their elderly trauma population. These patients present a challenging clinical problem, as the older trauma patient is unique in age, physiological reserve, and chronic illness. Therefore, caring for the elderly trauma patient can be complex and difficult. Many of these patients have isolated orthopedic injuries compounded by multiple medical problems. This can create a conundrum regarding who will accept overall responsibility for the patients' complete care. In many trauma systems, this sometimes results in a disagreement among the hospitalists, orthopedic surgeons, and trauma surgeons. Due to the effects of aging, the trauma care provided to an older patient should be distinct from the care that younger trauma patients receive to treat similar injuries. This manuscript describes the process that was required to develop a geriatric trauma unit in our Level II trauma center, which we achieved in 6 months of collaboration with physicians, ancillary staff, and hospital administration.

To meet the challenges of treating the geriatric trauma patient, we have organized a geriatric trauma unit designed to expedite the care of this specific population. Our goal for this program was to decrease

morbidity and mortality associated with traumatic injuries for those patients 60 years and older through an aggressive multidisciplinary focused approach. A delay in intervention has been shown to negatively affect the long-term outcomes in elderly patients. Gdalevich and colleagues¹ showed a decreased death rate for older patients who had hip surgery within 48 hours of admission and whose chronic diseases were controlled before surgery. Demetriades et al.²⁻⁴ have published multiple studies showing that elderly trauma patients sustain more serious injuries than younger trauma patients with similar mechanism of injury. These studies suggest that the elderly trauma patient is a unique entity. In our facility the trauma attending now accepts the overall responsibility by admitting these patients and overseeing the multidisciplinary care. To establish this unit, a complete team effort involving physicians, healthcare extenders, and hospital administrators was required. The purpose of this manuscript is to describe the process undertaken to develop a geriatric trauma unit in our Level II trauma facility.

The first step in forming a Geriatric Trauma Program (G-60) at the Methodist Dallas Medical Center was to create awareness within hospital administration about the specific needs of geriatric trauma patients. We initiated the forming of the G-60 program by meeting with hospital administration. In that meeting, we presented our data demonstrating a 4-fold increase in morbidity and mortality when the elderly trauma

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patient is taken to the operating room for surgical (*i.e.*, mostly orthopedic) intervention greater than 48 hours after admission. After our administrators recognized that the elderly trauma patient requires a more aggressive approach to return to functionality, we acquired the approval necessary to start our program.

After obtaining approval and support from the hospital administration to form the geriatric trauma unit, a G-60 Task Force was developed. The Task Force included the trauma surgeons, trauma coordinator, and nursing supervisor. Through multiple meetings, the task force developed a strategy to thoroughly and quickly determine potential roadblocks and provide solutions to avoid delays in creating a functional geriatric trauma unit. In early Task Force meetings, it was recognized that the G-60 trauma unit would require collaboration with the Emergency Department physicians. Their cooperation in triaging these patients in the emergency department and initiating consultation services expeditiously was immediately recognized as a requirement for setting a timely pace for treatment of these patients. As a team, the decision was made to set a standard of admission to the hospital from the emergency department in less than 2 hours.

As most of these patients have both chronic disease and bony injuries, one of our major challenges involved getting the patients to the operating room within 48 hours of admission. This necessitated involving the hospitalists and orthopedic surgeons in providing optimal care. Their input was helpful in elucidating the need for involvement of the Cardiology department and Department of Anesthesia in obtaining our goals of optimization of chronic disease and definitive operative repair expeditiously. This required an agreement between anesthesia and internal medicine regarding the preoperative evaluation. Multiple meetings among the representatives of anesthesiology, cardiology, internal medicine, and the trauma service resulted in the development of a preoperative clearance algorithm to facilitate surgery. The first major step to this algorithm was to obtain old medical records to define a physiologic baseline for each patient. These patients were then accelerated by optimizing their preoperative clearance. Echocardiograms were obtained when deemed necessary, and read immediately by the G-60 cardiology representative. We then identified a team of orthopedic and other subspecialty surgeons to be the primary G-60 surgical consultants. With this collaboration, we were able to provide surgical intervention to these patients in a timely manner.

From this point, multiple meetings were scheduled with a variety of specialties including representatives of physical therapy, occupational therapy, social work, case coordinators, trauma coordinators, respiratory therapy, pharmacy, nutrition, floor nurse supervisors, emergency

department liaison, hospitalists, and the involved trauma physicians. The goal of these meetings was to predict problems and develop solutions to these potential roadblocks to safe, expedient care. Each individual specialty expressed its desire to be a part of our mission and to add input to the plan based on the experience of its members. Each of the representatives was given a specific role in the care of the elderly trauma patient. This helped us obtain a "buy-in" from the subspecialties.

An established area within the hospital was identified as our G-60 unit. Admission criteria were created. The criteria included age greater than 60, injury within 48 hours before seeking medical care, and an injury severity score of 4 or greater. Exclusion criteria included patients with end-stage renal disease requiring dialysis and patients who were under hospice care. The decision was made to admit all of the elderly trauma patients to the trauma surgeon, who would accept overall responsibility. After identifying these patients, a G-60 activation is placed, and all associated personnel are notified via the paging system much like a usual trauma activation. All physicians and healthcare extenders are automatically alerted and immediately involved in the care of the elderly trauma patient. The goal of this program was to expedite the admission of these patients from the emergency room within 2 hours of activation. In addition, all healthcare extenders must evaluate the patient within 2 hours of admission, and the patients requiring surgery should receive definitive operative repair within 48 hours of admission.

After defining and clarifying the roles of each G-60 representative, weekly multidisciplinary rounds run by the G-60 trauma surgeons were implemented. A representative from each discipline (*i.e.*, physical therapy, occupational therapy, pharmacy, social work, etc.) was present for the rounds. These meetings were held every Monday and Thursday.

The process of developing our geriatric trauma unit required approximately 6 months of collaboration and planning. We now have an active geriatric trauma unit, called the G-60 unit, which admits these elderly patients with an acute traumatic injury. The entire multidisciplinary healthcare team has been responsible for improving the care of the elderly trauma patient. We have already seen benefits in the care of this patient population. There has been a decrease in length of stay, time to surgical intervention, and overall morbidity and mortality. Our early data suggest that through a collaborative approach, which initiates an aggressive trauma and medical management, a trend toward improved outcomes is being achieved.

Table 1 compares our data from before the creation of the G-60 unit, which includes data from the year 2008 for all trauma patients greater than the age of 60 requiring a surgical intervention, to 6 months of data

TABLE 1. *Early Data Comparing Elderly Patients Before the Forming of the G-60 Unit and During the First 6 Months of its Existence*

	2008 Data (78 patients)	G-60 Data (150 patients)
Emergency department length of stay (hrs)	7.1	4.0
Hospital length of stay (days)	8.4	5.7
Emergency department to operating room time (hrs)	57.7	34.0
% Morbidity	9.0%	4%
% Mortality	3.7%	3%

from the G-60 unit. There is a decrease within every measured variable from length of stay, time to surgical intervention, and overall morbidity and mortality. Our early data suggest that through a collaborative approach, which initiates aggressive trauma and medical management, a trend toward improved outcomes is being achieved.

In conclusion, the key to the success of the G-60 program is to expedite and facilitate trauma care for

elderly patients from the emergency department through discharge via a multidisciplinary approach with the trauma surgeon accepting the overall responsibility. The G-60 program incorporates measures for the immediate stabilization of chronic illness, to provide the earliest possible surgical intervention and the best outcome. Future studies will be required to refine protocols and procedures that help expedite the care of this increasing elderly trauma population.

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