A Patient-Centered Collaborative Approach to Care

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A driving force behind health care practitioners' transition from being soloists to members of any orchestra is the complexity of modern health care.[1]

Patients with chronic or stalled wounds often present with underlying medical problems that stifle the normal healing cascade. These lesions may be as serious as some cancers. Concomitant comorbidities such as diabetes, peripheral arterial disease and hemodialysis are independent markers for protracted or non-healing scenarios. Once an amputation is required, mortality can be as high as 80% within 5 years. Therefore, these individuals require a holistic, patient-centered approach to diagnosis and treatment utilizing a host of medical specialists that function in tandem within a multidisciplinary milieu.

WHAT IS THE MULTIDISCIPLINARY APPROACH?

In broad strokes, Naylor et al[2] view team-based healthcare as the provision of health services to accomplish shared goals within and across settings to achieve coordinated, high quality care. Although this concept appears straight forward, there are many variations on this theme, which may ultimately cause the clinician to stray from the basic tenets of this approach.

Both Boone[3] and Orchard,[4] for example, opine that a multidisciplinary approach purports that team members need only be aware of and share information with other disciplines; however, these professionals often work sequentially (and independently), utilizing the medical record as the chief means of communication, thus suppressing the universal importance of teamwork. Specialists often function in "silos." Each clinician has a role and often "waits his/her turn" to perform a specific skill set, and direct communication between specialists is often lacking.

WHAT DOES THE EVIDENCE TELL US?

Sadly, this explanation omits the key drivers to multidisciplinarianism: With the increased complexity of health care (i.e. National Guidelines Clearinghouse has over 2,700 Clinical Practice Guidelines (CPGs) and over 25,000 new clinical trials are published per year), **no single person** can absorb and use all this information. This precept leads to an international imperative for improved quality, safety, cost-effective and patient-centered health care. To this end, the Institute of Medicine has proclaimed that all clinicians have an **obligation** to practice team-based health care.

In other research, Maklebust[6] stated that multidisciplinary specialized wound healing concepts integrated into (a) national health care system…would be the ideal way to organize wound healing to best benefit patients and society.

Furthermore, Gottrup hypothesizes that multidisciplinary wound care teams that conduct rounds at the bedside are highly recommended to enhance patient outcomes.[7] Seventeen professional organizations promote guidelines that foster the team approach to wound management.[8] Together, diabetic foot ulcer (DFU) studies included over 3000 subjects, and all reported positive clinical outcomes after wound care team interventions.[9] Sloan et al showed that most centers were based in university or medical center hospitals where grouping of professionals from multiple specialties was more easily accomplished; however, the benefit of a team approach was demonstrated irrespective of setting (i.e."clinics without walls").[10]

A multidisciplinary team approach has also been proven to be the most effective means of providing treatment and preventing foot lesions in the diabetic patient. Both Sumpio et al[11] and Fryberg[12] agree this methodology provides a comprehensive treatment protocol, significantly increases the chances of successful wound healing, and fosters a low rate of recidivism. Cost reduction may be achieved through saving the clinician time, consolidation of services and downstream revenue production.

CAN THIS APPROACH PREVENT AMPUTATION?

The multidisciplinary approach may also decrease amputation rates. In Denmark, for example, this management program integrating vascular intervention and wound care reduced lower extremity amputation (LEA) rates by 75%. Furthermore, Yesil and colleagues decreased major amputation rates from 20.4% to 12.6% with the team approach. Better healing rates may translate to a more efficient use of resources.

The economic benefits could be significant. Research by Vu et al revealed that standardized treatment provided by multidisciplinary wound care teams could lower costs and (even) improve chronic wound healing in nursing homes.

WHAT ARE THE TRENDS IN THE US?

Fortunately, research conducted by an Interprofessional Education Collaborative Expert Panel[16] reveals a trend in the US towards patient-centered, relationship-focused, process-oriented, and outcome-driven care including Interprofessional teamwork and IOM Core Competencies. Unfortunately, multidisciplinary education and practice occur when several disciplines work in parallel, often with independent goals. In contrast, interdisciplinary education may include a variety of disciplines from health and other fields of study that collaborate through joint planning, decision-making, and goal-setting.[16] (Figure 1)

Ultimately medicine, and wound care in particular, could move from a multidisciplinary model to one of the following:

- **TRANSDISCIPLINARY**
  - Traditional practice boundaries become less rigid allowing members of the team to work on problems not typically encountered in their discipline
- **INTERDISCIPLINARY:**
  - A partnership between a team of health professionals and a client in a participatory, collaborative and coordinated approach to shared decision-making around health issues
  - Integrated approach where team members coordinate care and services across disciplines in a process that benefits the patient outcome
  - Team members work collaboratively with regular meetings to discuss patient status and the evolving plan of care. Options for care are greater than individual practitioners working alone.
  - Shared decision-making and flexible leadership characterizes interdisciplinary teamwork. The team has an identity that is separate from the identities of individual team members.

Boon et al, 2004; Orchard, 2005.

Figure 1. Two models of coordinated care

WHY AN INPATIENT LIMB PRESERVATION TEAM?

What's changed recently is not so much the fundamental approach as the speed with which it unfolds. Today, hospitals are launching comprehensive interdisciplinary interventions to prevent amputation that are implemented in hours instead of weeks.

A 2010 article in the *Journal of Vascular Surgery* outlined the basic approach, which includes screening and prevention, wound healing, infection management, and revascularization—and in which the team of diabetic podiatrist and vascular surgeon form the "irreducible minimum."[18] In a study at Madigan Army Medical Center in Tacoma, WA, investigators reported that the implementation of the hospital's Limb Preservation Service resulted in an 82% decrease in lower extremity amputations over five years, from 9.9 to 1.8 per 1000 diabetes patients (actual amputation numbers dropped from 33 to 9, reported from 1999 to 2003). Moreover, this decline took place even as diabetes cases jumped 48%.[19]

In summary, the following quote embodies the holistic approach to medicine in the 21st century:

"The health care we want to provide for the people we serve—*safe, high-quality, accessible, person-centered*—must be a team effort. No single health profession can achieve this goal alone."

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