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Opportunity for 104 NPs: Transition of Care in Chronic Wound Management

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Disclosures

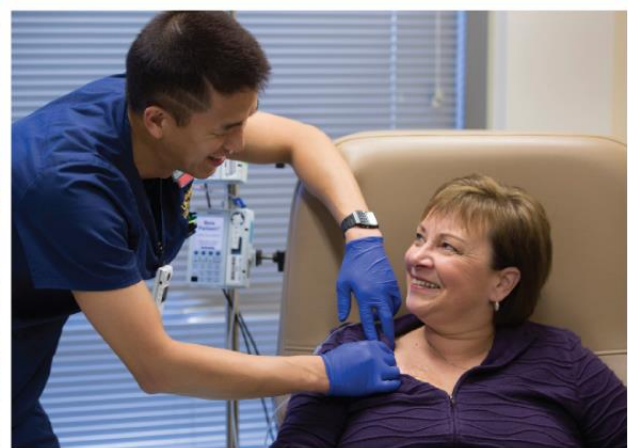
- No financial disclosure for both authors
 - Dr. Ordona is an Independent NP in a Group Setting (CA AB890) – Senior Care Clinic House Calls; Founder and manages nurse-led community-based care through Care Home By RNs; volunteer faculty for Gerontology/Geriatrics at UC Davis
 - Dr Kirkland-Kyhn is Assistant Clinical Professor at UC Davis and assistant director of Nurse-Led Mobile Clinic
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Learning Outcomes

- Participants can identify hospital-to-community transition-of-care (TOC) modalities for chronic wound management.
- Participants can incorporate caregiver education as part of the transition of care.
- Participants can identify an innovative way to provide access to care to a vulnerable population (e.g. the homeless or the homebound) with chronic wounds.

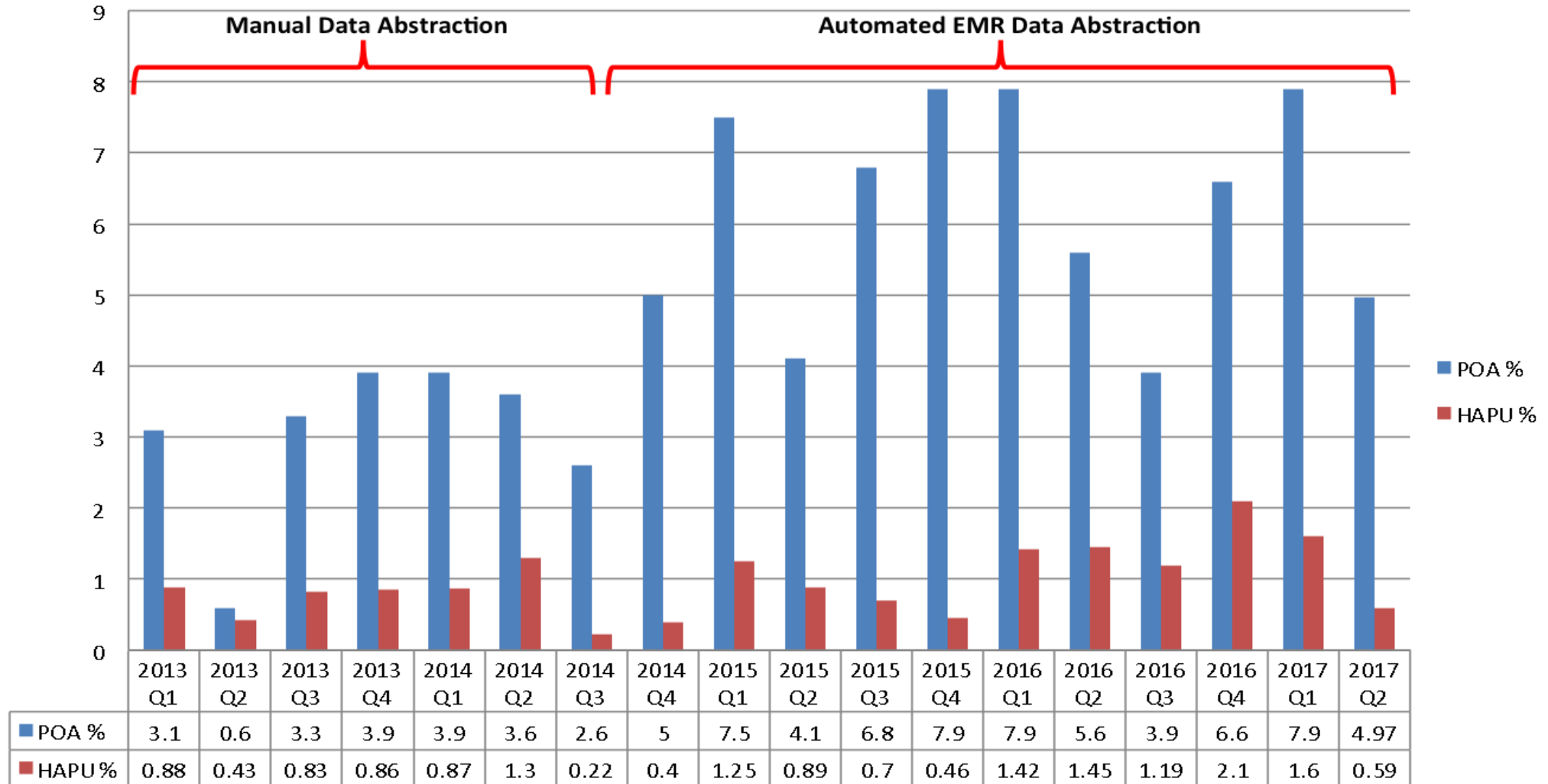


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HEALTH**

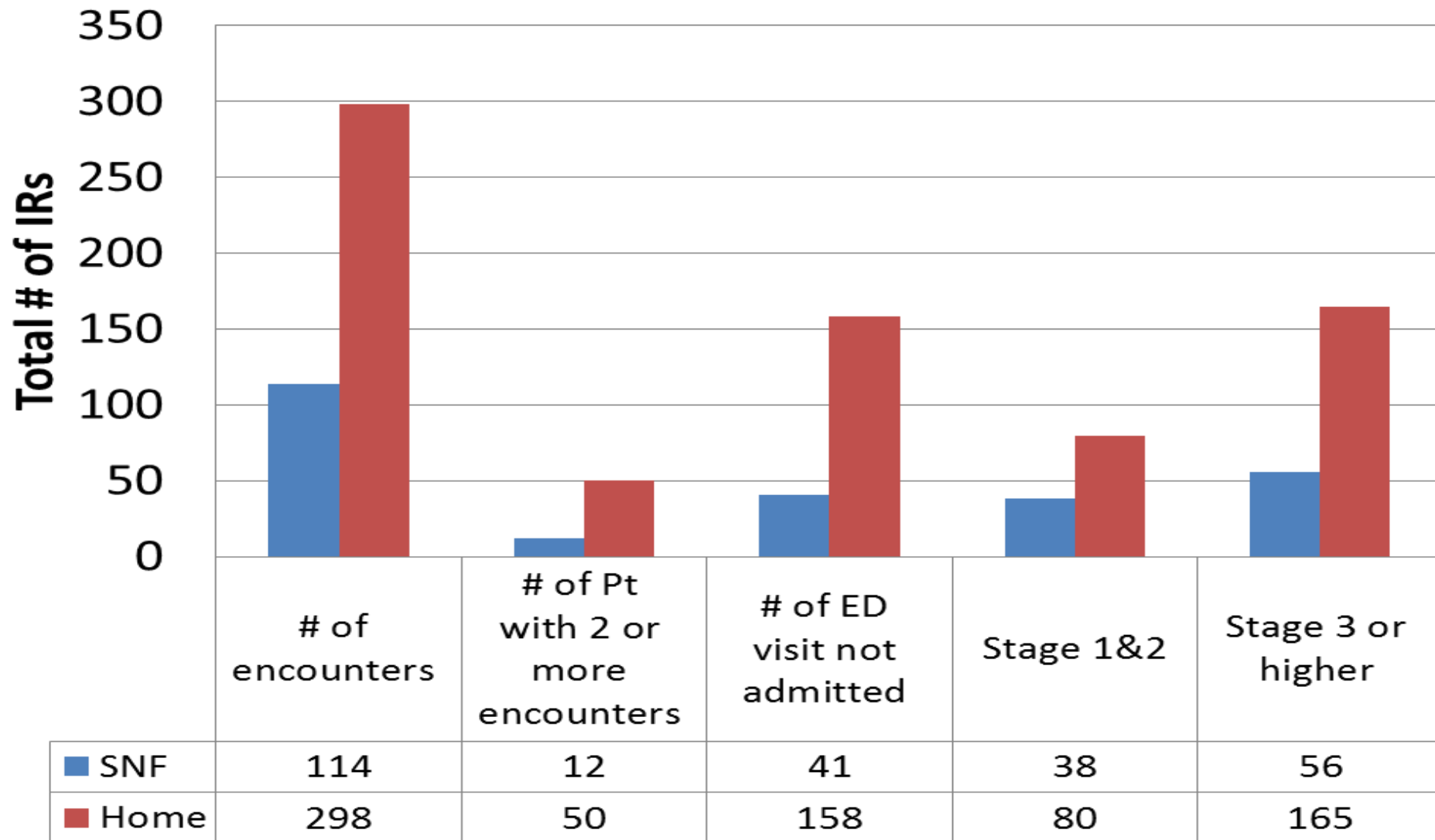


The Challenge: Pressure Injury Treatment and Prevention at Hospital Discharge

Prevalence Study: POA vs HAPU/I

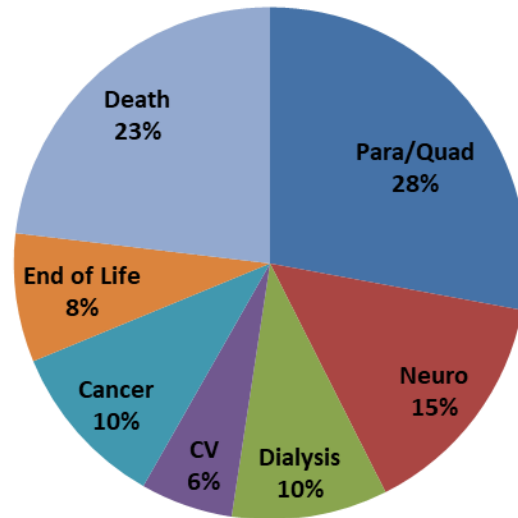


Reported RL POA (n=466)



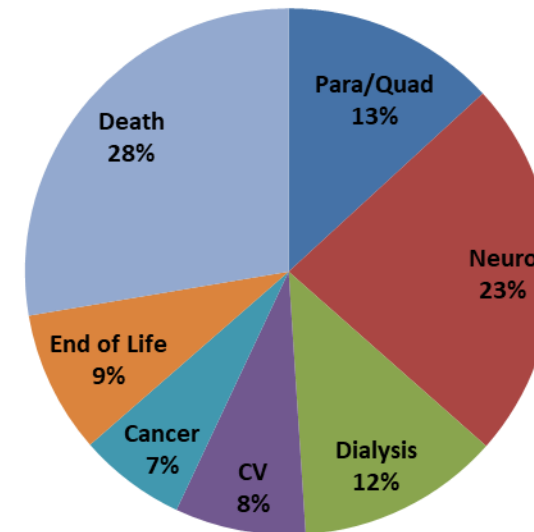
CAPU/I Comparison: Co-existing condition according to source of admission

Home N=336



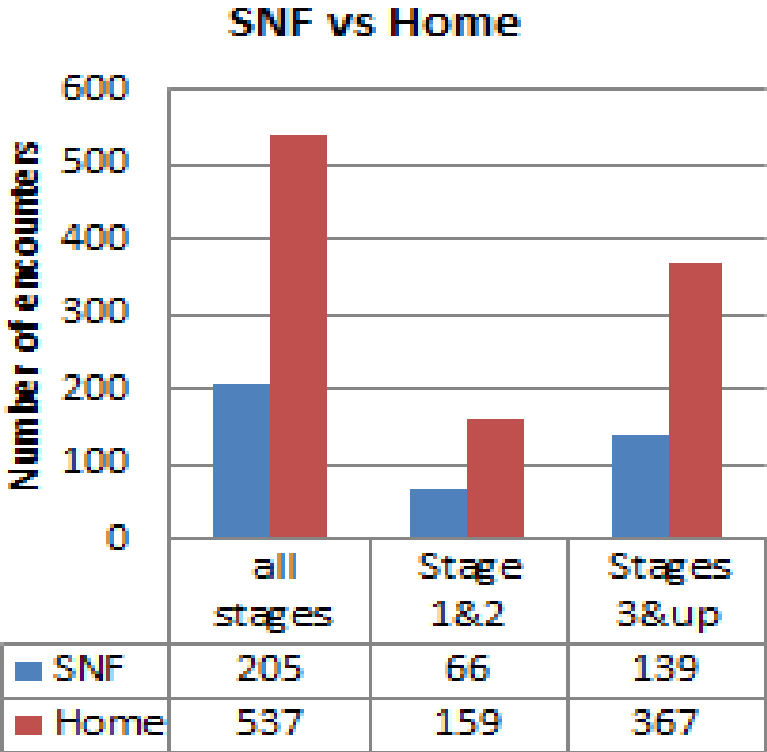
Home N=336	
Average age (range)	62.9 (18-103)
Gender – M- F-	M- 191 F-145
LOS (range)	10.8 (1-165 days)

SNF N=141

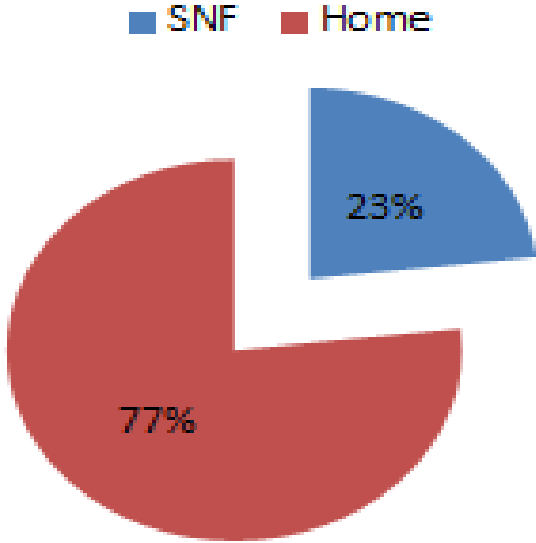


SNF N=141	
Average age (range)	71.5 (30-100)
Gender – M- F-	M- 76 F-65
LOS (range)	9.4 days (1-146 days)

SNF vs Home



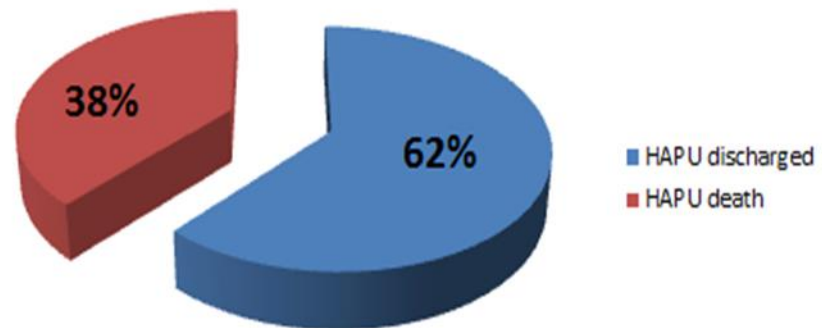
of patients with more than 2 admissions



HAPU/I data for 2018

- N=47 (29 stage 2) 4 D/C on Hospice
- Average LOS= 62.5
- Average age 57, Median age 64

Mortality rate for patients with HAPU stage 2, 3, 4, and unstagable



Pharmacology

The case for Dalbavancin



- Dalbavancin (IV): indicated for the treatment of acute bacterial skin and skin structure infections (ABSSSI) caused by designated susceptible strains of Gram-positive microorganisms: Staphylococcus aureus (including MRSA) and Enterococcus faecalis (vancomycin-susceptible isolates).

Pharmacology

The case for Dalbavancin



- Dalbavancin (IV):
 - In the ED, single dose Dalbavancin allows patients with skin/soft tissue infection be discharged safely and avoid hospitalization

Reference: DALVANCE® (dalbavancin) [prescribing information]. Madison, NJ: Allergan USA, Inc.; 2021.

Transition of Care (TOC) Evidence-based Recommendation(s)

1. Patient and Caregiver Engagement
2. Post discharge communication with patient/CG/
& PCP
Phone calls within 2 days
PCP or wound clinic f/u appointments within 7 days
3. Interdisciplinary team planning & communication
4. Share resources

Implementation Plan

- Strategy #1
 - Build communication with patient/ CG, HH nurse, PCP & interdisciplinary team for TOC
- Strategy #2
 - Identify with patient/CG an agreed upon form of contact within 2 days for f/u and contact patient with appointment for PCP or wound clinic
- Strategy #3
 - Communicate with PCP/wound clinic about patient goals and plan of care- wound care needs

Sustainability Plan

- Strategies-
 - Shared educational programs and opportunities with CNS, home health nurses, outpatient clinics
 - Discuss future partnerships for mentoring on Wound education with outpatient clinics, PCPs in FQHCs, NPs/ PAs, for f/u of wounds

Web Address to Home Alone Videos

– General Wound Care

- <https://journals.lww.com/ajnonline/Pages/videogallery.aspx?videoid=118&autoplay=true>

– Pressure Ulcers: Prevention and Skin Care

- <https://journals.lww.com/ajnonline/Pages/videogallery.aspx?videoid=116&autoplay=true>

– Treatment of Skin Tears

- https://journals.lww.com/ajnonline/Fulltext/2018/02000/Caring_for_Aging_Skin.29.aspx

– Caring for Lower Extremity Wounds and Cellulitis

- <https://journals.lww.com/ajnonline/Pages/videogallery.aspx?videoid=117&autoplay=true>

– Diabetic Foot Care: Treatment and Prevention

- <https://journals.lww.com/ajnonline/Pages/videogallery.aspx?videoid=119&autoplay=true>

– Caring for and Maintaining Ostomy Bags

- <https://journals.lww.com/ajnonline/Pages/videogallery.aspx?videoid=121&autoplay=true>

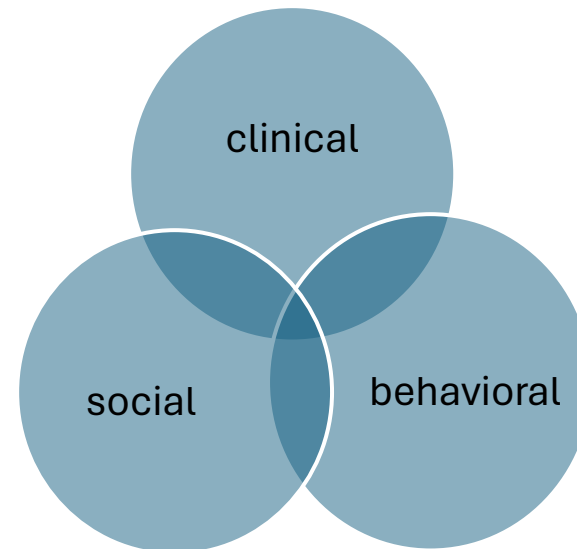
Transition of Care (TOC)

Acute Care to Community-Based Care

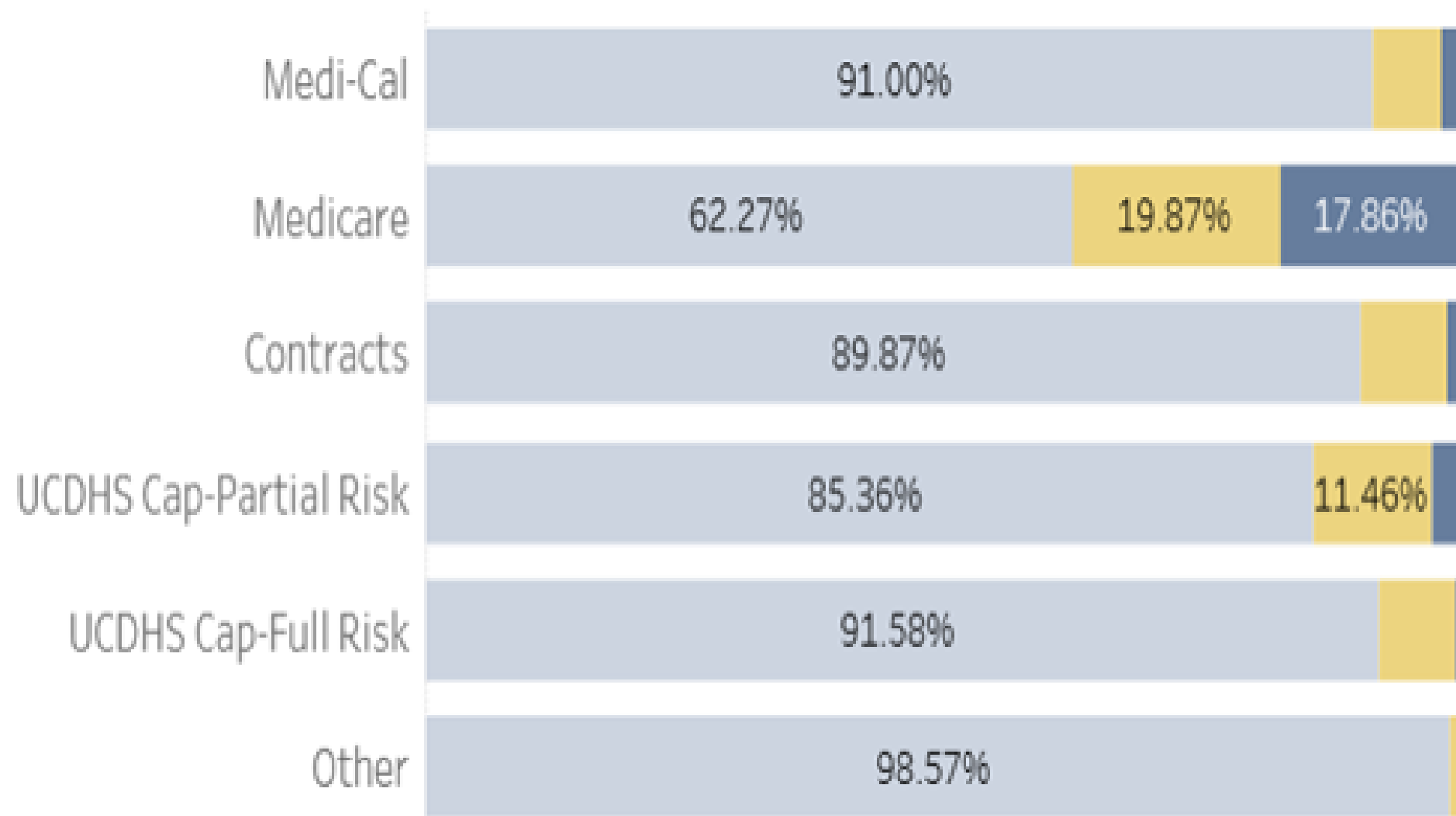


MVP (Multi-Visit Patients) Defined

- Target population are patients with a history of multiple hospital admissions: “frequent fliers”, “high utilizers”
- Patients who:
 - 4 or more admission per year
 - 10 or more ED visits per year
 - Use of the ED for primary care



Discharge Disposition by Payor: Home (Routine), Home Health, SNF



The Challenge

- Frequent re- admission of patients with wounds
 - Over 300 patients with chronic wounds with four or more readmissions per year (MVPs)



The Challenge

In this Academic Medical Center, we found that our rate of readmissions was between 11.4- 15% and that approximately 5% of our patient population used up to 60% of the resources. Current data shows this west coast American Academic Medical center has 1896 patient admissions per year with chronic wounds. Of the admissions, 109 individual patients have 4-25 hospital admissions per year. The hospital system dashboard has 839 MVPs and 79 in hospital today. The number of wound MVPs in the hospital per day range from 7-15. The largest proportion of MVP admissions originated from home as compared to skilled or long-term care. The highest percentage of type of wound was pressure ulcer/injuries stage 3-4, with an average length of stay of 10.9 days. The average age for patients discharged home was 62.9 and for skilled or long-term care average age was 71.5.



Kirkland-Khyn H, Teleten O, Joseph R, Maguina P. A Descriptive Study of Hospital- and Community-acquired Pressure Ulcers/Injuries. *Wound Manag Prev.* 2019 Feb;65(2):14-19. PMID: 30730301.

Kirkland-Khyn H, Teleten O, Joseph R, Schank J. The Origin of Present-on-admission Pressure Ulcers/Injuries Among Patients Admitted from the Community: Results of a Retrospective Study. *Wound Manag Prev.* 2019 Jul;65(7):24-29. PMID: 31373560.

Kirkland-Khyn, Holly PhD, FNP, GNP, CWCN, FAANP; Howell, Melania DNP, RN, AGCNS-BC, CWCN, DAPWCA; Senestraro, Jesse MBA, BSN, RN, CCRN-CMC; Walsh, Sarah MBA, BSN, RN, CNML. Leveraging technology to improve wound care delivery and care transitions. *Nursing Management (Springhouse)* 52(11):p 24-28, November 2021. | DOI: 10.1097/01.NUMA.0000795592.38063.7c

Known Quality Barriers in Transitional Care

- Medical level: Clinician workload, last minute changes, error in medication reconciliation, lack of timely discharge summary
- System level: Complexity of discharge process, paperwork, insurance barriers, and follow-up (visit, labs)
- Knowledge deficits: Patient, provider, caregiver

Strategies for Improving Transitions

- ✓ Outreach phone call by community-based provider post-hospitalization
- ✓ Obtain and review relevant medical records
- ✓ Office visit or medical house call visit by provider within 7 days post-discharge
- ✓ Review of medical records
- ✓ Medication reconciliation and optimization
- ✓ Address DME needs
- ✓ Place order for HH if appropriate and perform necessary FU testing
- ✓ Ask about barrier to compliance (medications, diet, logistics, physical impairment)

Strategies for Improving Transitions (cont'd)

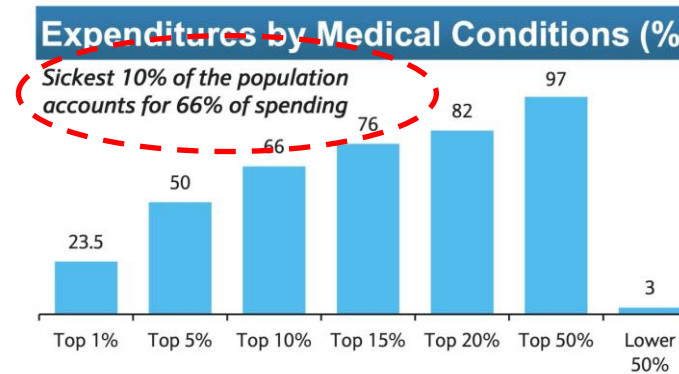
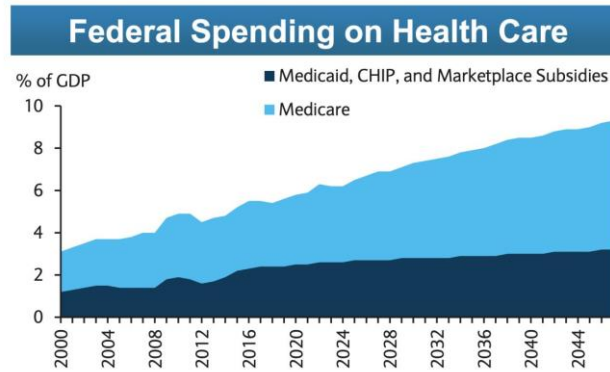
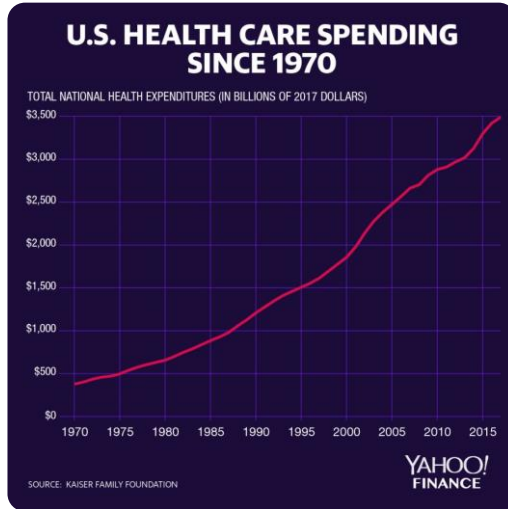
- ✓ Assess caregiver concerns
- ✓ Review patient/caregiver goals of care and advance directives
- ✓ Identify and address knowledge deficits
- ✓ Provide written instruction on conditions, medications (including indications and changes), follow up appointment, and how to reach provider if needed
- ✓ Assess understanding of care plan
- ✓ Discuss emergency plan if condition(s) worsens
- ✓ Coordinate with (wound care) team

Mary Naylor Definition of Transitional Care

- **Transitional Care:** “A broad range of time-limited services designed to ensure health care continuity, avoid preventable poor outcomes among at-risk populations, and promote the safe and timely transfer of patients from one level of care to another or from one type of setting to another. Transitional care is complementary to but not the same as primary care, care coordination, discharge planning, disease management or case management. The hallmarks of transitional care are the focus on highly vulnerable, chronically ill patients throughout critical transitions in health and health care, the time-limited nature of services, and the emphasis on educating patients and family caregivers to address root causes of poor outcomes and avoid preventable re-hospitalizations.”

Naylor, M.D., Aiken, L.H., Kurtzman, E.T., Olds, D.M. & Hirschman, K.B. The importance of transitional care in achieving Health Reform. *Health Affairs* 2011;30(4):746-754.

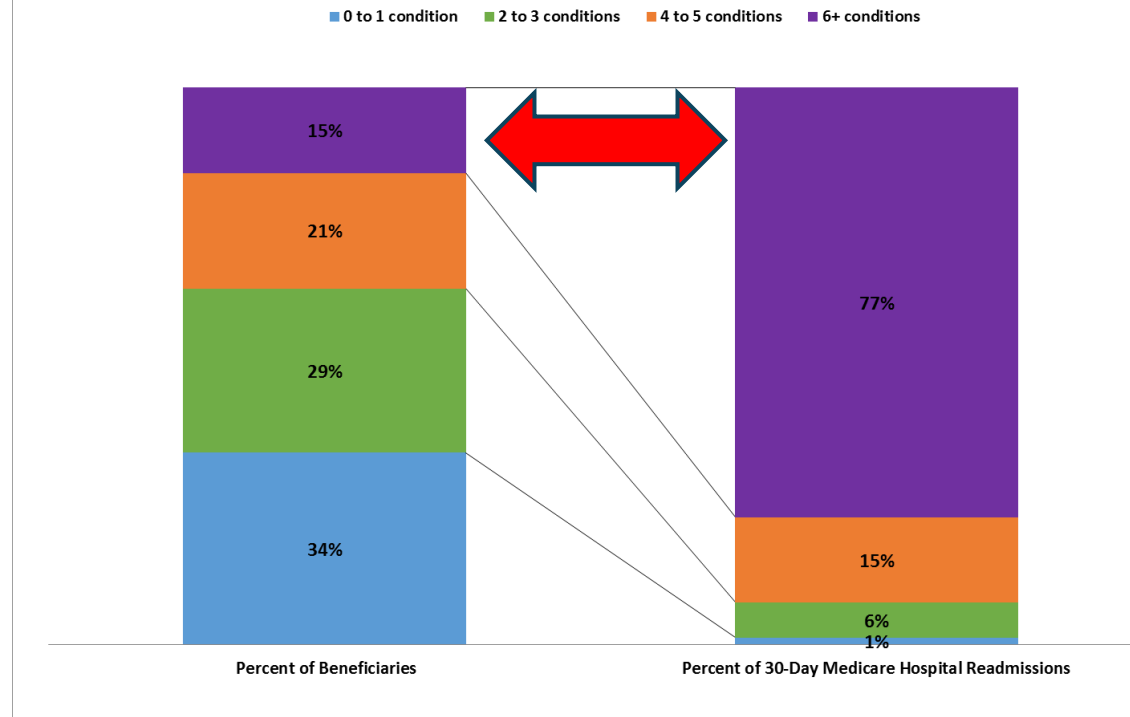
Why should we be concerned?



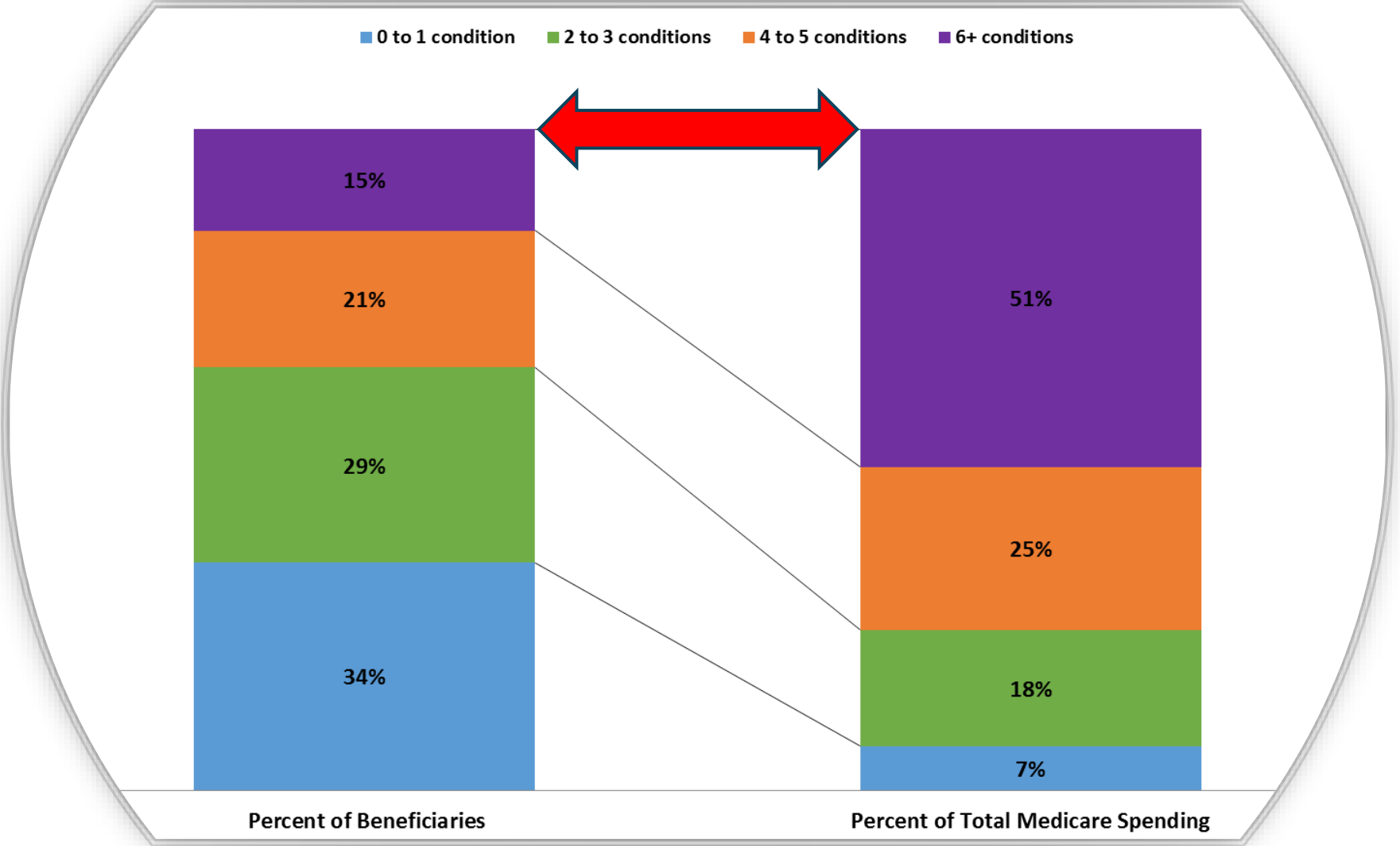
93% of Medicare spending – multiple chronic conditions

HOSPITAL READMISSIONS

Figure 14: Distribution of Medicare Fee-for-Service Beneficiaries and 30-Day Medicare Hospital Readmissions by Number of Chronic Conditions: 2015



MEDICARE SPENDING



CDC, 2018
Moran Data, 2019

Hospital Readmission Reduction Program (HRRP)

- Medicare payment reduction for excessive readmission
 - In the first year of the Hospital Readmission Reduction Program, 2,200 hospitals received cumulative penalties of \$280 million.



Towne, et al, 2014; Stall, et al, 2014; Hamar, et al, 2016

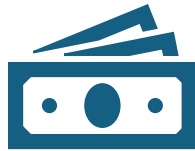
Local scenario

Sacramento Area (Northern California)

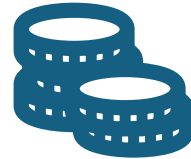


- Sacramento (2015 data) Medicare fee-for-service, 30-day, all-cause hospital readmission rate was 17%
 - 16.1% discharged to home
- Patients with no PCP visit
 - 41.2% were readmitted
 - 58.8% were readmitted did not have a 30-day follow-up visit
 - 36.2% returned within a week of discharge

Specific Per Patient Cost Savings



Total health care savings for intervention vs. control patients at **24** weeks = **\$3000 per patient**



Mean savings at **52** weeks for intervention vs. control patients = **\$5,000 per patient**



A “top-tiered” evidence-based approach by the Coalition for Evidence-Based Policy



SNF/Acute Care to Home Transitional Care Model

- Making the case for APRN partnerships among Acute Care/SNFs/Community-Based Care



Intervention



A pathway was developed that involved NP-led initiatives in acute care setting in collaboration with NP-led initiatives transition of care (TOC) for follow up care.



For patients that need more around-the-clock care, the TOC NP for wound and inpatient discharge planners works with local NP-managed home-based primary care and community-based (board and care) homes to provide strategic low resource, affordable and sustainable treatment plans with educational support where community-based clinicians, family caregivers and other stakeholders have opportunity for education on skin and wound care.

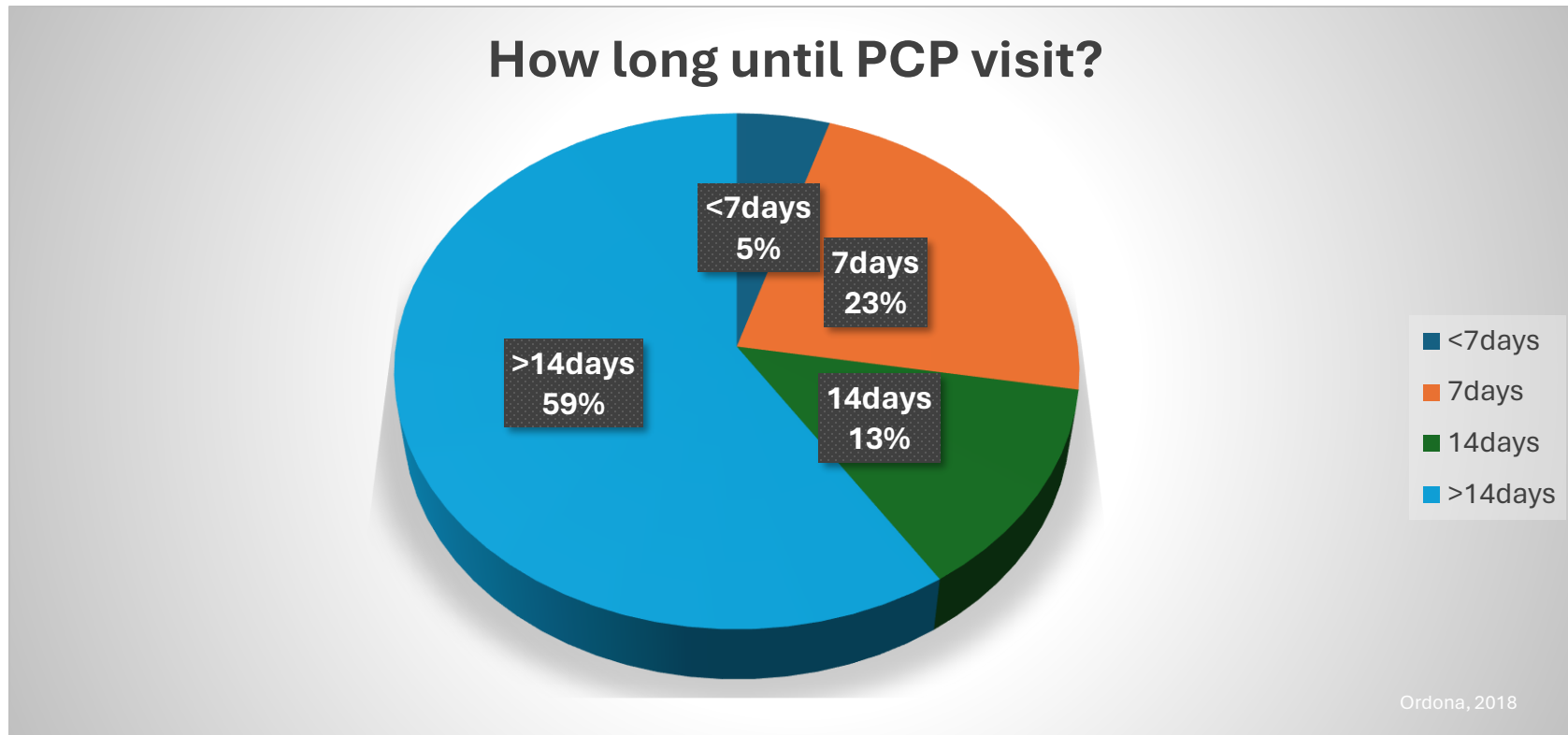
Intervention

- Collaboration (ongoing work)
 - Betty Irene Moore School of Nursing at UC Davis and AARP created videos for wound care, targeting caregivers.
 - QR code to be automatically embedded into the discharge orders for patients
 - NP for TOC wounds developed a pathway for patients to have NP specialist wound follow up care for patients bypassing the need for a primary care appointment



Time to PCP

In a QIP: More than half (59%) of the sample (N=145) could not see their PCP for more than 14 days after discharge.



Intervention

- Wound photos, goals of care, discharge summary and transportation is arranged for follow up.
- Over 100 patients a year are now followed at the NP managed wound clinic.

Partnerships

Acute Care Case Management

**UC DAVIS
HEALTH**

Community-Based Care
House Call Primary Care;
Community Wound Care Clinics

Senior Care Clinic



HOUSE CALLS

Residential Care
Room & Board • Board & Homecare

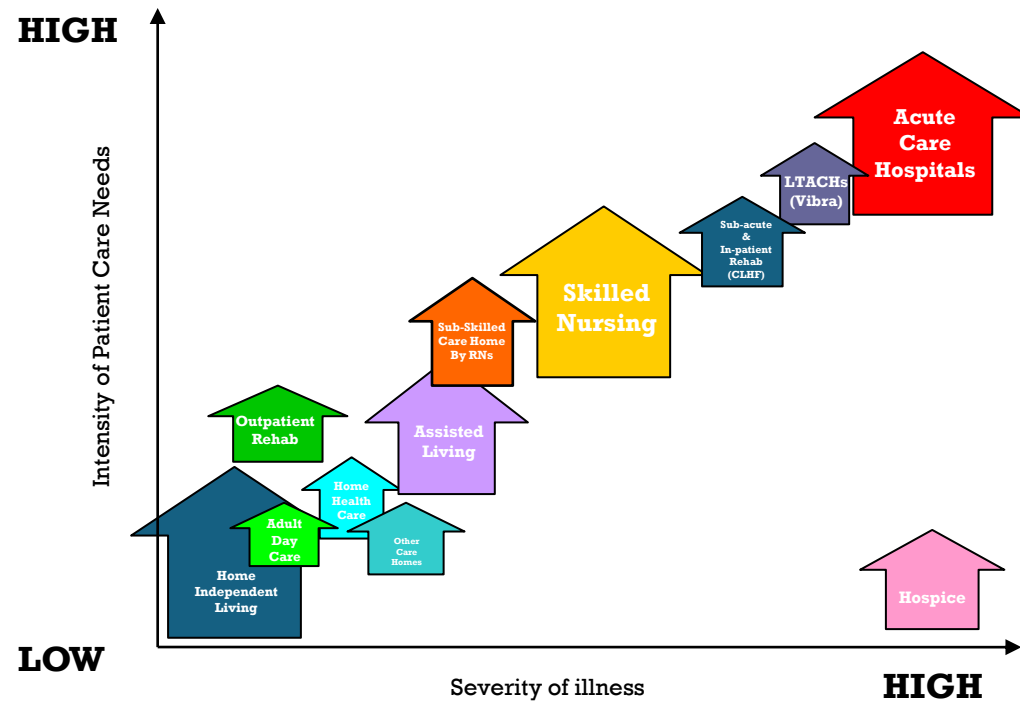


Intervention

- For patients who need more care, the NP for wound TOC and discharge planners work with local NP/RN supported care homes provide affordable treatment plans



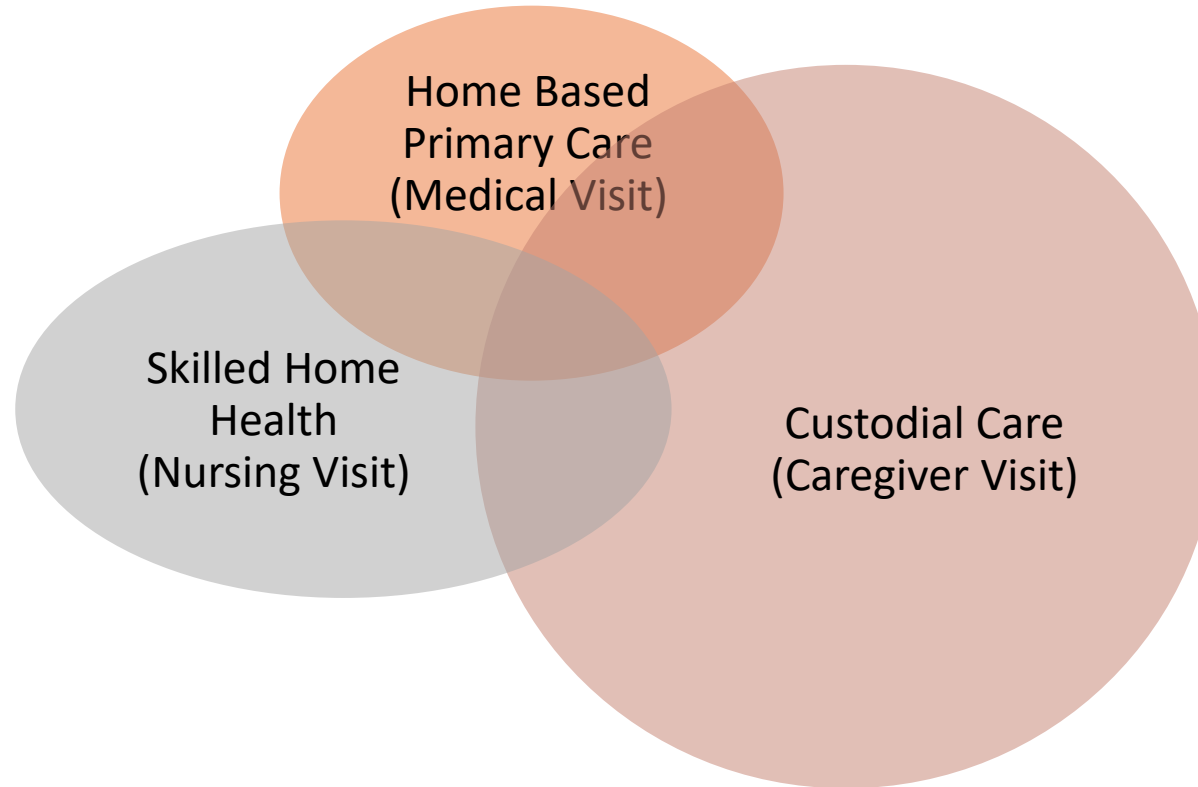
Continuum of Care - California



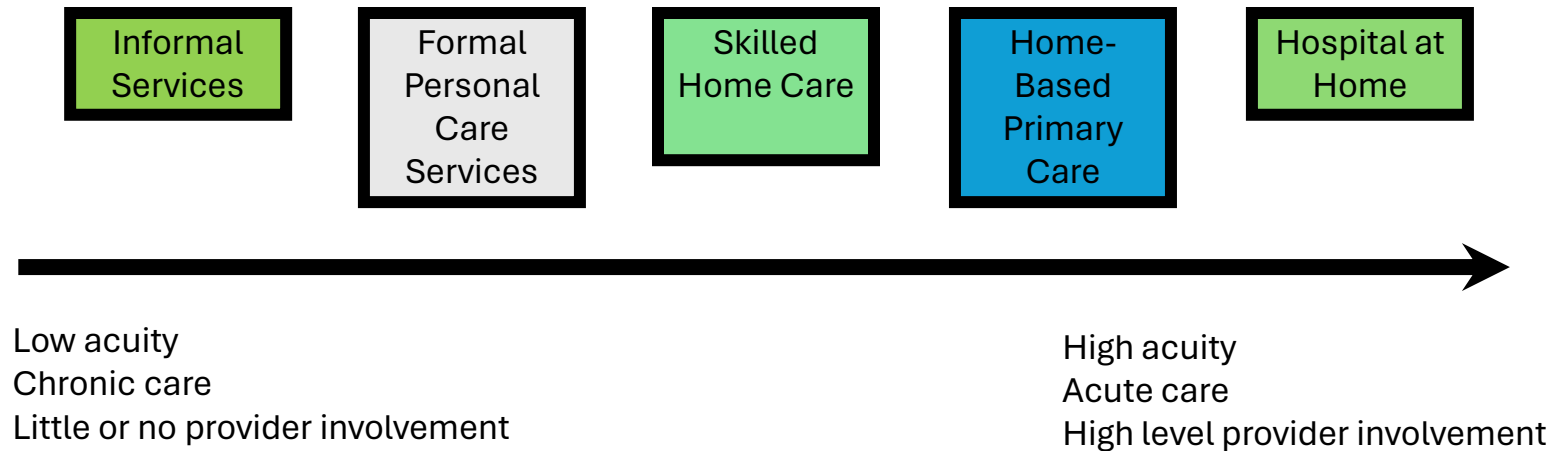
Senior Care Clinic



Three Types of “Home Care”



The Spectrum of Home-Based Care



Community-Based TOCs long term options

CLHF (“Cliff”) – California

- Congregate Living Health Facility (the acronym CLHF is colloquially pronounced as “cliff”) is a residential home with a capacity, of no more than 12 beds, except as provided in Sections 1250(i)(4)(A) & (B) of the Health and Safety (H&S) Code.
- Congregate Living Health Facility provides inpatient care, including the following basic services: medical supervision, 24-hour skilled nursing, and supportive care, pharmacy, dietary, social, and recreational.



What is a CLHF (“Cliff”) – California

- Usually 6 beds up to 15 beds
- 25 beds maximum in a population catchment by California county of 500,000 population or more



What is a "Board & Care" (RCFE/ALF Residential Care Facility for Elderly) – Ca & some states

- Usually 6 beds in a home in a neighborhood
- "Board and Care"
- Caregivers 24/7
- Some are up to 150 beds
- (Assisted Living Facilities)
- Managing stage 3, 4 wounds require state licensing "exception" in California
- Nurse involvement in this level of care is highly-valued



What is a "Room & Board" (ILF)– California & some states

- Usually 6 beds in a home in a neighborhood
- Independent Living Facilities
- NO Caregivers 24/7, food is provided
- Managing stage 3, 4 in this setting is more challenging
- Nurse involvement in this level of care is highly-valued



Treating Wounds in Low Resource Settings



Diversity, equity and inclusion



Social Determinants of Health Considerations

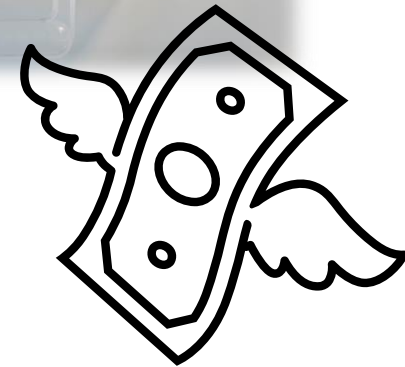
- Housing
- Politics
- Access to health care & products
- Transportation and infrastructure
- Environment: Food access, housing, recreation
- Social norms and identify
- Disasters and emergency response

Improve Discharge Education



Dollar- Medical Products

- Slings
- Bandages/ ACE wraps
- Pregnancy tests
- Epsom salts
- Hot/cold packs
- Tapes
- Pepto-Bismol
- Maalox
- Antacid tablets
- Antibacterial hand gel
- Vinegar



Wound Caddy- for FQHC

Wound caddy included:

Use products from your supply
and dollar store-

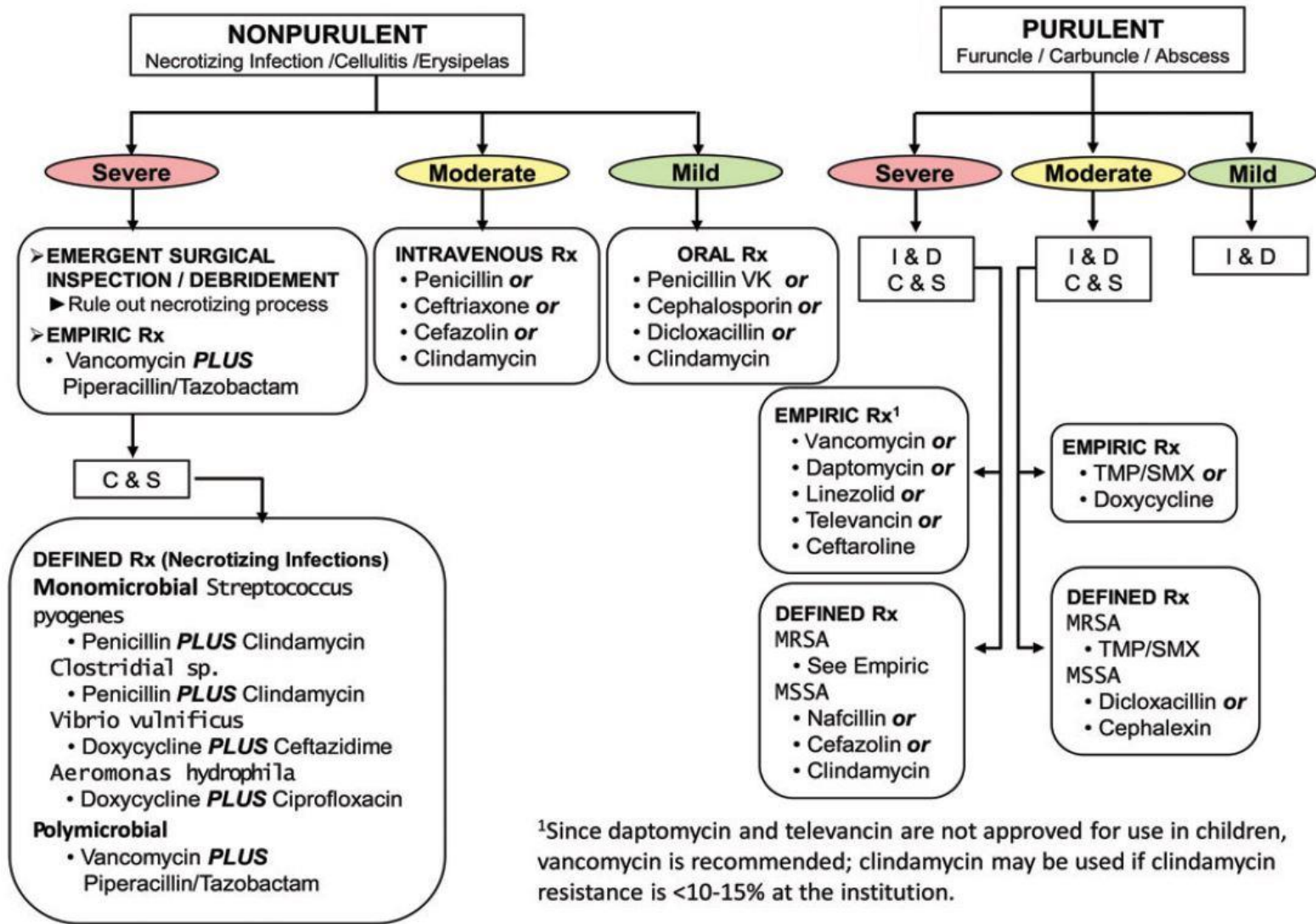
One for wet wounds

One for dry wounds-



Antibacterial Agents

- Mupirocin is preferred for wounds with suspected methicillin-resistant *Staphylococcus aureus*.
- Nonsuperficial mild to moderate wound infections can be treated with oral antibiotics.
- Antibiogram: guide the clinician and pharmacist in selecting the best empiric antimicrobial treatment in the event of pending microbiology culture and susceptibility results.
- Antibiotic Stewardship



¹Since daptomycin and televancin are not approved for use in children, vancomycin is recommended; clindamycin may be used if clindamycin resistance is <10-15% at the institution.

Pharm for Chronic Conditions

How will they impact wound?

- Comorbid conditions - Hypertension, congestive heart failure, cardiovascular disease
- Function to participate in wound dressing changes – e.g. osteoarthritis pain
- Endocrine changes – Diabetes-kidney failure
- Conditions with skin changes leading to infections
- Medical devices
 - Consider medical devices (e.g. wheelchair, tracheostomy) in wound dressing choices
- Consider the whole picture of the patient – you may need to treat chronic conditions to make progress with the wound



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Antibacterial Agents (AAFP)

Classification of Wound Severity and Treatment Strategies

Severity	Signs and symptoms	Treatment	Special considerations
Uninfected	Lack of purulent drainage or inflammation	Cleanse wound	None
Mild	Cellulitis extending less than 2 cm from the wound and at least two of the following: erythema, induration, pain, purulence, tenderness, or warmth; limited to skin or superficial tissues; no evidence of systemic illness	Abscess without surrounding cellulitis: incision and drainage, destruction of loculations, dry dressing Superficial infections (e.g., impetigo, abrasions, lacerations): topical mupirocin (Bactroban); bacitracin and neomycin less effective Deeper infections: oral penicillin, first-generation cephalosporin, macrolide, or clindamycin	Topical mupirocin, oral trimethoprim/sulfamethoxazole, or oral tetracycline for MRSA
Moderate	At least one of the following: cellulitis extending 2 cm or more from wound; deep tissue abscess; gangrene; involvement of fascia; lymphangitis; evidence of muscle, tendon, joint, or bone involvement	Cellulitis: five-day course of penicillinase-resistant penicillin or first-generation cephalosporin; clindamycin or erythromycin for patients allergic to penicillin Bite wounds: five- to 10-day course of amoxicillin/clavulanate (Augmentin); doxycycline or trimethoprim/sulfamethoxazole, or fluoroquinolone plus clindamycin for patients allergic to penicillin	Trimethoprim/sulfamethoxazole for MRSA; patients who are immunocompromised or at risk of noncompliance may require parenteral antibiotics
Severe	Acidosis, fever, hyperglycemia, hypotension, leukocytosis, mental status changes, tachycardia, vomiting	In most cases, hospitalization and initial treatment with parenteral antibiotics Cellulitis: penicillinase-resistant penicillin, first-generation cephalosporin, clindamycin, or vancomycin Bite wounds: ampicillin/sulbactam (Unasyn), ertapenem (Invanz), or doxycycline	Linezolid (Zyvox), daptomycin (Cubicin), or vancomycin for cellulitis with MRSA; ampicillin/sulbactam or cefoxitin for clenched-fist bite wounds
Progressive infection despite empiric therapy	Spreading of infection, new symptoms (e.g., fever, metabolic instability)	Treatment should be guided by results of Gram staining and cultures, along with drug sensitivities	Vancomycin, linezolid, or daptomycin for MRSA; consider switching to oral trimethoprim/sulfamethoxazole if wound improves

Street Feet

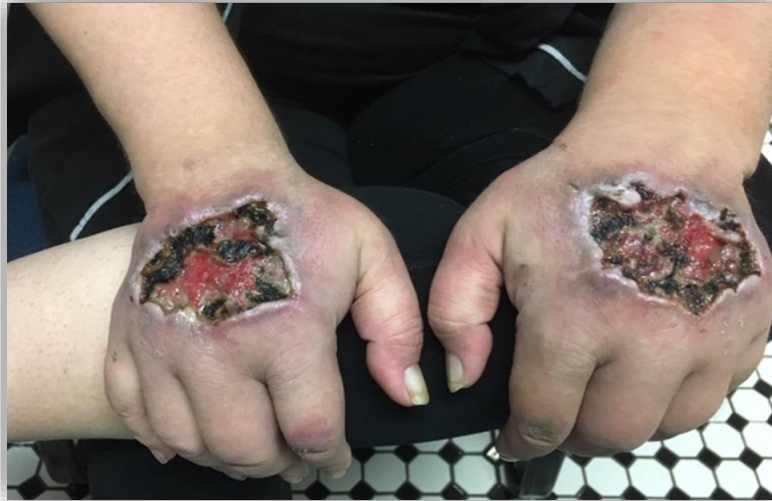


Levamisole induced Vasculitis



**Frostbite in
Methamphetamine use**





5 months of injecting



1 month of soap and water with Dakin's

Cleansing Agents



Saline- vinegar and surfactant based cleansing solutions

Cost

- \$

Usage

- Saline-based solution for cleansing and irrigating acute and chronic wounds
- Does not interfere with wound healing
- Also comes in blends with surfactant and acetic acid

Wound types

- Slough wound
- Crusting wound



Hypochlorous blend

Cost

- \$

Usage

- Broad spectrum antimicrobial cleanser, effective against bacteria, viruses, molds, fungi & yeast.
- Used for odor control
- Recommended for acute & chronic wounds

Wound types

- MRSA infection
- Pseudomonas infection

Results

- Improvement in TOC
 - opened up more acute care beds
 - promoted wound closure
 - sustained co-management of co-morbidities
- Transitioned patients from acute care to home or community-based care facilities
 - able to avail of interdisciplinary telemedicine wound visits
 - low-resource and sustainable agreed upon wound care plan
 - follow up in home and/or clinic (when patients are able to leave home)

Results

- 100% of patients transitioned into NP-led community-based residential care was able to heal wounds and transitioned further into lower, and less costly, level of care such as independent living or “room and board” care.

In summary...

1

Discharge Planning



2

Caregiver Education



3

Telehealth



Implication for practice

- An improvement in transitions of care (TOC) to promote wound closure and management of co-existing conditions is essential.
 - **A potential practice area for future NP104s**
- Transitioning patients from acute care to home or care facilities include interdisciplinary (incl telehealth) wound visits, proper support surfaces and agreed upon plan, and follow-up in-home and/or (wound) clinic.

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Questions and comments....



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