

21st Century Burn Care

The past, the present, and the future of telemedicine

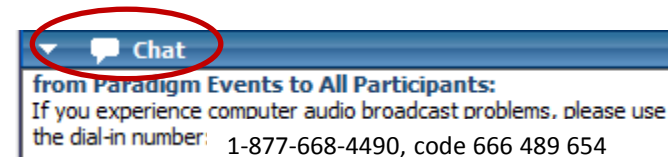
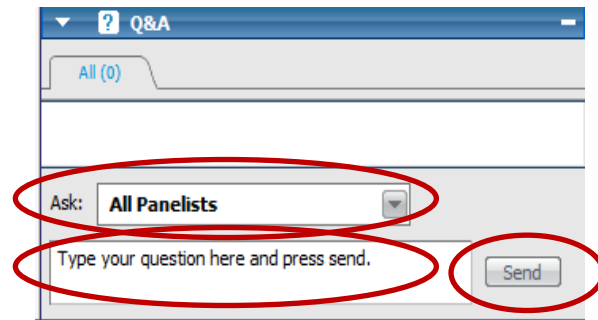


Jeffrey Saffle, MD, FACS Professor Emeritus of Surgery, University of Utah

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First, a Few Housekeeping Points

- Slides will advance automatically
- Question and Answer period at end
- You may submit questions at any time
 - Q&A panel is on the lower right side (If you don't see it, click the "Q&A" button in the upper right)
 - Type a question into the lower section of the Q&A panel that appears
 - Ask "All Panelists" and click "Send"
- A link to the presentation was emailed to all registered participants this morning; a copy of the replay will also be emailed
- When the webinar ends, a short survey will pop up; you must take the survey to receive CCMC credit
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What is Telemedicine?

Telemedicine is the use of medical information exchanged from one site to another via electronic communications to improve a patient's clinical health status.

- Telemedicine first started over forty years ago
- May involve two-way video, email, smart phones, wireless tools and other forms of telecommunications technology
- Telemedicine is not a separate medical specialty
- Telemedicine reimbursement fee structures are the same as services provided on site

Telemedicine is Used Everywhere

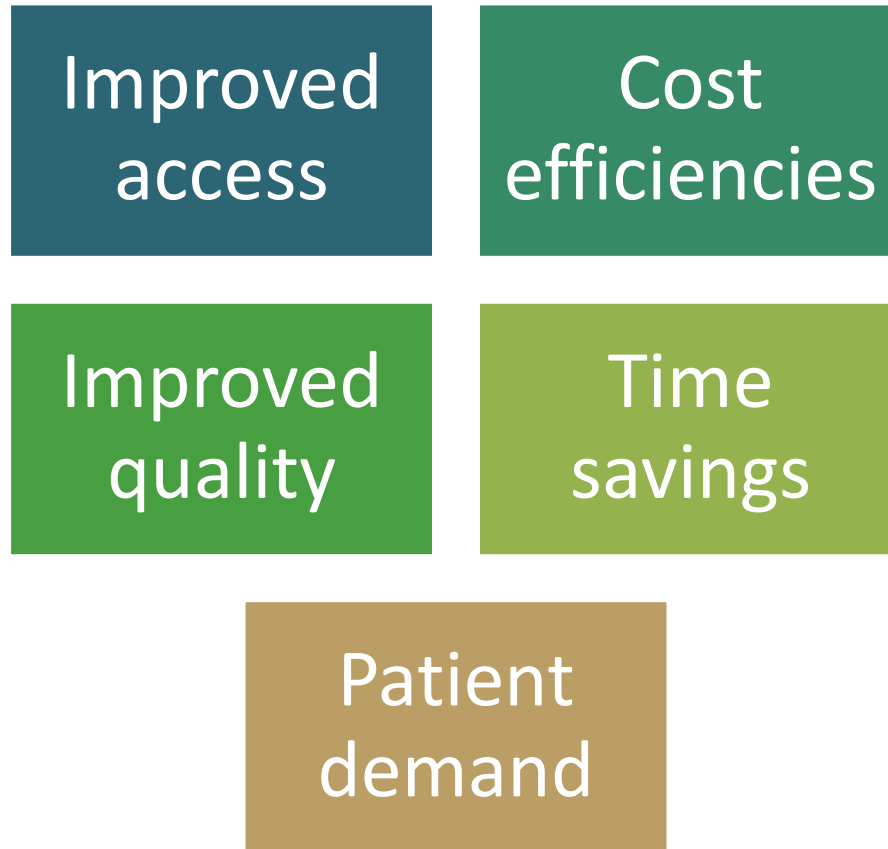
- Pubmed search yielded more than 14,000 citations
- Now mainstream/SOC in radiology
- Almost every imaginable specialty: Plastic surgery, Dermatology, General Surgery, Cardiology, Neurology, Ophthalmology, Pediatrics
- Stroke and psychiatry are two great successes
- Used to provide remote care all over the world: climbers on Everest, astronauts in space, ships at sea
- Widely used by the military in recent actions

What Services Can Be Provided By Telemedicine?

- Primary care and specialist services
- Remote patient monitoring
- Consumer medical and health information
- Medical education



Benefits of Telemedicine



Our Presenter



Jeffrey Saffle, MD, FACS

- Past president of the American Burn Association
- Past director of the Department of Telemedicine at the University of Utah Health Center
- Chairman of the American Burn Association's Multicenter Trials Group
- Board certified in general surgery and surgical critical care

Pearl Harbor, 1941



Burns already recognized as a major new problem in warfare (Blitz in England)

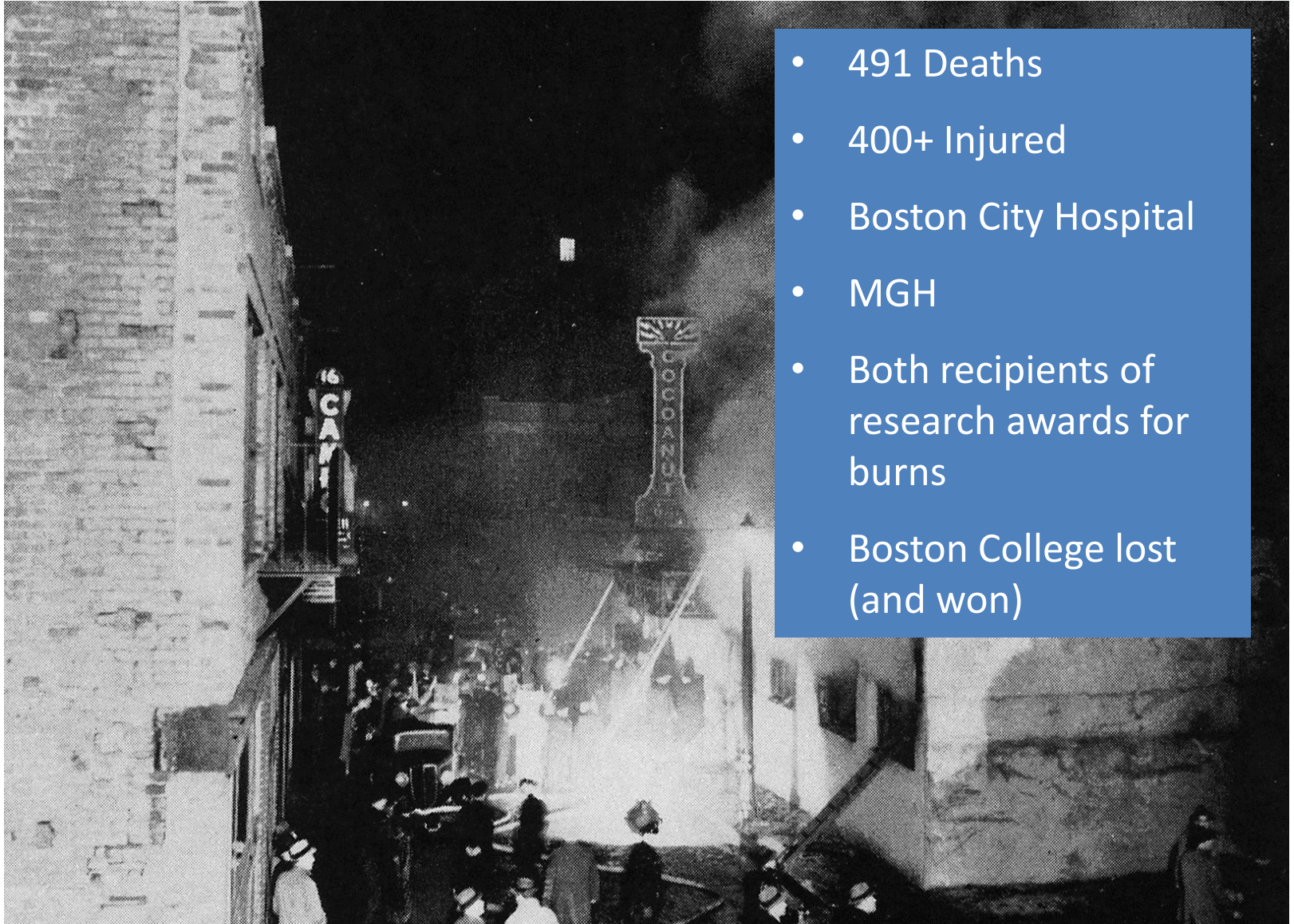
2,402 deaths*

1,282 wounded

60% of casualties were burns

*2,752 World Trade Center, 2001

Cocoanut Grove Fire, Boston, 1942



- 491 Deaths
- 400+ Injured
- Boston City Hospital
- MGH
- Both recipients of research awards for burns
- Boston College lost (and won)



First US Burn Unit

First Protocolized Fluid Resuscitation

Use of Antibiotics

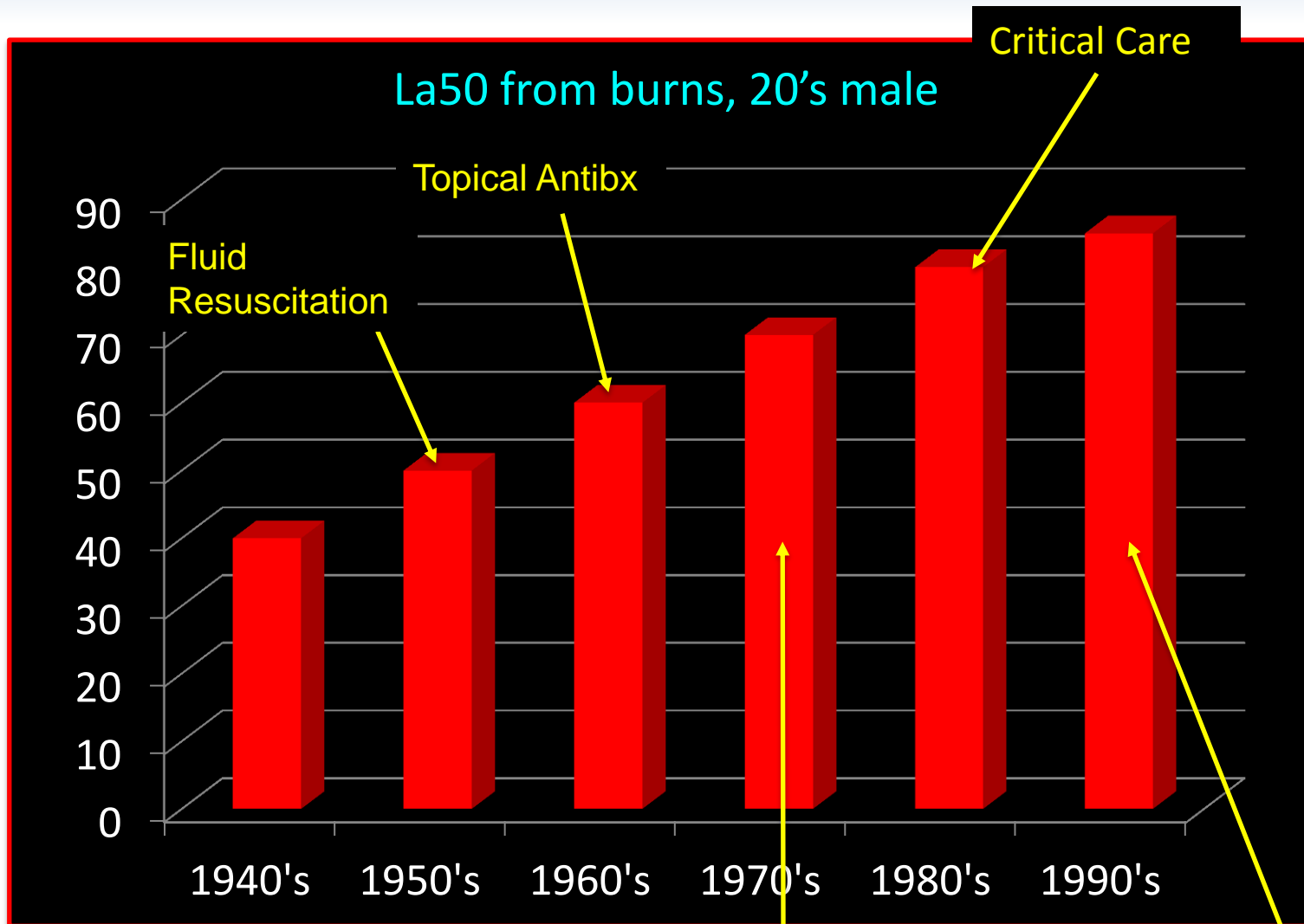
One of the first definitions of PTSD

Fire Safety



First real Definition of Inhalation Injury

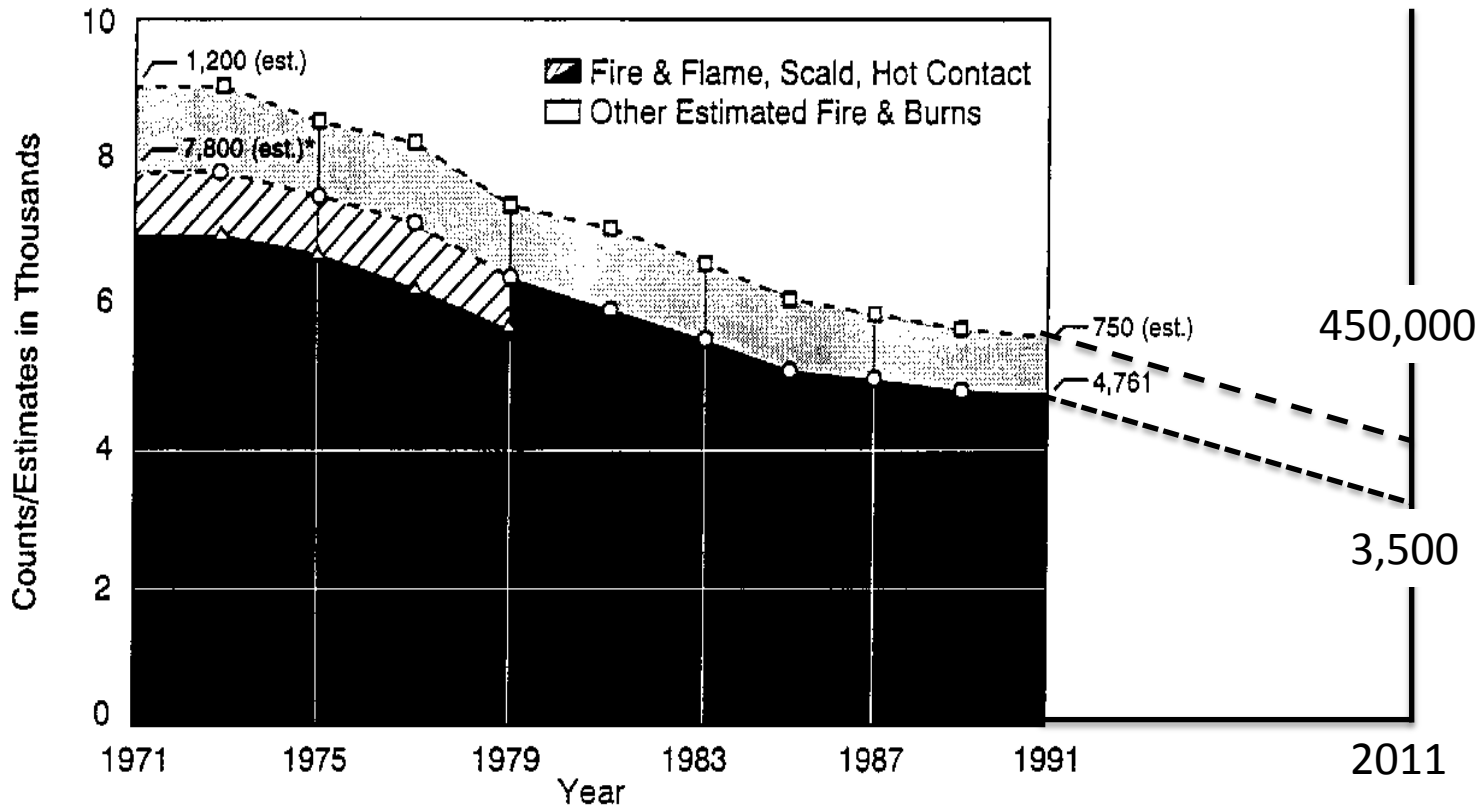
Innovative Wound Care (Boric Acid)



Decreasing Incidence of Burn Injury in the United States

10 burns/10,000 people

4.2 burns/10,000 people



* Data on fire, flame and scald/hot contact deaths by suicide, assault and undetermined intent unavailable until adoption of ICD-9 codes in 1979.

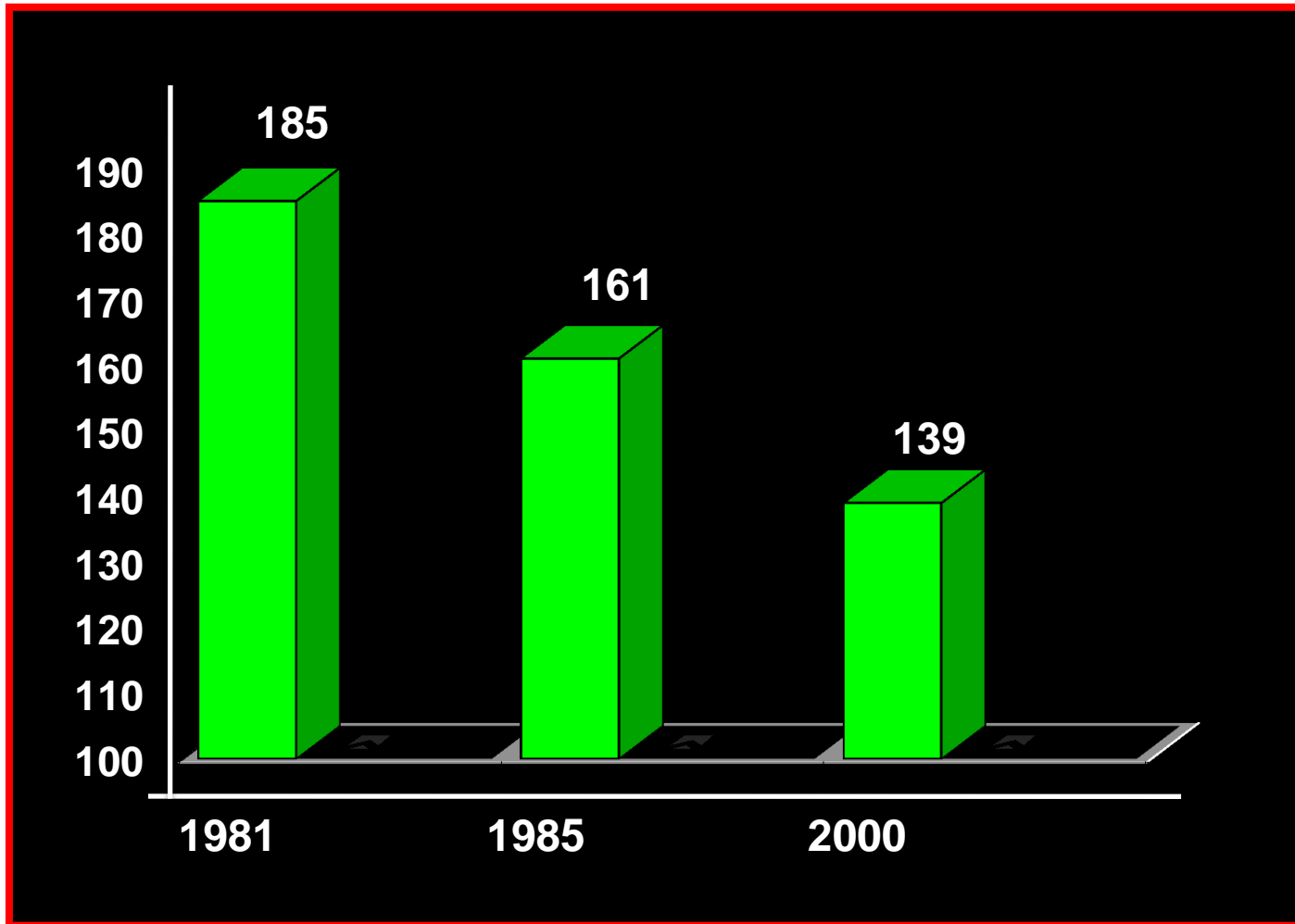
-- Brigham and McLoughlin, J Burn Care Rehabil, 1996;17:95

-- Burn Incidence Fact Sheet, American Burn Association

Even Though Burn Incidence Has Decreased...

- U.S. still has the highest incidence of fire deaths in the industrialized world. Utah and Idaho rank in the lowest quartile of fire deaths annually (< 11 per million); Montana in the third highest quartile (17-25 deaths per million).
- Rural populations are twice as likely to die from fires as urban populations.
- Native American children 2.8 times more likely to die from fires than white children.
- Geography and population density still limit access to many forms of specialized health care in the Western US.

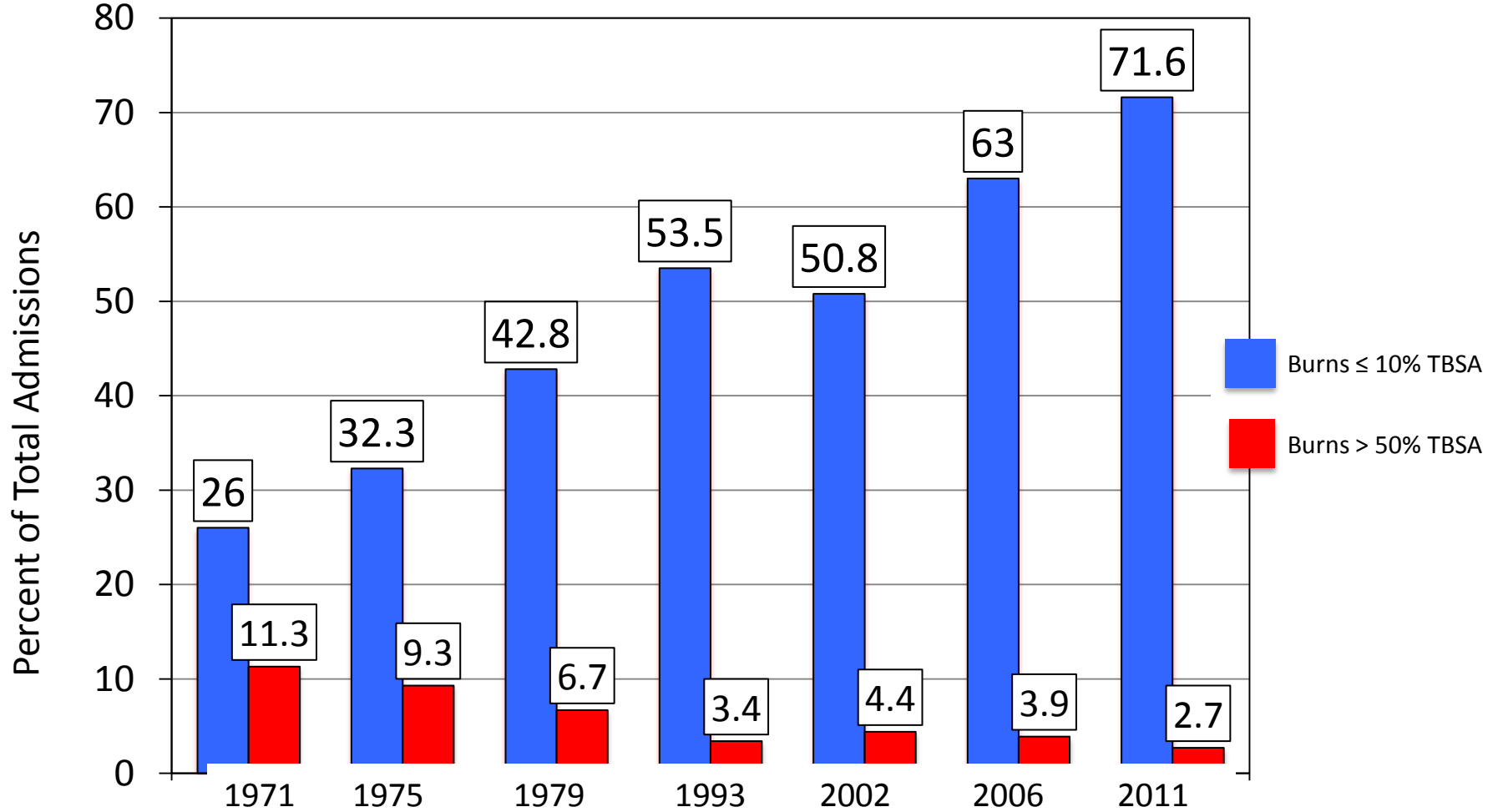
Burn Centers in North America



25% Fewer Burn Centers in US/Canada in past 20 years!

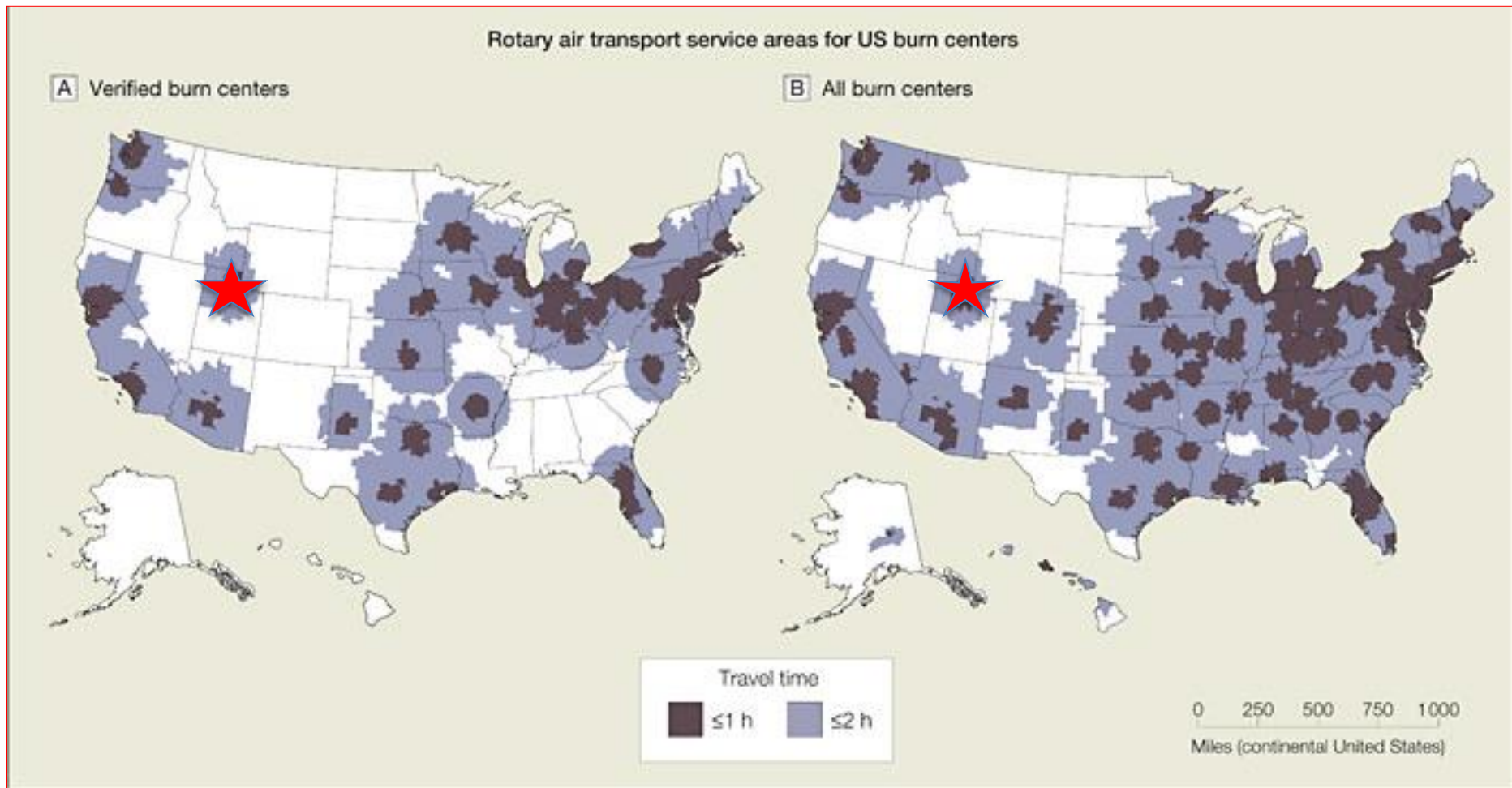
-- ABA Directory of Burn Care Resources

Changing Size of Admissions to US Burn Centers



1. Feller et al, National Burn Information Exchange
2. JBCR 1995;16:219 (n=6,400)
3. National Burn Repository, 2011; n > 140,000

Rotary Air Transport Service Areas for U.S. Burn Centers



-- Klein, M. B. et al. JAMA 2009;302:1774-1781.

The Challenge Ahead: Rehabilitation

1. Almost everyone survives.
2. The survival of bigger burns creates unprecedented challenges in recovery, while small burns *expect* perfect results!
3. Outcomes are surprisingly good “if” patients can get comprehensive rehab which is:
 - A. Prolonged
 - B. Expensive
 - C. Available in only a few centers
 - D. Largely ignored/*avoided* by insurers.
4. This is– and will remain– our biggest problem.

Who Will Follow Us?

1. The paucity of burn surgeons in the US is reaching dangerous levels.
2. Seen against more global trends:
 - A. Shortage of all physicians: estimated to reach 200,000 by 2020, due (partly) to reductions in enrollment by balanced budget amendment. Reversal recommended in 2006, but largely ignored.
 - B. Aging/retirement of the US Physician workforce.
 - C. Shortage of General surgeons: Estimated 21,500 general surgeons in US, but 6,000 do little or no surgery. Need 1,850 surgeons/year. Annual training is 1,000 surgeons per year since 1980, of whom 50-100 never practice.
 - D. Growth of the US population (25,000,000/10 years).
 - E. Acute shortage of surgical specialists driven by competitive remuneration, call schedules (lifestyle), Baby Boomers vs. Generation X.

Telemedicine in Acute Burn Care: A Case Study

Patient One:

- Called by an ER physician from a remote small town
- 60 year-old man burned fighting a garage fire: face, scalp, hands
- Estimated 15% TBSA
- Facial burns “extensive”; considered intubation
- Transported to Salt Lake City

Patient One



My estimate: 3.5% TBSA

Patient One: Hospital Course

1. Dressed within 10 minutes
2. 48 hours in hospital waiting for his family to come get him
3. Charges (2005):

Hospital: \$4,784

Surgeon (me): \$166

Air Transport: \$13,924

- Now: \$24,000

Patient Two

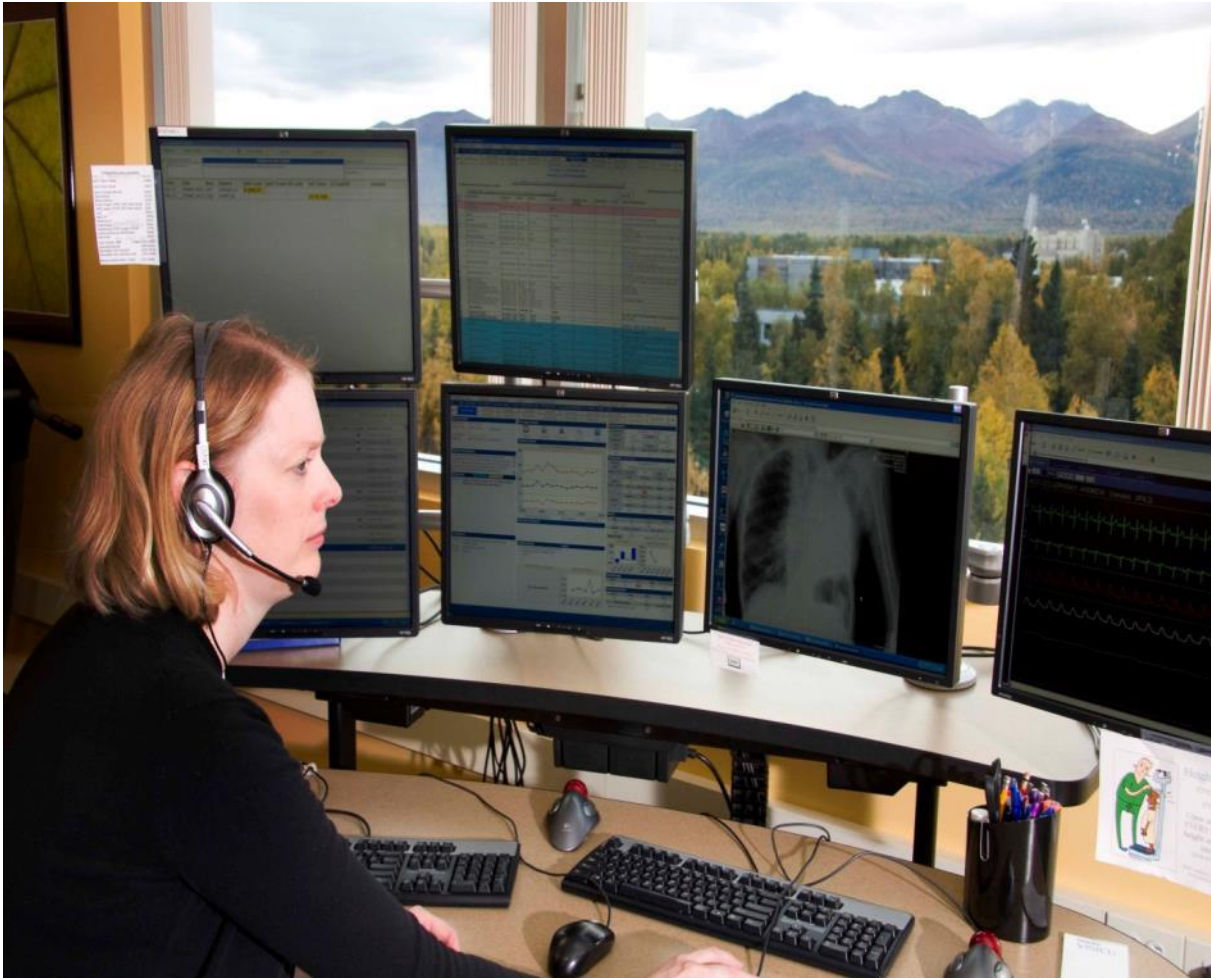
1. Called by an ER physician from a remote small town.
2. 60 year-old man burned priming a carburetor.
3. Burns “all over” face; should he intubate?
4. Took a photo with his cell phone and sent it to me.



Terms to Remember

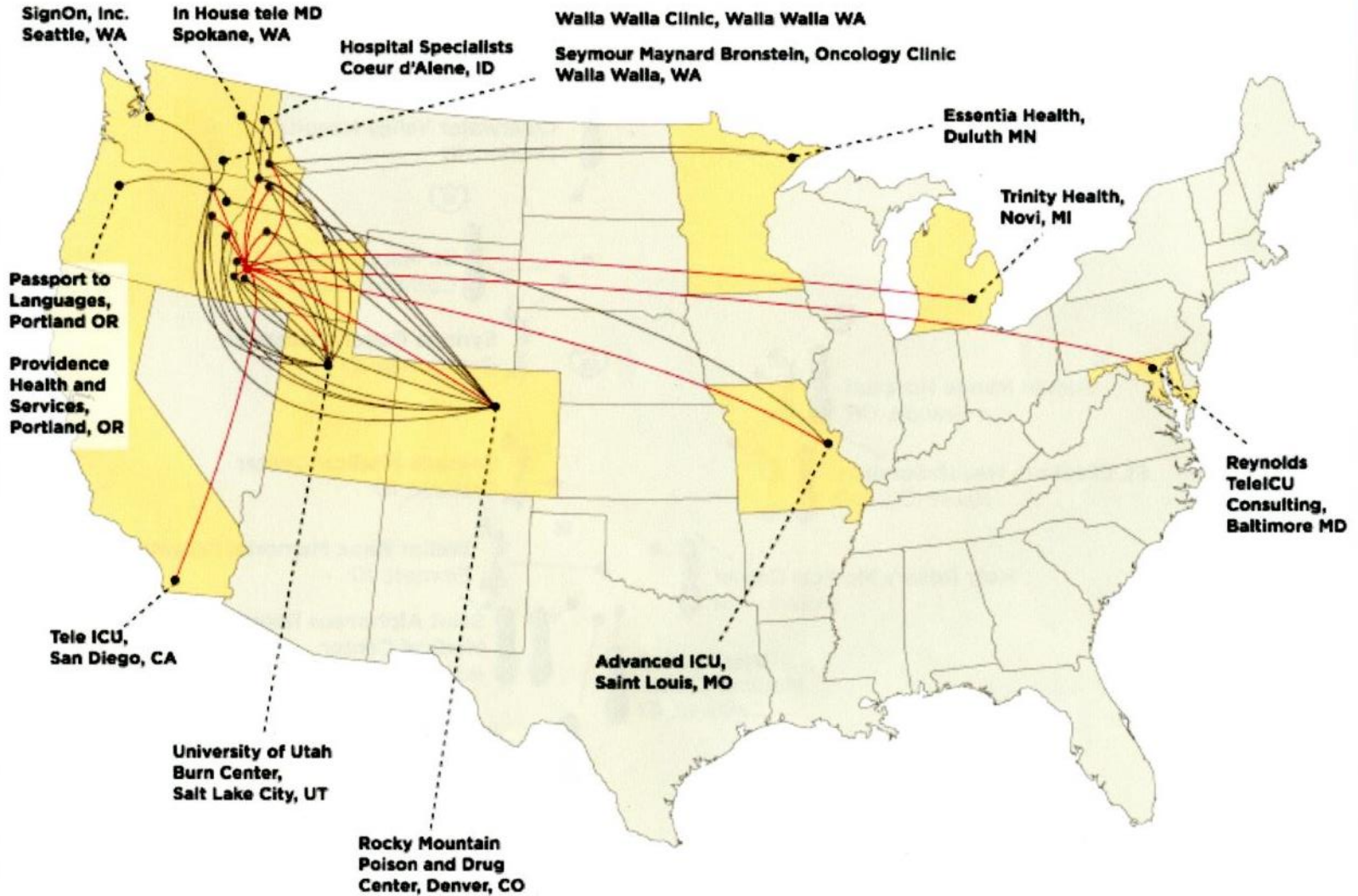
- Telemedicine: the use of medical information exchanged from one site to another via electronic communications to provide patient care.
- Telehealth: a broader definition of remote healthcare that does not always involve clinical services. Videoconferencing, transmission of still images, e-health including patient portals, remote monitoring of vital signs, continuing medical education and nursing call centers are all considered part of telehealth.
- mHealth:
 - The practice of medical and public health, supported by mobile devices.
 - The term is most commonly used in reference to using mobile communication devices (such as mobile phones and PDAs) for health services and information.

24 x 7 Proactive Care

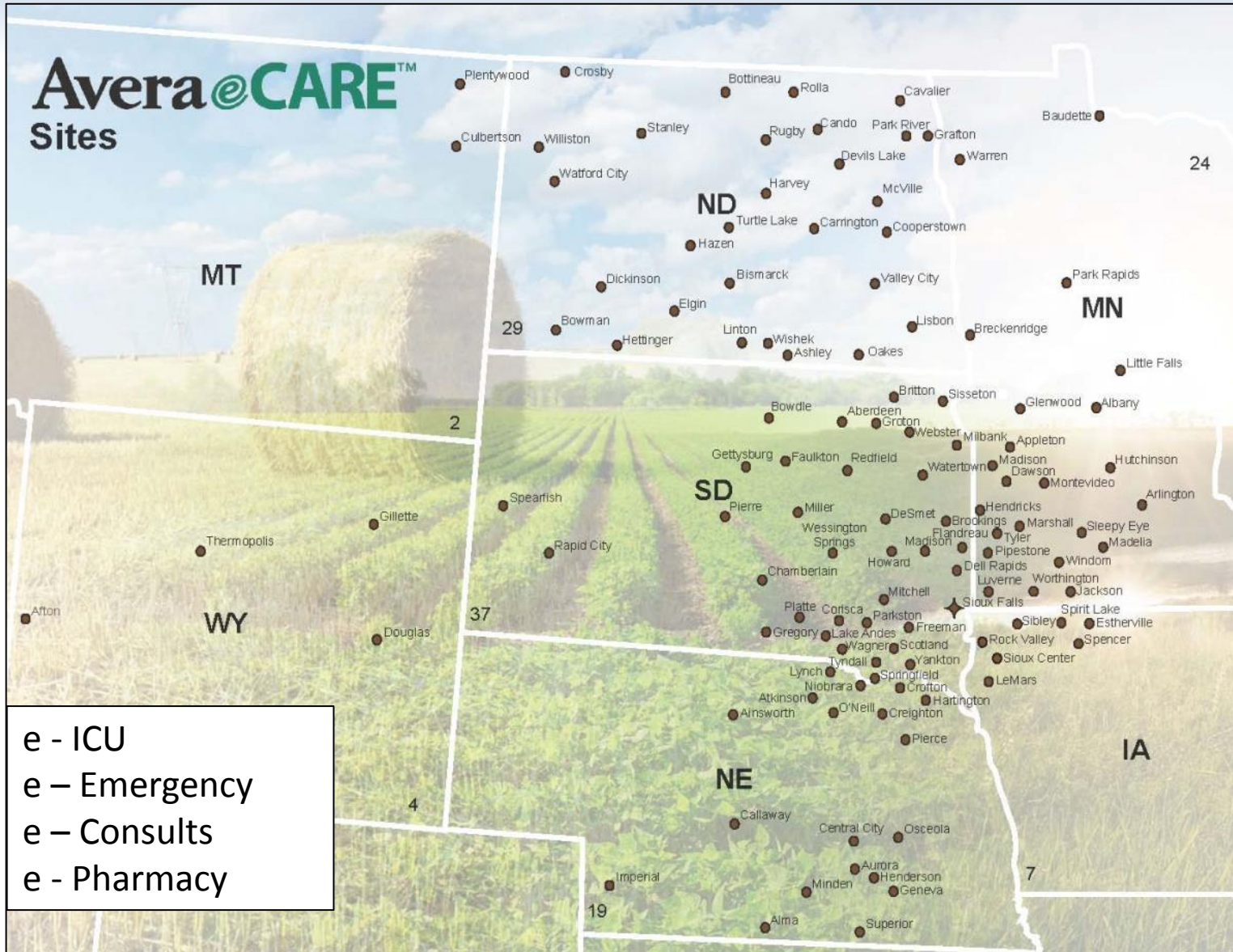




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Telemedicine and Workers' Compensation

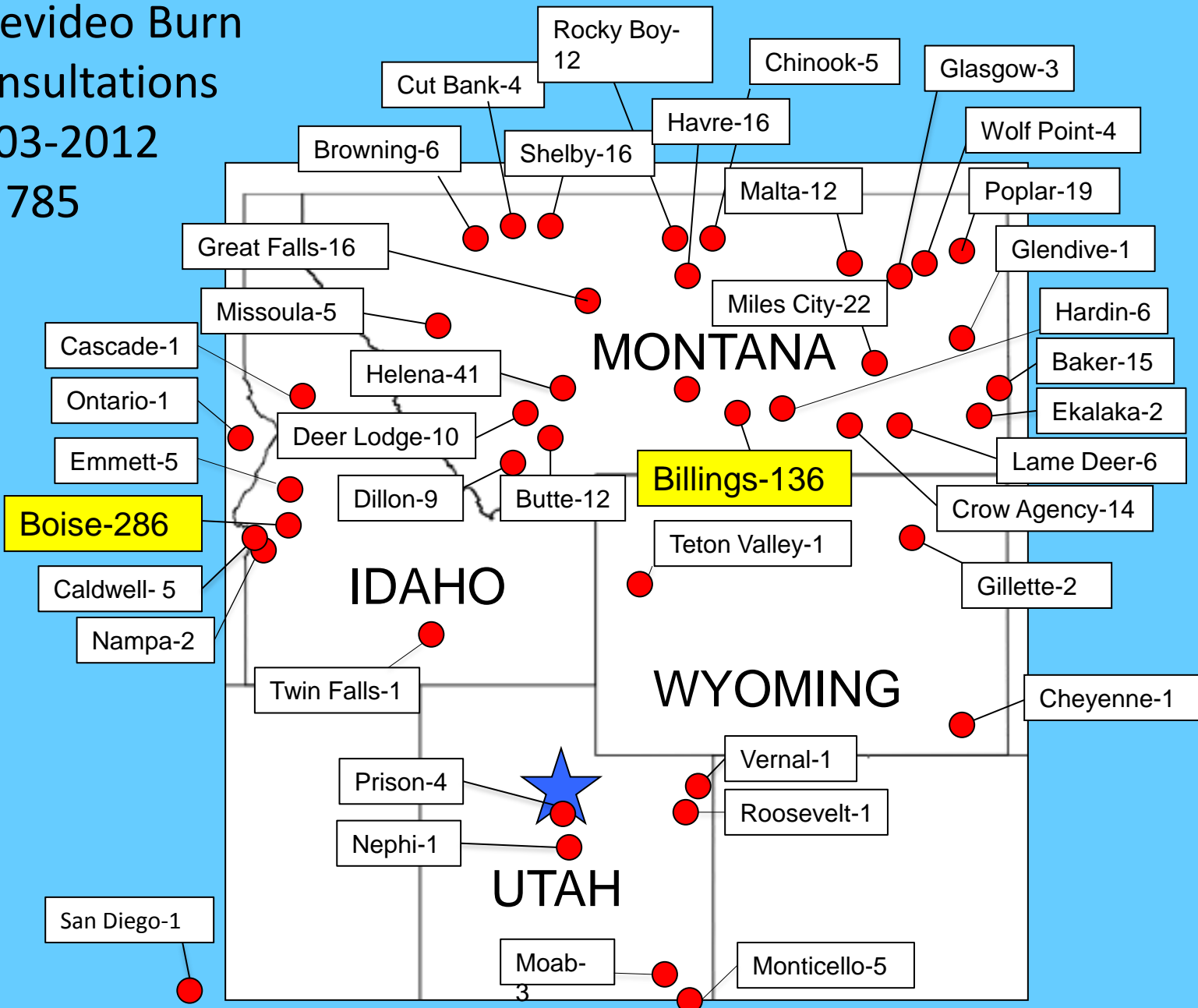
- Can be used by case managers to visit with patients frequently and/or remotely from their homes.
- Can be used for multi-site videoconferencing with providers.
- Permits much closer follow-up of patients with no down time, expense, or inconvenience for travel.
- Can be used for informed consent, prior authorization, case review.
- On-site telemedicine “booths” gaining popularity as a way to provide care for minor issues for workers on the job site.
- Viewed by consumers as modern, user-friendly normal method of communicating.
- Confidentiality will need to be addressed.

Cassidy
18 years old
16% TBSA
Poplar, Montana*



*Shown with permission!

Televideo Burn Consultations 2003-2012 n= 785



Burn Care in the 21st Century: Predictions and Warnings

Telemedicine MUST assume a prominent role in acute burn evaluation and treatment to be cost-effective, and to satisfy patient demands!

And this isn't only true for burns!

What are the Rules: Licensure

- Medicine is practiced at the location of the PATIENT, NOT the doctor, and a license is required!
- Exceptions include physician-to-physician consultation, Border States, US Military/VA Hospitals, Public Health Service, natural disasters
- State laws vary:
 - 36 States require complete licensure
 - 10 have special licenses
- Prescribing is the biggest problem/risk
- Many states require a physical exam before prescribing
- NO malpractice suits arising from telemedicine per se, but
 - Several over prescriptions
 - Several lawsuits against facilities for NOT having telemedicine!

Problems and Pitfalls with the “Slippery Slope” of Telemedicine

1. HIPAA:
 - Be careful! Use common sense!
 - Get the patient’s consent (preferably written)
 - Use “PHI” for internet transmission
 - Use a protected line/app for video if possible. Several are available. Skype and FaceTime are probably low-risk, but not OFFICIALLY recommended!
 - Don’t carry photos on your cell phone or laptop
2. Licensure: If you are TREATING a patient in another state, you MUST be licensed. Some states have “telemedicine only” licensure. National licensure is coming.
3. Credentialing: UUMC has “Delegated credentialing”
4. Liability: *The same as other practice.* DICTATE A NOTE!
5. Billing: Use specific modifiers but you CAN bill and you CAN collect!
6. Legal/administrative obstacles are being conquered rapidly!
7. The biggest obstacle is CULTURAL!

Question and Answer Session

Submit your questions in the Q&A panel on the right of your screen.



Dr. Jeffrey Saffle



Laurie Anderson

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