

Incoming U.S. Casualties: Goals of WRAMC

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Deployment



Goal:

- Provide the highest quality of care to our soldiers, who are willing to put their life in harms way.



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Care: Comprehensive Short Term / Long Term

- Evacuation
- Surgical
- Medical
- Nursing
- Co morbidities
- Therapy
- Psychological
- Social support
- Pain Management
- Nutrition
- Prosthetics
- Education
- Equipment
- Community reintegration
- Vocational rehabilitation
- Return to duty

Highest Quality

- Expert Opinions
 - Education
 - Physician
 - Nursing
 - Therapist
 - Prosthetist
 - Patients
 - Family members
 - Resources
 - Research
- Teamwork
Multidisciplinary
 - Cooperation
Multiple MTFs
 - Partnership
Military ↔ VA

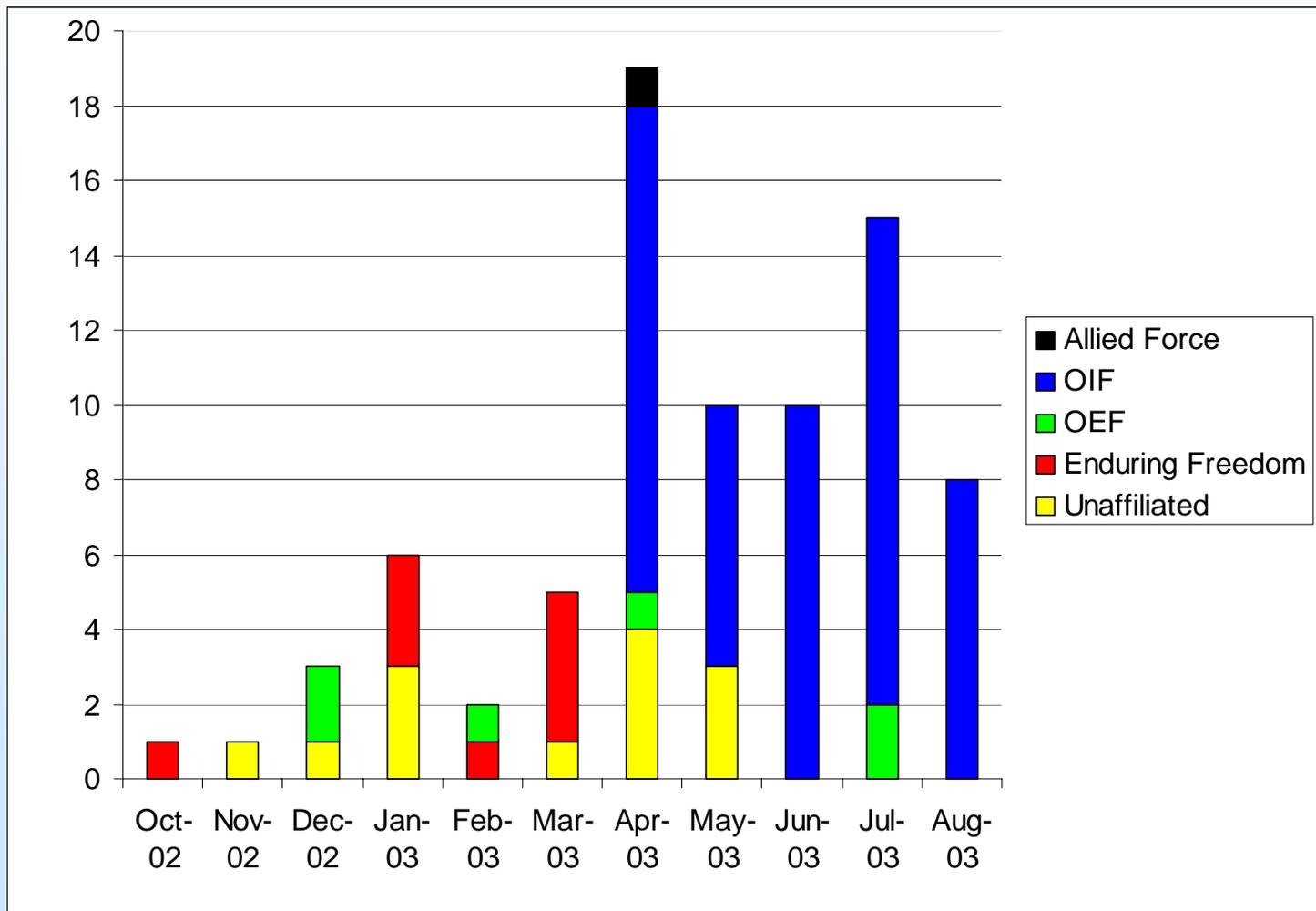
Overview

- Epidemiological aspects
- Health care system
- Unique aspects of combat amputees
- Facility resources available
- Research opportunities/ideas

Total Army Visits 1998-Present

- Total 1,870 unique patients with amputation related diagnosis and/or amputation procedure
- AD Army, Army Temporary Disability Retirement List (TDRL), Army Permanent Disability Retirement List (PDRL)

FY 03 Patients (80)



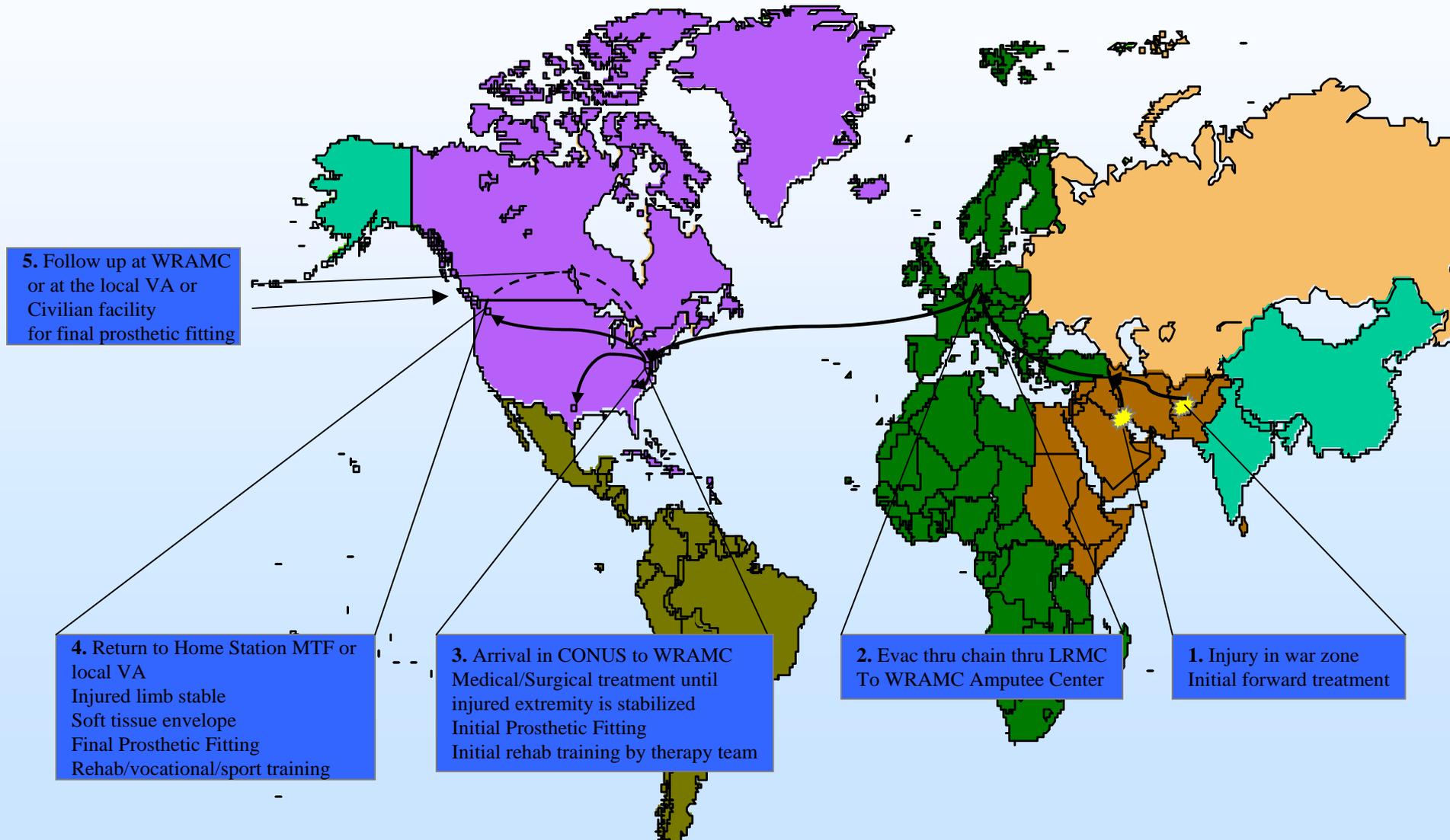
Army: Major limb amputees

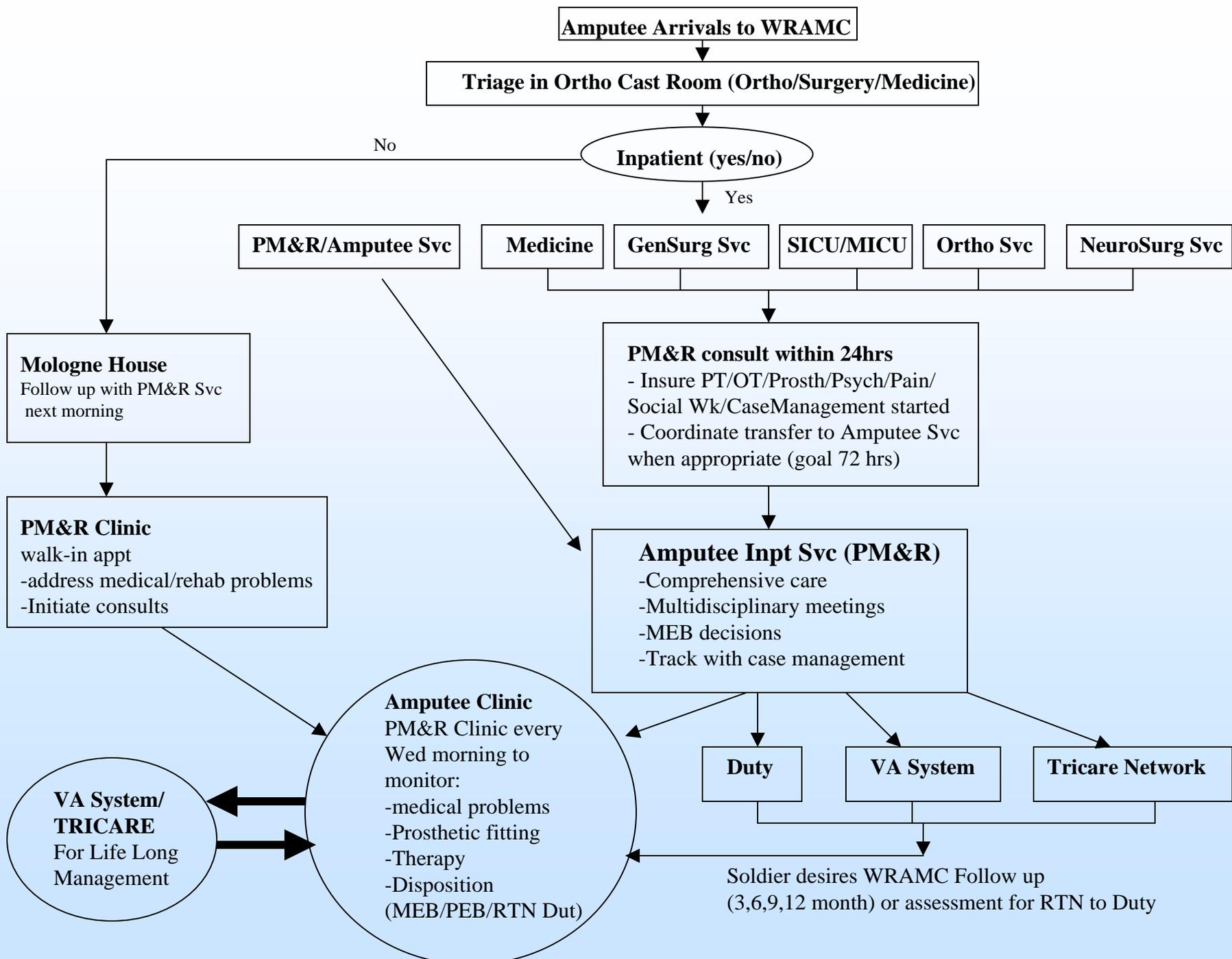
Location of Injury	IRAQ	OEF	TOTAL
AE	8		8
AKA	11	1	12
AKA, BKA, AE	1		1
BE	2	2	4
Bilateral BE	2		2
Bilateral BKA	4	1	5
BKA	12	3	15
Foot	3		3
L BKA; thumb	1		1
Thru Knee	1	1	2
Thumb	3		3
Toe	1		1
Finger(s)	20	5	25
Toe(s) & other injuries	7		7
AE, BE	1		1
Finger(s) & other injuries	9	1	10
Thumb & other injuries	1		1
Bilat BKA & Thru Knee		1	1
AKA & Fingers		1	1
Hand & Wrist	2		2
Grand Total	89	16	105

Average Daily Census WRAMC patients with amputation

- March 5
- April 5
- May 5
- June 2
- July 8
- August 10
- September 9
- October 10
- Current 13

Medical Evacuation





Unique Aspects of Today's Combat Amputee



Advances in Technology

- Forward surgical/resuscitation capabilities
- Advanced evacuation capabilities
- Body Armor
 - Preservation of vital organs
 - Increased extremity injuries
- Advanced surgical techniques
 - Convert injury to clean surgical wound
 - Save as much viable tissue as possible (preserve joints)
- Advances in antibiotic tx



Average Length Of Stay

CSH 1.8 Days

LARMC/ROTA 5.2 Days

CONUS MEDCEN 41.7 Days

*During Viet Nam the average time from Injury to reaching the amputee center at Valley Forge was 4 Weeks

Wartime Amputations: Lessons Learned

- Open circular amputation (OCA) of battlefield casualties at lowest possible length for later revisions
 - Permits wide drainage- no primary closure
 - Prevents infection

Open Circular Amputation

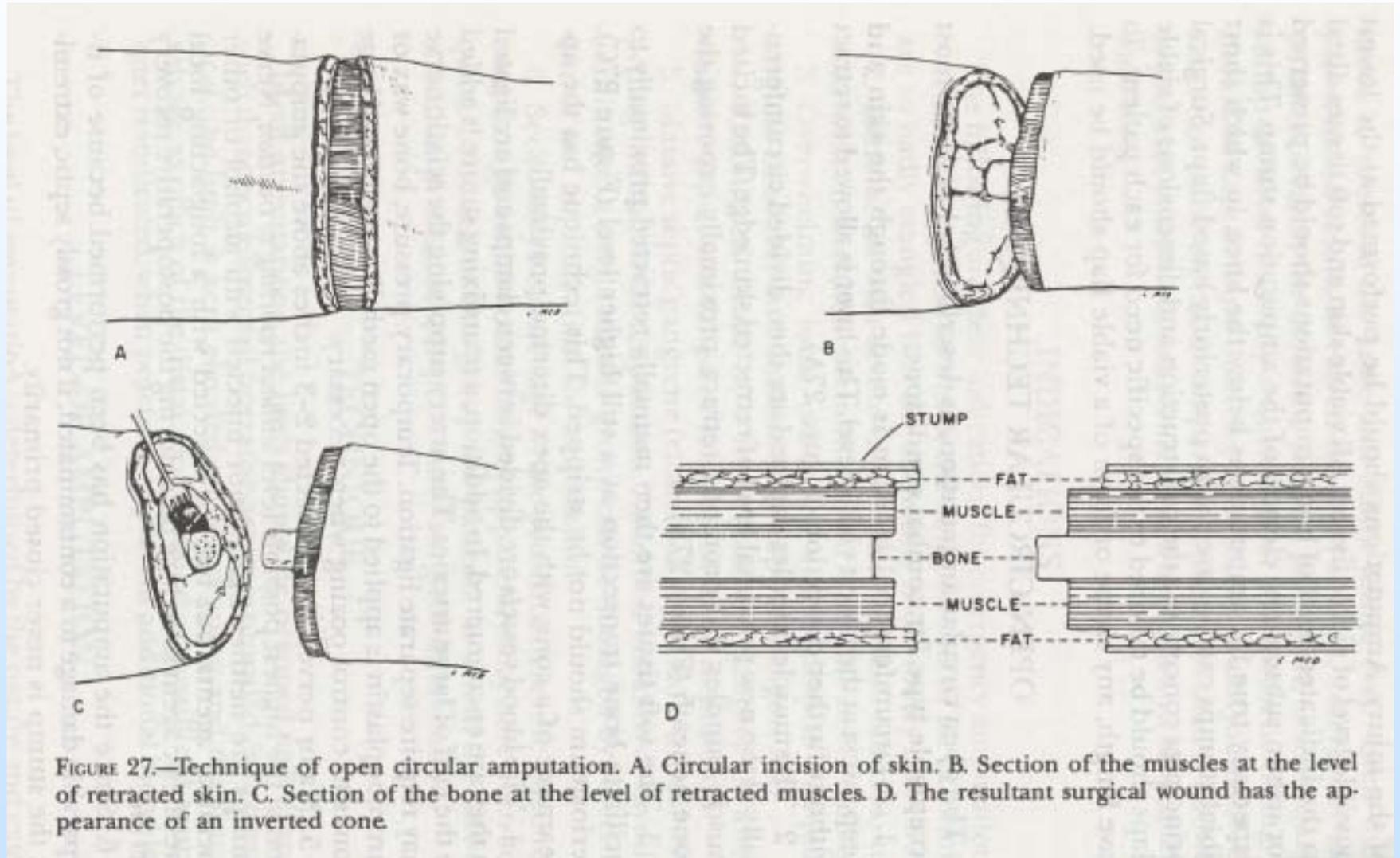
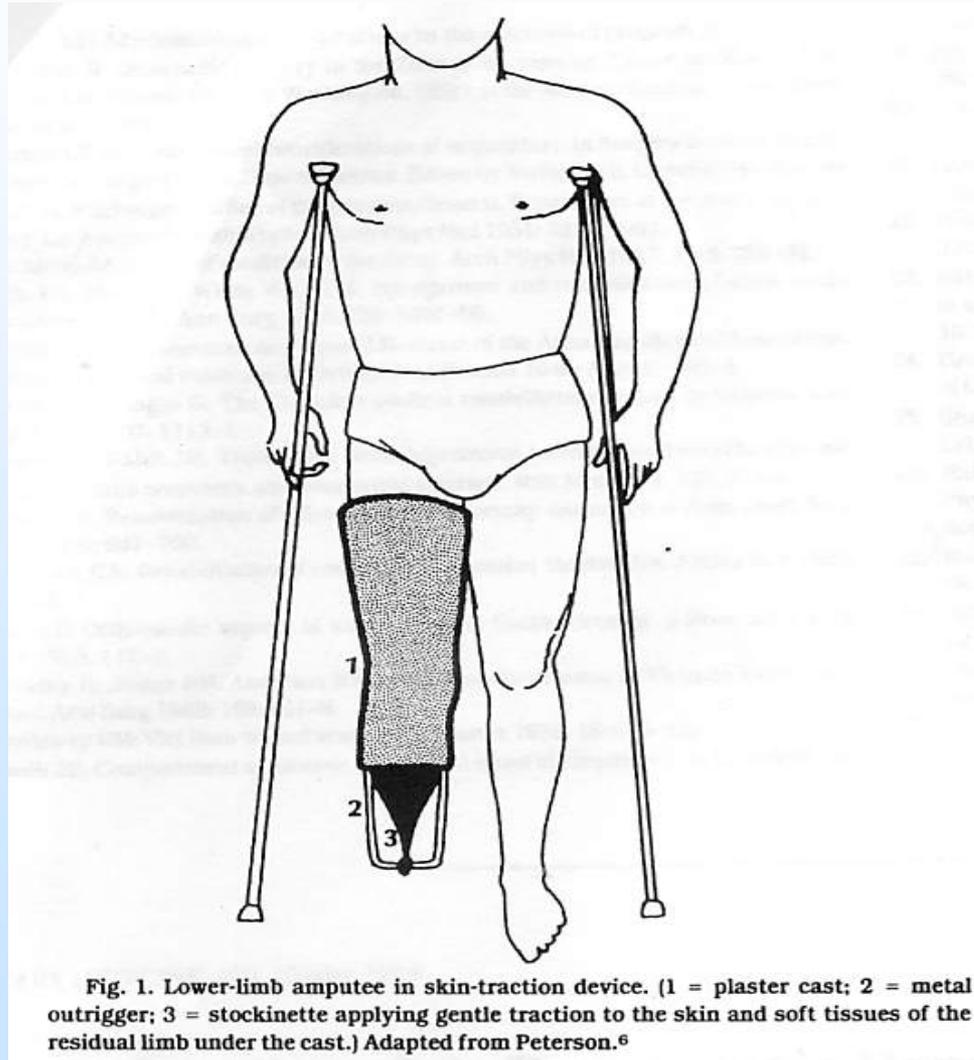


FIGURE 27.—Technique of open circular amputation. A. Circular incision of skin. B. Section of the muscles at the level of retracted skin. C. Section of the bone at the level of retracted muscles. D. The resultant surgical wound has the appearance of an inverted cone.

Skin Traction Device

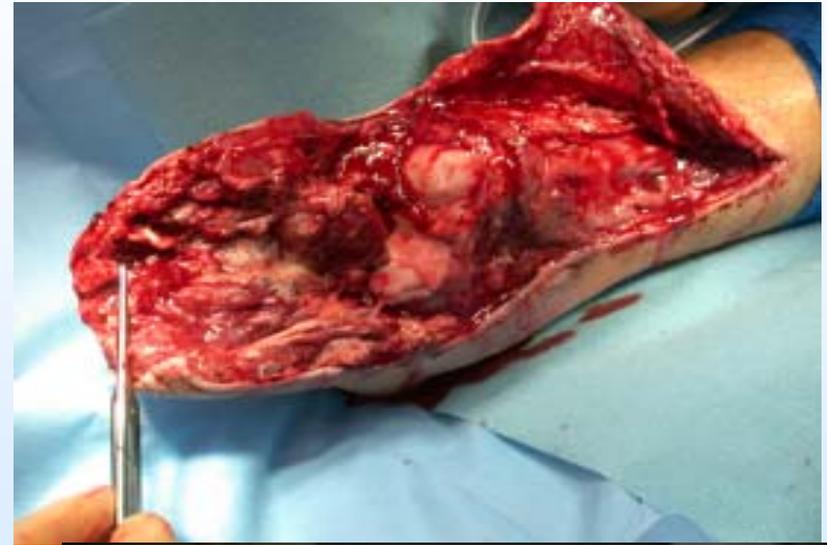


Infections

- Dirty wounds require frequent returns to the OR for washouts as well as revisions.
- Infection Control: all incoming hospitalized wounded swabbed (nares, axilla, and groin) to rule out MRSA
- *Acinetobacter baumannii*, some sensitive and some resistant to abx
- WRAMC experience
 - 37 patients with *Acinetobacter* out of 442 medical evacuees screened
 - Others: 18 with MSSA, 6 with MRSA, 5 with Staph
 - 3 identified cases of nosocomial spread of MDRO *Acinetobacter*

Complex Surgical Problems

- Amputee surgical procedures staged over lengthy evacuation chain at different treatment facilities
- Multiple, complex injuries
 - Multiple amputations, bone fractures
 - Wound healing



Complex Surgical Decision Making



Optimizing Length / Function

- Team decisions
 - Viability of tissue
 - Viability of nerves
 - Progress in therapy
 - Prosthetic options



Complex Rehabilitation Problems

- Co morbidities:
 - Brain Injury
 - Facial Trauma
 - Spinal Cord Injury
 - Peripheral Nerve Injury
 - Fractures
 - Internal Organ Damage
 - Pain Management
 - Poor wound closure



Prosthetic Fitting

- Immediate post-op prosthetic use often not possible:
 - Hemodynamic stability
 - Weight bearing status
 - Wound healing
 - Limb maturation



Vacuum Assisted Closure



Plastic Surgery



Unique Psycho-Social Needs

- Adjustment to loss at young age
 - Limb
 - Other bodily functions
 - Friends
 - Separation from unit
- Duty status
 - AD, NG, Reserves
 - Duty station vs. Home
 - MEB/PEB
 - Perceptions of VA
- Social support system
- Premorbid socio-economic status
- Political beliefs
- Religious beliefs



Unique Pre-morbid Activity Level



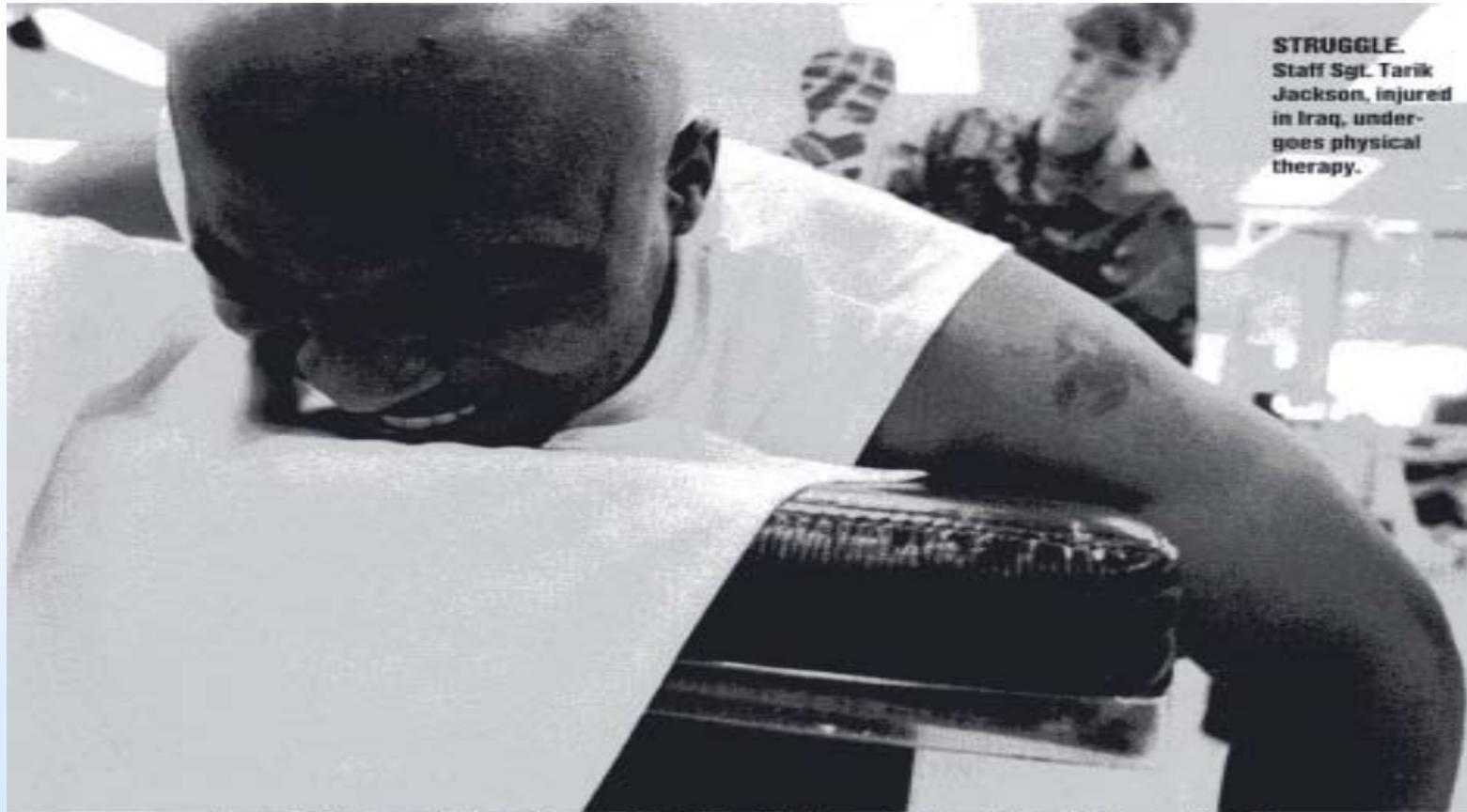
Photo presented to WRAMC from
D. Bowman

Resources Available at WRAMC

- Surgeons
 - All subspecialties
- Physical Medicine & Rehabilitation
- Anesthesia and Pain Management Initiative
- Nursing
- Physical Therapy
- Occupational Therapy
- Prosthetics
- Psychiatric Consultation
- Social Work
- Peer Support
- Dietetics
- Public Affairs Office
- Gait Lab
- Database
- Command Support

“..they cope with grievous combat injuries, mostly unknown in civilian hospitals. The best military hospitals arguably stand shoulder to shoulder with top academic centers in terms of training and research.”





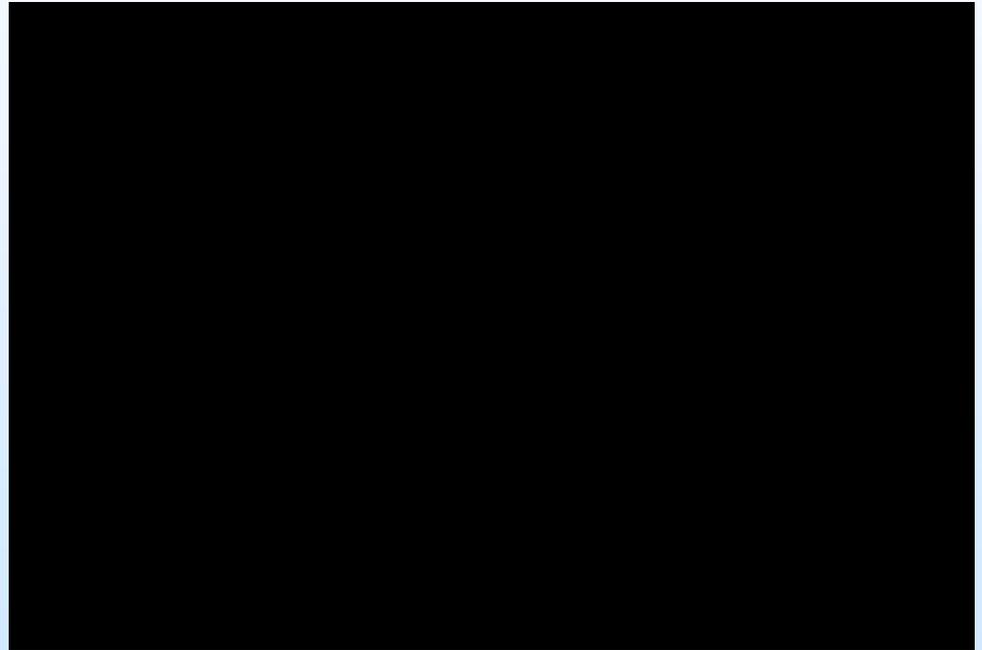
STRUGGLE.
Staff Sgt. Tarik
Jackson, injured
in Iraq, under-
goes physical
therapy.

THE FRONT LINES OF HEALING

When injured soldiers come home, Walter
Reed hospital helps them get their lives back

Physical Therapy

- Prosthetic
Donning/Doffing
- Basic Mobility Skills
- Strength Training
- Gait Training
- Balance Training
- Co morbidity Rehab
- Advanced Skill Training



Advanced Activities



Return to Duty

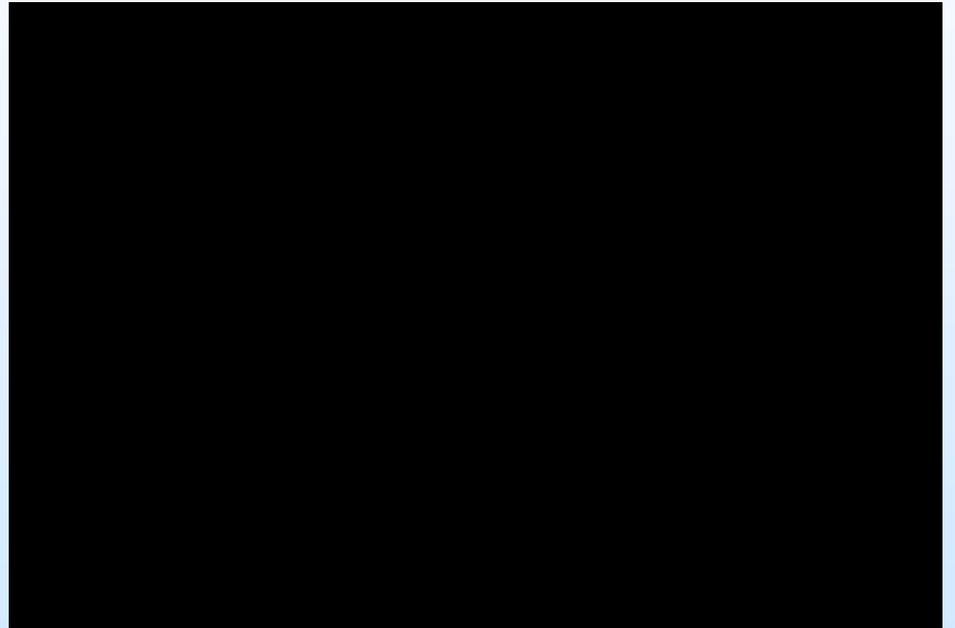
Occupational Therapy

- Prosthetic
Donning/Doffing
- Myoelectric training
 - Myoboy
- Gross motor skills
- Fine motor skills
- Activities of Daily Living
- Community Reintegration



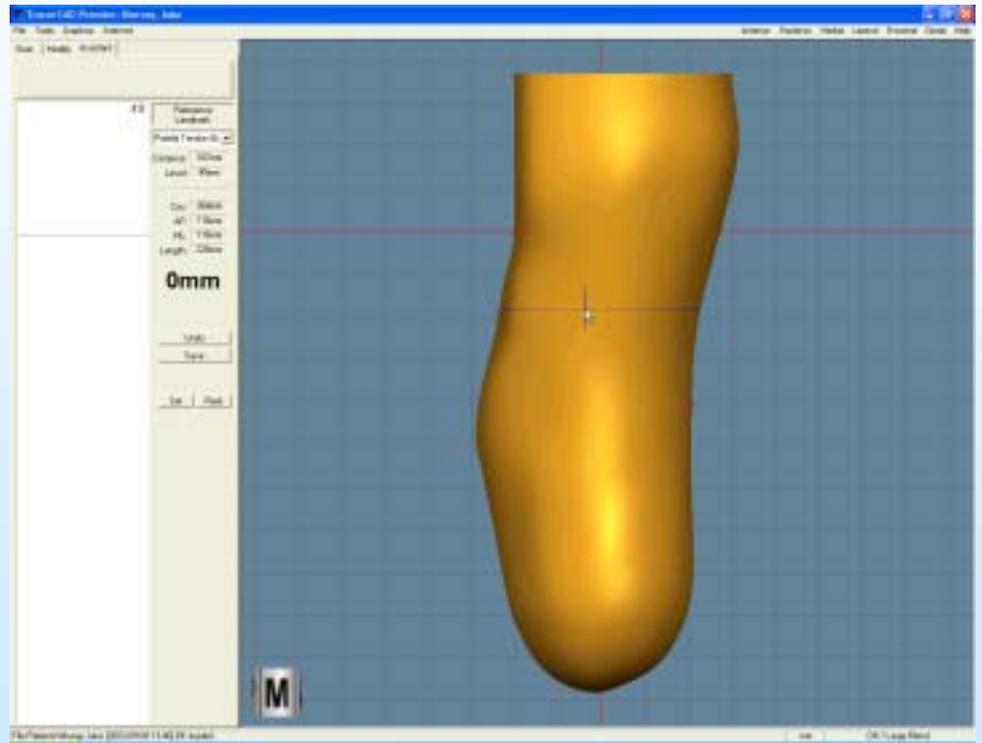
Apartment

- Kitchen
- Bedroom
- Laundry
- Office



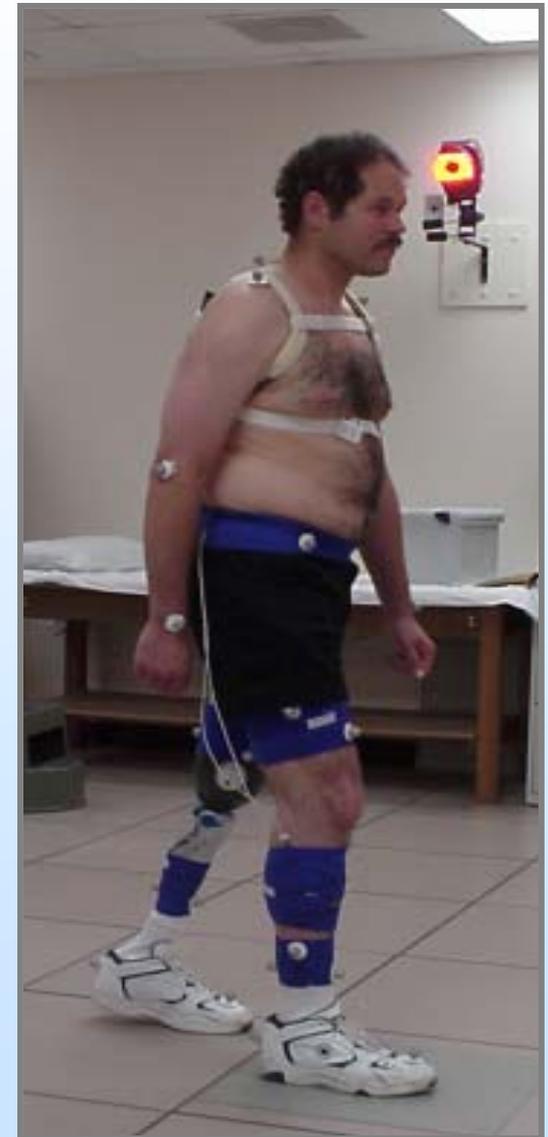
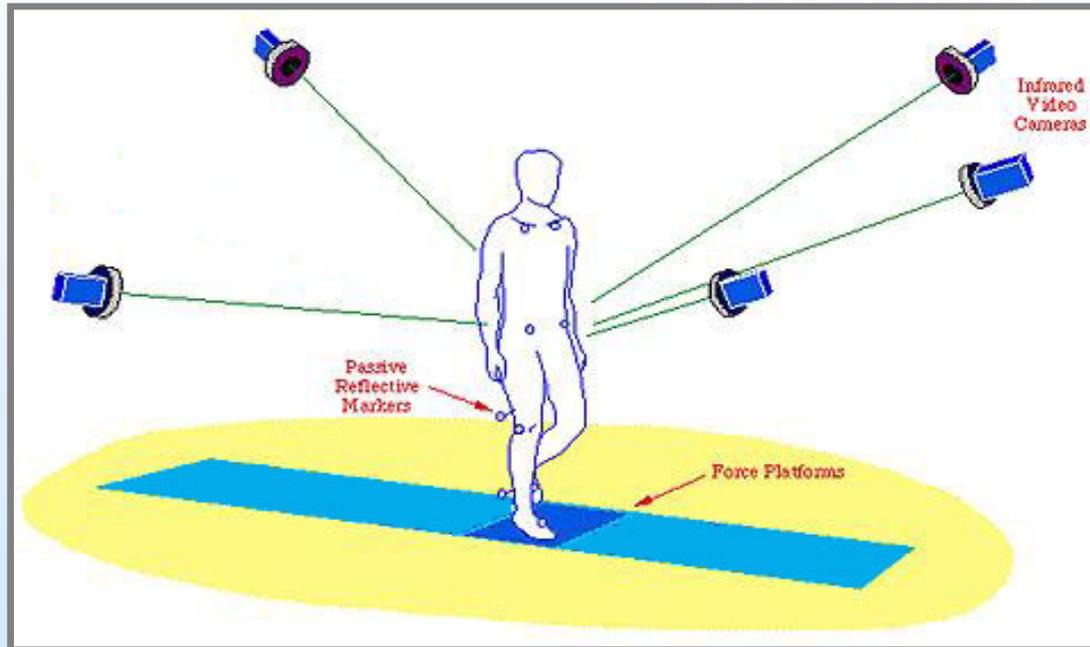
Prosthetic Fitting

- Pre-Surgical Consultation
- Leading Edge Technology
- CAD/CAM
- Meet functional goals



GAIT LAB

U.S. Army Amputee Program



Research Opportunities

- Surgical techniques
- Infection rates
- Pain management
 - Stump pain
 - Phantom Pain
- Wound management
- Role of telemedicine



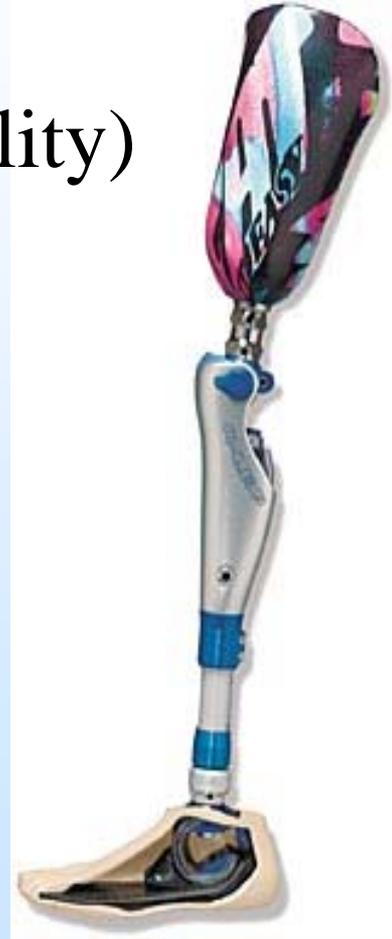
Research Opportunities

- Psycho-social
 - Rapid community reintegration
 - PTSD
- Therapy Techniques
- Prosthetic Technical Advances
 - New components
 - Meet demands for return to duty
 - Develop guidelines for prosthetic prescriptions



Research Opportunities

- Develop Clinical Pathways
- Outcomes Measures (validity/reliability)
 - Mobility
 - Functional
 - Quality of Life
 - Advanced Activities
 - Gait Parameters
- Long-term Studies
 - Prevention of OA (knee, hip, shoulder)
 - Back Pain
 - Cardiac (O₂ consumption)



The Washington Post

MONDAY, JULY 21, 2003

Moving Forward, One Step at a Time

After Iraq, Wounded Soldiers Try Out New Limbs, New Lives

Second of two articles

By TAMARA JONES and ANNE HULL
Washington Post Staff Writers

A fat C-141 rumbles to a halt at Andrews Air Force Base. A gangplank is lowered from the belly of the plane, and the Army's latest casualties from Iraq hobble or are carried to a waiting white bus, their gear still covered with fine desert dust.

These medevac flights are now so routine that no cameras, no VIPs, await the wounded. Their welcome home happens at Walter Reed Army Medical Center, the nation's biggest military hospital, where doctors and nurses in camouflage fatigues wait at the curb to whisk the newest patients to the large exam room on the second floor. Here the soldiers are triaged with swift precision:

"I need 10 of morphine!" a doctor calls out.

"Are you weak in your right hand?" another asks.

"Where does it hurt you now?"

A 20-year-old private moans. In Baghdad, he camped out in a bathroom of Saddam Hussein's palace, stacking his Chips Ahoy on the shelves above the gold-tinged faucets. Now he lies on a gurney with shrapnel in his belly, beneath a balloon that says, "You're the Best!"

Upstairs on the orthopedics ward, the beds



BY MICHAEL LUTZKY—THE WASHINGTON POST

Healing: Tyson Matthews pulls up Garth Stewart's pants leg for Jason Neale and Bobby Bullard to get a better look at his new leg.

are already filled with recovering casualties from the war in Iraq. There are different battles being fought on Ward 57, more private struggles. It's not about victory, but coping. Not about war, but its aftermath.

First Lt. John Fernandez is a veteran of Iraq and by now a veteran of Ward 57, too. He reports to an exam room early one morning for his twice-daily dressing change. The former

West Point athlete is 25, a newlywed whose wife, Kristi, hasn't left his side since he arrived at Walter Reed six weeks earlier. They had been married less than a month when John shipped out. His hospital room would become their first home together; the nurses looked the other way when Kristi, 22, moved a cot next to John's bed

See WALTER REED, A10. Col. 1