Technology-Enabled Services for Better Wound Outcomes

Jayme Smith RN, SMQT, SWOC

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Disclosure of Commercial Interests

**I have commercial interests in the following organization(s):
Telemedicine Solutions, LLC / WoundRounds™.**

**I am currently employed by WoundRounds™ as an
Implementation Project Manager, Trainer and Clinician.**

*WoundRounds™ is a comprehensive skin and wound
management system, which includes risk
assessments and interventions, skin alteration
assessments with annotations and quality assurance
reporting generated from the data entered.*

About Jayme Smith RN, SMQT

Passion for supporting wound care through technology

- WoundRounds™ Implementation Specialist
- Former state surveyor for TX Department of Aging and Disability Services
- SMQT certified (CMS required for SNFs) TxDADS-certified investigator
- Wound Care Certified
- Background as DON in SNF setting, acute care, ICU and mentoring

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Objectives

Technology-Enabled Services for Pressure Injury Prevention

- Learn how technology can be used to reduce Facility-Acquired Pressure Injuries and Worsening Wounds
- Explore technology solutions that streamline & decrease nursing time, and labor costs
- Discuss techniques to treat patients in place and avoid hospitalizations
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Background on Wound Management

- Lack of standardized documentation inhibits communication and coordination of care across care settings
- Variability increases exposure to risk
- Across care settings, and particularly in LTC, wound management is often:
  - Highly variable
  - Costly
  - Time consuming

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Importance of Documentation

- Support skilled level of service
- Support the frequency and type of treatment
- Support preventative interventions
- Support determination of unavoidable
- Optimal communication within Care Team
- Appropriate Reimbursement
- Cost Justification for Specialty Services/Equipment
- Risk & Liability

Avoidable vs. Unavoidable

- **Avoidable** pressure injuries
  - Not related to pathology, the patient's right to refuse or normal aging
  - Expose facilities to costly survey violations and significant risk of lawsuits
- **Unavoidable** pressure injuries
  - Must have process in place that meets criteria for unavoidable
  - Must be documented appropriately

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Criteria for Unavoidable Classification

- Evaluate each patient's condition and/or risk factors
- Define & implement interventions consistent with their needs/goals
- Assure care delivered is based on recognized standards of practice.
- Monitor & evaluate impact of interventions
- Revise interventions appropriately

Setting the Stage for the Study

MDS 3.0 Background for LTC
- Present on admission
- Evidence based assessment of pressure injuries
- Objective measures of improvement
- Expectation of risk assessment

Study Background

About the Facility
- 51 bed SNF
- Part of an integrated health system comprised of acute & post-acute facilities

Pilot Study
- 90-day IRB study of an electronic documentation and wound care management system
- Purpose: Test the effectiveness of a system to enable skilled nurses to provide wound care more effectively and efficiently through better data collection and increased access to information
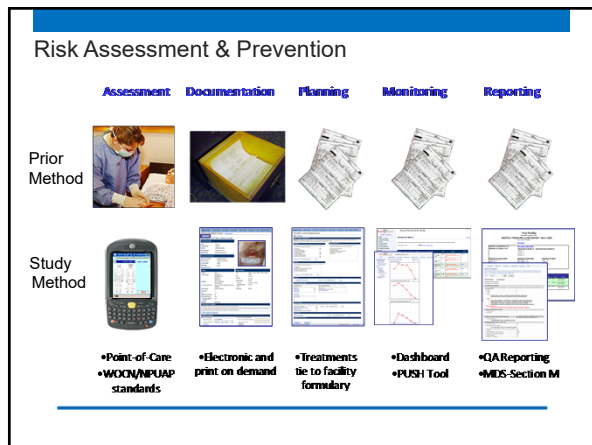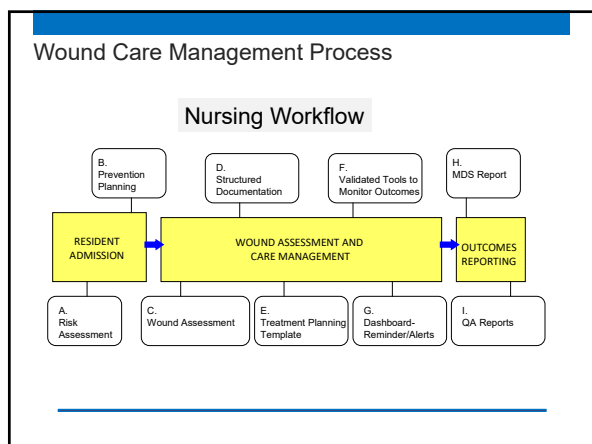
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Technology Approach

Point-of-care documentation and wound care management solution

| NURSES USE MOBILE DEVICES AT THE BEDSIDE | UPLOAD DATA AND IMAGES TO SECURE SERVERS | PRINT DOCUMENTATION AND REPORTS |

Risk Assessment & Prevention

	Assessment	Documentation	Planning	Monitoring	Reporting
Prior Method					
Study Method	•Point-of-Care •WOCN/NPUAP standards	•Electronic and print on demand	•Treatments tie to facility formulary	•Dashboard •PUSH Tool	•QA Reporting •MDS-Section M

Wound Care Management Process

Nursing Workflow

## WC Process Improvement

1. Redefined Wound Management Process
   - Better allocation of resources to high-risk patients
   - Facility-wide focus on prevention
   - Achieved measurable reduction in pressure injuries
2. Reinforced Team Approach
   - Include staff nurses in prevention and management of lower acuity wound patients
   - CNA's, dietary, OT/PT engaged in implementation of preventive interventions

WC Process Improvement

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Outcomes: Published Study

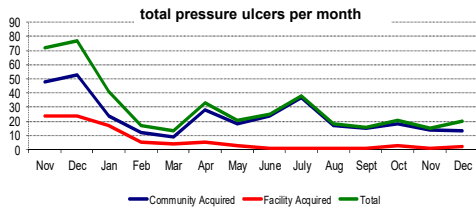80% decrease in facility-acquired pressure injuries

180 Day Pressure Ulcer Review

Community Acquired — Facility Acquired — Total
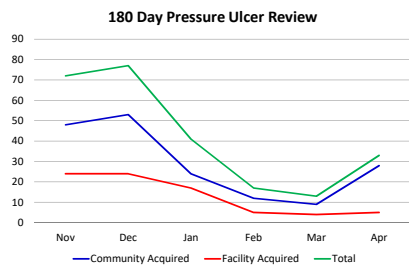
Presented at the 4th Annual Symposium on Advanced Wound Care Fall (SAWC) poster session

Consistent & SUSTAINED Outcomes

Over next twelve months:

- **<** 5 facility-acquired PU per month
- **>** 80% improvement sustained over time
- no fines or citations

total pressure ulcers per month

Legend: Community Acquired — Facility Acquired — Total

Presented at the 4th Annual Symposium on Advanced Wound Care Fall (SAWC) poster session

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DK2

Case #1: Against All Odds

- 78 year old male
- Status: Multiple Medical Problems
  - Several Vertebral Fractures
  - Sclerotic lesions to lumbar region
  - General Osteoarthritis, DJD of the hands
  - Muscle Disuse, Atrophy
  - History of prostate cancer
  - Lung cancer and resection
  - COPD
  - CVA's in past - Left sided weakness - Mobility dysfunction

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Case #1

Cleared For Surgery

- Pt. fell day prior to the procedure
- Admitted to hospital with left acetabular fracture
- Discharged to SNF for recovery and rehab consult

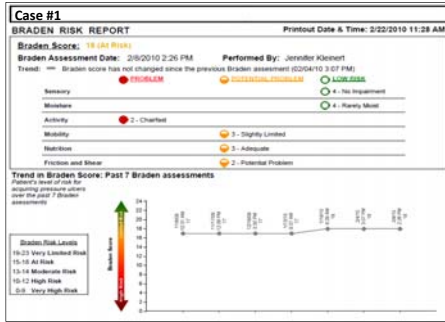### Admitted to SNF:

Initial Assessment:

- Multiple medical problems
- Stage IV Pressure Ulcer to left achilles with exposed tendons

DK2   Jayme, Case #1 and #2 might be where you input your patient cases if you dont feel comfortable speaking to these
Debra Kurtz, 8/4/2017

Easy to Monitor Wound Healing

Documentation

PUSH Score & Trend

Assessment details

Notes

Monitor Wound Healing

PUSH Score Trend Graph

Monitor Risk Trends

Case #1: Success

Returned home after 2 ½ months with minimum scarring

Case #2 – 84 year old male

Before Auto Accident
- Independent with all ADL's
- Independent with all self care
- Able to drive
- Hypertension
- Hyperlipidemia
- Chronic Sinusitis noted on CT scan
- Some confusion a few days before accident
- Two small blisters to right foot

After accident
- Functional decline secondary to CVA
- Right sided visual neglect
- Cognitive Deficit
- Gait & Mobility Dysfunction
- Dementia
- CAD with atrial flutter
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Case #2

Admitted to SNF
- Status post CVA
- Rehabilitation/Strengthening Therapy
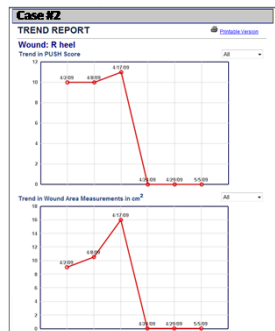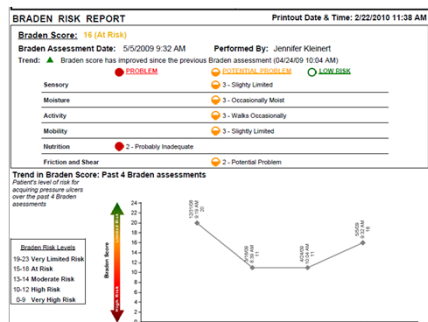- Patient complains of pain to foot on admission

Case #2

Documentation

Monitor Wound Healing

Monitor Risk Trends

Case #2

Road to Recovery
- Remarkable results with physical therapy -- able to perform all ADL's independently
- Cleared from Speech Therapy
- Cleared from Occupational Therapy
- Wounds healing well

Home After 2 Months in SNF

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Technology Enhances Nursing

A study on implementing technology in wound care reported…

- Automated charting and reporting created time savings
  - Estimated at **8-10 hours per week** for the WC nurse[1]
- Staff Nurse satisfaction increased[2]
  - Increased reports of *ease* of performing their job
  - Increased reports of *effectiveness* in performing their job

1. January 2012 Long Term Living, Simply Wound Care through HIT
2. March 2012 edition of Ostomy Wound Management

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Case #3: Nursing Time Savings

AMG Greenwood Wound Care Activity	Monthly Hours - Before Technology	Monthly Hours - After Technology	Monthly Time Savings
Calculating PUSH tool scores	5	0	5
LTCH Care Data Documentation	5	0.5	4.5
QAPI Data Gathering	5	1	4
Wound Care Photo Documentation and Printing	10	1	9
Documentation of Wound Care and Wound Measurements, etc. for Medical Record	30	12	18
Wound re-assessments	30	15	15
TOTAL	85 hours/month	29.5 hours/month	55.5 hours /month or 65%

Case Study: Payroll Savings from Wound Management Technology

AMG Lafayette Treatment Nurses	Payroll Data – Before Technology (Jan – May Prior Year)	Payroll Data – After Technology (Jan – May Current Year)	5- Month Savings (Jan - May)	Annualized Savings Lafayette
Hours	1,2345 hours	1,052 hours	183 hours	438 hours
Payroll Spending	$35,910	$29,379	$6,531	$15,675
Percent Savings				18% savings

Case #3 Study: Quality Impact

Facility redeployed staff for improvements and has reinvested payroll savings to focus on improved quality in wound care:

- Wound care nurses have improved and standardized the wound assessment process
- Now patients are assessed upon the day of admission
- Created consistency among staff in differentiating wounds such as pressure injuries from other wounds with similar appearance, such as venous stasis injuries

Case #4: Patient Census & Time Savings => Profits

- SNF implemented wound technology and achieved efficiencies
- With freed-up nursing staff, SNF pursued additional higher-acuity patients from referral sources
- Grew average daily census by 15 patients with same number of treatment nurses

Census Increase = 15 patients/ day	profit/patient = $54/day	Additional profit = $297,690
Treatment nurse time savings = 20 hours/week	Nurse wage = $22/hour	Time savings = $22,800/yr.

Case Study: Reduced WC Costs

- Fewer wounds, led to less spending on wound care
- Based on treatment cost per wound per day:
  - Stage I $24/day
  - Stage II $47/day
  - Stage III $99/day
  - Stage IV $175/day
  - DTI/Other $50/day
- Estimated annual cost of care reduced >$75k in less than 6 months

Estimated Annualized Cost of Pressure Ulcers
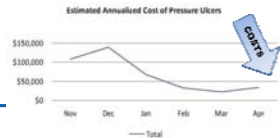
Reducing Risk: Study Facility Experience

- Significant improvement in risk profile within six months:
- <5 facility acquired PU per month
- No fines or citations
- Favorable state surveys

"Effective pressure ulcer prevention and treatment is the only way nursing homes can hope to defend against legal and regulatory liability associated with poor pressure ulcer outcomes"

National Nursing Home Improvement Collaborative: Pressure Ulcer Prevention and Treatment Handbook

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DK3

Reduced Re-Hospitalizations

Rate of re-hospitalization w/in 30 days—all residents
- All facilities: 26%
- Study facility: 20%

Rate of re-hospitalization—Residents w/Stage III or IV Pressure injury
- All facilities: 32%
- Study facility: 20%

Rate of re-hospitalization—Residents w/Unstagable or Suspected DTI
- All facilities: 43%
- Study facility: 17%

Recapture $60,000 lost Revenue

Re-hospitalization rates

Reducing quantity and severity of wounds reduces re-hospitalizations

26% ─ Avg.
20% ─ △23% less
Best Practices with wound management automation

Study Facility

30-day re-hospitalization rate was reduced to 20% after adoption of automated wound management solution

Recaptured revenue @100 bed SNF =

$60,000/year

Key Financial Drivers:
- The average rehospitalization rate was 26% across all facilities
- The study facility had a 20% rehospitalization rate, a decrease of 23%
- Average revenue per bed = $250 day (skilled + non-skilled)
- Average bed turnover is 4 times per year
- Average loss of revenue for a rehospitalization = 10 days

Objectives

Technology-Enabled Services for Improved Patient Care

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Slide 52

DK3   Hopefully TEH will have slides for the last 2 objectives. If not, we have this slide on WR experience
Debra Kurtz, 8/4/2017

Slide 54

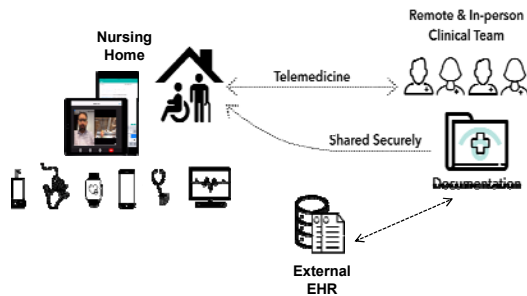**DK4**   Hopefully TEH will cover this topic
Debra Kurtz, 8/4/2017

Overview

Technology:
Apps that work on any device: documentation, secure text messaging, and telehealth

REMOTE MEDICAL TEAM

Services:
24/7 medical coverage, wound care, and other specialty teams via remote consultation and in-person visits

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Tech-enabled Medical Services: Workflow

Nursing Home

Telemedicine

Remote & In-person Clinical Team

Shared Securely

Documentation

External EHR

Tech-enabled Medical Services: Impact

Improve care quality by reducing acute transfers & readmissions and expediting when necessary

Nursing Home

Acute Hospital

- Improve resident care, safety
- Retain lost revenue
- Grow census & hospital referrals
- Improve compliance
- Nursing staff support/ retention
- Reduce legal & regulatory costs
- Resident/family satisfaction

- Reduce non-reimbursed readmissions
- Avoid penalties
- Improve patient care by reducing time-and-cost for crucial therapies
- Improve compliance
- Patient/ staff satisfaction

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Financial Impact on SNFs

1 inappropriate transfer cost a facility

$2,486 per month

✓Lost revenue due to bed hold: $1,412 per patient*
✓Transportation costs: $350 per patient
✓Cost of non-return: $706 per patient**

*Assumes blended Medicare/ Medicaid rate & 4 days away
**Assumes 20% of residents do not return and lose 10 days before bed filled

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Outcomes: 2 Multi-site SNF organizations

1. Texas

- o 6 months of data
- o 17 buildings
- o 65% reduction in overall readmission rates
- o 96% of consults led to avoidance of transfer
- o 25% reduction in transfers/discharges
- o 24% retained revenue savings

Outcomes: 2 Multi-site SNF organizations

2. Illinois

- o 3 months of data
- o 1 building
- o 42% reduction in hospitalization days
- o 25% increase in referrals to facility
- o Census increase of 8 / $365k annualized additional revenue

Findings on Technology in Wound Care

Clinical

- Improved monitoring and tracking of wound status over time improves quality
- Reduction in facility-acquired pressure injuries
- Consistent, accurate documentation based on clinically validated practices
- Digital images allow visual monitoring of wounds

Nursing Time and Workflow

- Automated charting and reporting saves time & money

Risk

- Complete, accurate documentation minimizes risk

Financial Return on Investment

- Lower WC costs, increased patient census, and increased revenue drive ROI

Findings on Technology in Wound Care

- Chronic wounds affect 6.5 million people in the U.S. every year, but only 1 out of every 500 nurses is board-certified in wounds.
- Providers like nursing homes many times do not have a board-certified wound nurse on staff. Most nurses and physical therapists do not have deep experience or knowledge of the latest evidence-based best treatments for wounds.
- By using our virtual wound care services, wound nurses work virtually with the on-site nurses and physical therapists to assist them in properly identifying the type of wound and recommending the best plan to treat the wound along with the appropriate type of wound dressing.

Technology in Wound Care

The utilization of telemedicine will offer clinical and financial incentives for wound clinics as the U.S. healthcare system continues its transition. [1]

- The Wound, Ostomy and Continence Nursing Certification Board and American Board of Wound Management, organizations that certify wound care specialists, currently report a collective estimate of less than 15,000 certified specialists nationwide available to manage more than 6.5 million chronic wounds.[1, 3-5]
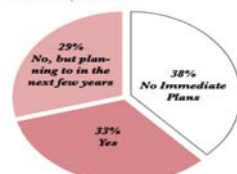
Technology in Wound Care

- *Centers for Medicare & Medicaid Services (CMS) Policy:*[5] "Telemedicine seeks to improve a patient's health by permitting two-way, real-time interactive communication between the patient and the physician or practitioner at the distant site. This electronic communication means the use of interactive telecommunications equipment that includes, at a minimum, audio and video equipment."

Technology in Wound Care

- *Code of Federal Regulations:*[10] "Telemedicine is viewed as a cost-effective alternative to the more traditional face-to-face way of providing medical care (e.g., face-to-face consultations or examinations between provider and patient) that states can choose to cover under Medicaid. This definition is modeled on Medicare's definition of telehealth services."

Closing Thoughts

1. Improving wound care is a quality initiative, not an information technology initiative
2. It takes leadership to change behavior -- and persistence to change culture
3. Technology can transform the way we do work and enable continuous improvement in cost, quality and outcomes

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References

(1) Today's WoundClinic. Telemedicine Solutions for Chronic Wound Management: Bridging the Gap Between Wound Expert Supply & Demand. Issue Number: Volume 11 Issue 5 - May 2017. Author(s): Myra Varnado, BS, RN, CWOCN, CFCN; et al

(2) Certification Statistics. ABWM. Accessed online: ww.abwmcertified.org/about-us/certification-statistics

(3) Exam. WOCNCB. Accessed online: www.wocncb.org/recertification/exam

(4) Carlson T, Collins L. A long-distance relationship that works: exploring telemedicine in wound care. *TWC*. 2009;3(3):25-6.

(5) Telehealth. Centers for Medicare & Medicaid Services. Accessed online: www.cms.gov/medicare/medicare-general-information/telehealth/index.html

(10) 42 CFR 410.78 – Telehealth Services. U.S. Government Publishing Office. Accessed online: www.gpo.gov/fdsys/granule/CFR-2011-title42-vol2/CFR-2011-title42-vol2-se...

Additional Resources

- Baranoski, Sharon, and Elizabeth A. Ayello. *Wound Care Essentials: Practice Principles.* Philadelphia: Lippincott Williams & Wilkins, 2004.
- Bryant, Ruth A., and Denise P. Nix. *Acute & Chronic Wounds: Current Management Concepts.* St. Louis, MO: Elsevier/Mosby, 2012.
- National Pressure Ulcer Advisory Panel and European Pressure Ulcer Advisory Panel. *Pressure Ulcer Prevention and Management-Quick Reference Guide.* 2009.
- The Happy Death of Telemedicine By Bill Gordon July 7, 2017; Telemedicine Magazine
- Sheffield, Paul J., Caroline Fife, and Adrianne P. S. Smith. Wound Care Practice. Flagstaff, AZ: Best Pub., 2004.
- Wound Ostomy and Continence Nurses Society. Guideline for Prevention and Management of Pressure Ulcers. Mount Laurel, NJ: 2010.
- Less Than 1 Percent of Nurses Are Wound Experts. This Telehealth App Helps Close That Gap. August 2, 2017 by Muriel Vega. Hypepotamus.

Additional Resources

- Agency for Healthcare Research and Quality www.ahrq.org
- American Diabetes Association* www.diabetes.org
- American Physical Therapy Association*www.apta.org
- Association for the Advancement of Wound Care (AAWC) www.aawconline.org
- Dermatology Nurses Association* www.dnanurse.org
- National Association for Continence (Formerly HIP)* www.nafc.org
- National Pressure Ulcer Advisory Panel (NPUAP) www.npuap.org
- Wound Ostomy and Continence Nurses Society www.wocn.org

Questions?

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