**CORRECTED COPY**

**Department of Veterans Affairs** **VHA HANDBOOK 1180.02**
**Veterans Health Administration** **Transmittal Sheet**
**Washington, DC 20420** **July 1, 2011**

# PREVENTION OF PRESSURE ULCERS

**1. REASONS FOR ISSUE.** This Veterans Health Administration (VHA) Handbook provides comprehensive procedures for the assessment and prevention of pressure ulcers.

**2. SUMMARY OF MAJOR CHANGES.** This new Handbook has relevance to all clinical care settings including Acute Care, Inpatient Mental Health, Spinal Cord Injury Centers, Community Living Centers, Home-Based Primary Care, and Outpatient Primary Care. It establishes procedures for assessment and prevention of pressure ulcers in VHA.

**3. RELATED ISSUES.** VHA Directive 1180.

**4. RESPONSIBLE OFFICE.** The Office of Nursing Services (10A1) in collaboration with Patient Care Services (10P4) is responsible for the contents of this VHA Handbook. Questions may be referred to 202-461-6700.

**5. RESCISSIONS.** VHA Handbook 1180.2, dated June 29, 2006, is rescinded.

**6. RECERTIFICATION.** This VHA Handbook is scheduled for recertification on or before the last working day of July 2016.

Robert A. Petzel, M.D.
Under Secretary for Health

DISTRIBUTION: E-mailed to the VHA Publications Distribution List 7/5/2011

## CONTENTS

## PREVENTION OF PRESSURE ULCERS

**PARAGRAPH** **PAGE**

**CONTENTS Continued**

**PARAGRAPH** **PAGE**



**APPENDICES**

# PREVENTION OF PRESSURE ULCERS

## 1. PURPOSE

This Veterans Health Administration (VHA) Handbook provides guidance for preventing pressure ulcers in all clinical settings. A comprehensive assessment is essential to effective pressure ulcer prevention programs and includes: (1) examination of the skin and (2) determination of the Veteran's risk for pressure ulcer formation. This is relevant to all clinical care settings: Acute Care, Inpatient Mental Health, Spinal Cord Injury (SCI) Centers, Community Living Centers (CLC), Home-Based Primary Care (HBPC) and Outpatient Primary Care.

## 2. BACKGROUND

a. Pressure ulcers are a cause of significant morbidity and mortality among hospitalized, institutionalized, and mobility-compromised individuals (see subpar. 21g). An important indicator of patient safety, pressure ulcer incidence rates and prevalence are now included in many performance measure sets. Pressure ulcer prevention across the continuum of care is a priority for VHA, the largest integrated health care delivery system in the United States. Most pressure ulcers are avoidable; however, unavoidable pressure ulcers may develop and existing ulcers may worsen despite appropriate care in certain high-risk individuals (see subpar. 21d).

b. According to the European Pressure Ulcer Advisory Panel (EPUAP) and the National Pressure Ulcer Advisory Panel (NPUAP), unavoidable means that the individual developed a pressure ulcer even though the provider had evaluated the individual's clinical condition and pressure ulcer risk factors; defined and implemented interventions that are consistent with individual needs, goals, and recognized standards of practice; monitored and evaluated the impact of the interventions; and revised the approaches as appropriate. Situations or conditions in which pressure ulcers may be unavoidable include, but are not limited to the following (see subpar. 21d):

(1) Pathophysiologic conditions such as hemodynamic instability made worse by turning or local tissue hypoperfusion occurring concurrent with severe dysfunction or failure of other organ systems resulting in "skin failure."

(2) Personal decisions including advance directives prohibiting use of artificial nutrition and/or voluntary refusal to eat.

(3) Personal decisions involving refusal of repositioning or self-positioning on high-risk areas despite education.

## 3. DEFINITIONS

a. **Braden Scale for Predicting Pressure Sore Risk (Braden Scale).** The Braden Scale is a clinically reliable and valid tool utilized by health care personnel to score or predict an

individual's level of risk for developing pressure ulcers. The Braden Scale assesses six risk domains: sensory perception, moisture, activity, mobility, nutrition, and friction and shear.

b. **Care Area Assessment (CAA).** The Resident Assessment Instrument (RAI) consists of two basic components: the Minimum Data Set (MDS) 3.0 and the CAA process. The MDS identifies actual or potential problem areas, CAAs provide assistance for further assessment of "triggered" areas by guiding staff to look for causal or confounding factors (some of which may be reversible) for certain presenting conditions or issues.

c. **Change in Medical Condition.** A change in medical condition is defined as any one of the following:

(1) Decrease in mobility;

(2) Decrease in activity;

(3) Development of incontinence;

(4) Immobility due to surgery or other procedure;

(5) Change in mental status; and

(6) Gross physiological change (e.g., from stable to unstable).

d. **Complete Skin Assessment.** The complete skin assessment is the analysis of data obtained from the skin inspection, administration of a risk prediction tool, (usually Braden Scale) and other contributing factors that place the Veteran at risk for development of pressure ulcers.

e. **Friction.** Friction is the mechanical force exerted on skin that is dragged across any surface.

f. **Interprofessional Committee.** The Interprofessional Committee establishes, implements, and monitors the facility's pressure ulcer prevention program using this Handbook as a guide. The Committee consists of representatives from multiple clinical disciplines across the continuum of care to include: Certified Wound Care Specialist (who may serve as chair), providers (physician, advanced practice registered nurse, and physician assistant), nursing staff (registered nurse), Dietitian, Physical Medicine and Rehabilitation Therapist, SCI Therapist, Pharmacist, and representatives of other services (e.g., Social Worker, Clinical Applications Coordinator (CAC), and logistics personnel) who may be involved.

g. **Medical Device-Related Pressure Ulcer.** A medical device-related pressure ulcer is a localized injury to the skin or underlying tissue as a result of sustained pressure from a device (e.g., nasal cannulae tubing, braces, splints, oxygen face masks, prostheses, etc.). As heat and humidity develop between a device and the skin, the microclimate becomes altered resulting in excess moisture and increased pressure ulcer risk. Additionally, medical devices typically obscure the skin from visualization further increasing risk.

h. **Medicare Prospective Payment Assessment Form (MPAF).** The MPAF is a shortened assessment form designed to reduce the burden of completing the full MDS assessment for short-stay admissions to CLCs. The MPAF contains the items necessary for resident identification, Resource Utilization Groups (RUG) Classification, and quality indicator calculations.

i. **Minimum Data Set (MDS).** The MDS is a core set of screening, clinical, and functional status elements, including common definitions and coding categories that form the foundation of the comprehensive assessment for all residents of Community Living Centers (CLC).

j. **Pressure Ulcer.** A pressure ulcer is localized injury to the skin or underlying tissue usually over a bony prominence, because of pressure, or pressure in combination with shear and/or friction. A number of contributing or confounding factors may be associated with pressure ulcers; the significance of these factors is yet to be explained.

k. **Unavoidable Pressure Ulcer.** An unavoidable pressure ulcer is a pressure ulcer that develops even though the clinician has evaluated the individual's clinical condition and pressure ulcer risk factors; defined and implemented interventions that are consistent with individual needs goals and recognized standards of practice; monitored and evaluated the impact of the interventions; and revised the approaches as appropriate.

l. **Moisture Associated Skin Damage.** Moisture associated skin damage is irritation and/or erosion of skin caused by excessive moisture (e.g., perspiration and weeping edema) and/or irritants in urine and feces.

m. **Mucosal Pressure Ulcer.** A mucosal pressure ulcer is an ulcer that develops on mucous membranes from pressure exerted by a medical device in use at the location of the ulcer. The staging system for pressure ulcers of the skin cannot be used to stage mucosal pressure ulcers because the histology of mucous membrane tissue differs from that of the skin.

n. **Resident Assessment Instrument (RAI).** The designation for the complete resident assessment process, including the comprehensive MDS, CAA, and care planning decisions. The RAI helps CLC staff gather definitive information on a resident's strengths and needs that must be addressed in an individualized care plan. ***NOTE:*** *For further information see http://www.cms.gov/NursingHomeQualityInits/.*

o. **Shearing.** Shearing is the interaction of both gravity and friction against the surface of the skin. Friction is always present when shear force is present. Shear occurs when layers of skin rub against each other or when the skin remains stationary and the underlying tissue moves and stretches and angulates or tears the underlying capillaries and blood vessels causing tissue damage.

p. **Skin Inspection.** Skin inspection includes visual inspection of all skin and palpation over high-risk areas (e.g., bony prominences, under medical devices as feasible, etc) to identify erythema, warmth, bogginess, and induration.

q. **VA Nursing Outcomes Database (VANOD).** The VANOD is a nursing database that includes information about skin risk nursing processes and patient outcomes by facility and Veterans Integrated Services Network (VISN). Currently, information is available for the acute care setting. This database is accessed at http://vssc.med.va.gov/.

r. **Certified Wound Care Specialist.** A Certified Wound Care Specialist is a clinician (physician, registered nurse, occupational therapist, physical therapist) certified by one of the nationally recognized wound care certification organizations. These organizations are the American Academy of Wound Management, the National Alliance of Wound Care, and the Wound, Ostomy, Continence Nursing Certification Board.

## 4. SCOPE

a. This Handbook identifies basic requirements for interprofessional approaches to pressure ulcer prevention including assessment, reassessment and documentation. These requirements reflect evidenced-based guidelines as listed in paragraph 21. These requirements have relevance in all areas of clinical practice, inclusive though not limited to: acute care, inpatient mental health, SCI centers, CLCs, HBPC, and outpatient primary care. Pressure ulcer assessment, prevention, and monitoring are an interprofessional responsibility. Collaborative assessment and treatment planning with the Veteran and the Veteran's designated family members, surrogates, or authorized decision makers is essential and needs to accommodate wishes and facility resources.

b. This Handbook is designed to:

(1) Assisting the facility Interprofessional Committee in developing a system-wide program for identifying Veterans at risk of developing pressure ulcers and the specific factors placing them at risk.

(2) Outlining a standardized approach for the complete skin assessment by:

(a) Conducting a skin inspection; and

(b) Using a validated pressure ulcer risk scale (e.g., Braden Scale) to target prevention measures.

(3) Providing procedures for documenting the results of the complete skin assessment, including the individualized care plan.

## 5. RESPONSIBILITIES OF THE OFFICE OF NURSING SERVICES

The Office of Nursing Services, VHA Central Office is responsible for:

a. Reporting acute care nursing-sensitive outcome indicators at VHA, VISN, facility, and patient care level.

b. Facilitating wound care certification of registered nurses.

c. Ensuring nursing personnel are aware of nationally-published guidelines for treatment of pressure ulcers (see subpar. 21g).

## 6. RESPONSIBILITIES OF THE VHA OFFICE OF PATIENT CARE SERVICES

The Office of Patient Care Services, VHA Central Office is responsible for:

a. Supporting an interprofessional approach to the assessment, reassessment, prevention, and documentation of pressure ulcers; and

b. Reporting outcome indicators at VHA, VISN, facility, and resident care level.

## 7. RESPONSIBILITIES OF THE MEDICAL FACILITY DIRECTOR

The medical facility Director, or designee, is responsible for ensuring the writing and implementing of a Pressure Ulcer Prevention policy that covers Medical Acute Care, Inpatient Mental Health, SCI Center, CLCs, HBPC, and Outpatient Primary Care, as applicable. The policy must stipulate that:

a. An Interprofessional Pressure Ulcer Committee is established and sustained to develop, implement, monitor, and evaluate the Pressure Ulcer Prevention Program;

b. A certified Wound Care Specialist (registered nurse, physician, physical therapist, occupational therapist, physician assistant, or podiatrist) is a member of the Interprofessional Pressure Ulcer Committee;

c. All Veterans receive screening, assessment, and intervention to maintain or restore skin integrity; and

d. Program data are routinely reported to facility executive leadership.

e. There is a standardized approach for screening, assessment, and prevention of pressure ulcers in clinically relevant areas.

## 8. RESPONSIBILITIES OF THE INTERPROFESSIONAL PRESSURE ULCER COMMITTEE

Using this Handbook, the Interprofessional Pressure Ulcer Committee is responsible for developing, implementing, monitoring, and evaluating a program for pressure ulcer prevention across the continuum of care, including the monitoring of data relevant to pressure ulcer prevention.

## 9. PRESSURE ULCER PREVENTION PROGRAM

The Pressure Ulcer Prevention Program prevents the development of avoidable pressure ulcers by providing procedures to identify Veterans at risk for skin breakdown and to allow timely implementation of preventive measures. This includes:

a. **Complete Skin Assessment.** The foundation of an effective pressure ulcer prevention program is the complete skin assessment. The complete skin assessment includes:

(1) Visualizing and palpating the Veteran's skin (skin inspection);

(2) Completing a Pressure Ulcer Risk Scale (e.g., Braden);

(3) Identifying other factors that place the Veteran at risk for developing pressure ulcers; and

(4) Developing an individualized care plan for prevention of pressure ulcers based on analysis of the above information.

b. **Complete Skin Inspection.** The complete skin inspection identifies alterations in skin integrity; not all alterations are pressure ulcers. Pressure ulcers most commonly occur on the lower body although they may occur anywhere there is sustained pressure, particularly over bony prominences. The most common locations include: the sacrum, heels, ischial tuberosities, and greater trochanters. In addition to overt wounds, the skin inspection may identify signs that deep tissue damage has already occurred and the evolution of additional tissue loss is anticipated (deep tissue injury).

c. **Pressure Ulcer Risk Scale.** A pressure ulcer risk scale identifies risk factors that are modifiable or potentially modifiable by implementing risk factor-specific strategies. Risk factors that cannot be modified or eliminated require acknowledgement. The Braden Scale (see App. A) is to be used to determine risk in all clinical settings, unless otherwise specified.

d. **Other Risk Factors.** Several factors may increase the risk for pressure ulcers. For a more detailed list of these factors see Appendix B.

e. **Educational Plan.** The Pressure Ulcer Prevention Program must include a plan for ongoing education for staff and Veterans and/or the Veteran's designated family members, surrogates, or authorized decision makers.

(1) **Staff Education.** Staff education will include information on how to administer the Pressure Ulcer Risk Scale, how to conduct the complete skin assessment, and how to accurately document findings.

(2) **Veteran Education.** Veteran education will include principles of pressure ulcer development and prevention and include the Veteran and/or the Veteran's designated family members, surrogates, or authorized decision makers.

f. **Interprofessional Approach**

(1) An effective interprofessional approach provides: systematic application of the Pressure Ulcer Risk Scale; implementation of preventive and therapeutic measures; education of the Veteran and/or the Veteran's designated family members, surrogates, or authorized decision makers; documentation of clinical status; and monitoring of incidence and outcomes.

(2) Identification of the Veteran at risk is the first step in prevention followed by the second step, implementation of appropriate individualized interventions identified in the care plan. The third step is monitoring the effectiveness of the interventions. Review and modification of these interventions may be required with change in level of risk.

(3) Staff roles in an interprofessional approach:

(a) Nursing staff assumes a primary role by identifying at-risk Veterans, and initiating and coordinating the plan of care for prevention;

(b) Providers collaborate in the prevention plan;

(c) Dietitians perform nutritional assessments, develop a nutritional care plan, and monitor and evaluate the Veteran's nutritional goals;

(d) Pharmacists assist with analysis of the medication profile, product availability, and parenteral nutrition formulation; and

(e) Rehabilitation and/or SCI staff recommend strategies to improve mobility and the use of protective and pressure-redistributing or relieving devices.

## 10. CARE PLANNING

An interprofessional approach informed by nationally-published guidelines (see subpar. 21g) that develops, implements, and evaluates the plan of care must be used.

a. Those risk factors that increase the Veteran's potential for pressure ulcer development must be identified;

b. Whether and to what extent the risk factor(s) can be modified, stabilized, and/or eliminated must be decided;

c. Nutritional factors to facilitate decreased risk of occurrences and support increased ulcer healing must be assessed. For any Veteran identified as being at high risk for pressure ulcers, a nutritional plan (see App. C) must be developed;

d. The need for pressure redistribution support surfaces or devices by matching a device's potential therapeutic benefit with the Veteran's specific situation (see subpar. 21g) need to be assessed;

e. An interprofessional approach to request specific consultations required for each Veteran, must be used;

f. Educational needs specific to each Veteran's plan of care must be identified; and

g. Using nationally-standardized templates, where available, each Veteran's care plan and progress must be documented, evaluated, and altered, as appropriate.

## 11. EDUCATION

a. A Veteran with a pressure ulcer or at risk for developing a pressure ulcer (see subpar. 14 a-d), along with the Veteran's family members, surrogates, or authorized decision makers, must be appropriately educated so as to enable active participation in prevention and treatment decisions.

b. This education needs to reflect an interprofessional approach to ensure that the Veteran and/or designated family members, surrogates, or authorized decision makers understand the principles of pressure ulcer development and, if able, can participate in pressure ulcer prevention. The interprofessional staff:

(1) Determines desire to learn and ability to comprehend.

(2) Provides education that includes, but is not limited to:

(a) Defining pressure ulcers, explaining risk factors and describing routine skin inspection;

(b) Discussing and/or demonstrating appropriate nutrition, hydration, mobility, position changes, and pressure redistribution and relief, as well as preventive skin care and ulcer management; and

(c) Listing community or hospital resources that can be used to obtain supplies and follow-up care.

(3) Documents responses to instructions.

(4) Includes the Veteran and/or designated family members, surrogates, or authorized decision makers in the prevention and management of pressure ulcers.

(5) Promotes active participation of skin and ulcer care with designated family members, surrogates, or authorized decision makers, as appropriate, for self-care education in discharge planning.

c. Education and/or materials discussed and/or demonstrated reflecting an interprofessional approach and including Veteran and/or designated family members, surrogates, or authorized decision makers responses to education (e.g., understanding, competence in provision of care, and willingness to participate) must be documented by interprofessional staff.

## 12. DOCUMENTATION

a. Document both the pressure ulcer risk score and skin inspection each time they are performed using VHA nationally-standardized templates, as available.

b. The documentation must be:

(1) Clear,

(2) Concise, and

(3) Expressed in consistent language.

c. Upon identification of a pressure ulcer, the following must be documented:

(1) Location;

(2) Stage (unless unstageable, suspected deep tissue injury, or mucosal pressure ulcer) (see subpar. 21g); ***NOTE:*** *Determination of stage cannot be made until the ulcer is free of necrotic tissue and the deepest anatomic layer is visible.*

(3) Size (centimeter (cm)) including length, width, and depth;

(4) Wound Characteristics:

(a) Undermining, tunneling, sinus tract.

(b) Wound bed, is it:

1. Necrotic tissue, either:

a. Eschar, or

b. Slough.

2. Granulation, or

3. Epithelialization.

(c) Drainage.

(d) Pain (per 5th vital sign criteria).

(e) Odor.

(f) Surrounding skin, to include:

1. Erythema,

2. Other discoloration,

3. Induration (hardness),

4. Maceration,

5. Crepitus (crackling, crunchy),

6. Fluctuance (wave-like motion of fluid upon palpation),

7. Edema, and

8. Warmth.

(5) Improvement or deterioration.

(6) Treatment changes.

## 13. NUTRITIONAL RECOMMENDATIONS FOR PREVENTION OF PRESSURE ULCERS

Global expert consensus (EPUAP and NPUAP) support nutritional assessment as part of a comprehensive interprofessional approach to preventing pressure ulcers (see subpar. 21g). Nutritional assessment can identify undernutrition, protein energy malnutrition (PEM), and unintentional weight loss, conditions that can contribute to the development of, or the delay of, healing of pressure ulcers (see subpar. 21f). ***NOTE*****:** *Go to Appendix C for specific nutritional recommendations for pressure ulcer healing.*

a. **Nutrition Referral.** Consider Nutrition Referral for the following circumstances:

(1) Identified as being at risk for pressure ulcers, Braden score less than, or equal to, 18 or a Braden Nutritional sub-score of 1 or 2.

(2) Existing pressure ulcer, with newly discovered pressure ulcer within 24 hours, with worsening of a pre-existing ulcer, or with an ulcer not progressing through the normal stages of wound healing.

(3) Inadequate oral intake as evidenced by:

(a) Nothing by mouth (NPO) status or clear liquid diet for more than 5 days and not anticipated to change, and

(b) Less than 75 percent of food consumed on trays for greater than 3 days.

(4) The Veteran has difficulty chewing or swallowing.

(5) The Veteran has significant weight loss of greater than or equal to 5 percent in 30 days or greater than or equal to 10 percent in the previous 180 days.

b. **Biochemical Data.** Biochemical data includes the following:

(1) **Albumin.** Albumin is a serum protein that is synthesized by the liver. It is an indicator of visceral protein stores. It has a relatively long half-life of approximately 20 days. Because of its large serum pool, a sizable amount of albumin is lost before values drop below acceptable limits. It is a negative acute phase reactant and decreases in the presence of inflammation or infection, as well as in the post-surgical period. Values may also be influenced by critical illness, malnutrition, low-protein intake, hydration status, diarrhea, burns, malabsorption, cancer, edema, hepatic disease, end-stage renal disease. Albumin levels may take 2 to 3 weeks to respond to nutrition intervention.

(2) **Prealbumin.** Prealbumin is a serum protein synthesized in the liver. It is the preferred marker for identifying protein malnutrition and monitoring nutrition intervention. Prealbumin's half-life is 2-3 days and because of its smaller serum-pool, it responds more readily to nutrition intervention. Prealbumin is also less affected by fluid status. Prealbumin, like albumin, is a negative-acute phase reactant and levels may be significantly depressed by inflammation, critical illness, acute stress, hepatic disease, low-protein intake, malnutrition, and surgery.

(3) **C-reactive Protein (CRP).** CRP, an acute-phase protein with a half-life of 48 hours, is synthesized in the liver. Levels rise in the presence of inflammation or infection. CRP levels need to be obtained with prealbumin. An elevated CRP level together with a low prealbumin level indicates that prealbumin is being influenced by non-nutrition related factors. Normal CRP levels indicate that Prealbumin is an accurate indicator of response to nutrition intervention.

***NOTE:*** *Unfortunately, there is no single laboratory value that can specifically determine a Veteran's nutritional status. Serum albumin and prealbumin are better indicators of the severity of illness, morbidity and mortality than of nutritional status. Veterans with low prealbumin or albumin often require aggressive medical nutrition therapy because of their severity of illness. Trending of these laboratory results, monitoring food and fluid intake, and monitoring weight changes are all components of assessing nutritional status.*

c. **Nutritional Recommendations.** A Registered Dietitian (RD) performs a nutritional assessment and provides nutritional recommendations when a Veteran is at risk for developing a pressure ulcer. The American Dietetic Association (ADA) (see subpar. 21a) developed the Nutrition Care Process (NCP), a systematic problem solving method that RDs use to critically think and make decisions in addressing nutrition-related problems and providing safe and effective quality nutrition care. It includes the following steps:

(1) **Nutritional Assessment.** A Nutritional Assessment is a process which involves collecting initial data, verifying the data, and interpreting the data to identify nutrition-related problems, their causes, and their significance. Some examples include estimating calorie, protein, and fluid requirements based on achieving individualized nutritional goals. Whenever

possible, the assessment data are compared to reliable norms and standards for evaluation. Categories of Assessment Data include:

(a) Food and nutrition history;

(b) Biochemical data, medical tests and procedures;

(c) Anthropometric measurements; and

(d) Physical examination findings.

(2) **Nutritional Diagnosis.** Using a standardized language, dietetic professionals identify nutrition problems to improve the consistency and quality of patient care and the predictability of outcomes. There are sixty nutritional diagnoses or problems within three domains: Clinical, Intake, and Behavioral-environmental. The nutritional diagnosis identifies and labels a specific nutritional problem that dietetic professionals are responsible for treating independently. The nutritional diagnosis statement consists of three distinct components: Problem, Etiology, and Signs or Symptoms (PES).

(3) **Nutritional Intervention.** The purpose of nutritional intervention is to resolve or improve the identified nutrition problem by planning and implementing strategies to positively change a nutrition-related behavior, environmental condition, or aspect of health status for an individual, target group, or the community at large that are tailored to the Veteran's needs. Intervention examples include:

(a) Educating about the importance of adequate nutritional and fluid intake;

(b) Discussing and offering high calorie and/or high protein snacks/supplements if current intake is not meeting estimated needs;

(c) Considering alternative means of nutrition support (e.g., enternal feeding) if oral intake remains inadequate or there is no improvement in nutritional status following intervention;

(d) Considering a vitamin-mineral supplement if the Veteran has signs and symptoms of a clinical deficiency or nutritional intake is inadequate; and

(e) Recommending a consult for Speech-Language Therapist or Occupational Therapist if a Veteran is found to have swallowing difficulties or problems self-feeding.

(4) **Nutritional Monitoring and Evaluation.** Nutritional monitoring and evaluation determines the amount of progress made and if goals or expected outcomes are being met. Nutritional monitoring and evaluation identifies outcomes relevant to the nutrition diagnosis, intervention plans, and goals. Nutrition evaluation includes monitoring, measuring, and analyzing outcomes relevant to nutrition diagnosis, treatment plans, and goals. Reliable norms and standards are used whenever possible.

## 14. DETERMINING RISK FOR PRESSURE ULCERS

Determining risk for pressure ulcers is an essential component of the prevention process. Risk determination is based on a combination of clinical judgment, a Veteran's past history, and findings from the Braden Scale. A Veteran is considered at risk for a pressure ulcer if any of the following are true:

a. The Veteran has a pressure ulcer.

b. The Veteran has a history of pressure ulcers(s). A Veteran with a history of prior full-thickness (Stage III or IV) pressure ulcers, or any wound on a pressure bearing surface remains at risk for future skin breakdown due to the reduced tensile (breaking) strength of scar tissue (see subpar. 21c).

c. The Veteran has a Braden Score less than, or equal to, 18 or low on one or more of the six Braden subscales: Sensory Perception, Moisture, Activity, Mobility, Nutrition, or Friction and Shear.

d. The Veteran experiences a change in medical condition including:

(1) Decrease in mobility;

(2) Decrease in activity;

(3) Development of incontinence;

(4) Immobility due to surgery or other procedure;

(5) Change in mental status; and

(6) Gross physiological change (e.g., from stable to unstable).

e. The Veteran and/or chooses not to participate in the preventive plan of care (e.g., voluntary refusal to eat or to be repositioned).

## 15. ACUTE CARE PRESSURE ULCER PREVENTION

Following is the pressure ulcer prevention process for Acute Care (see App. D for Flow Diagram):

a. Upon admission, discharge, transfer, or change in condition, perform a skin inspection and obtain a Braden Scale score (see App. A) for all Veterans. These must be documented within 24 hours. As part of the review of systems, it is important to note whether there is a history of prior pressure ulcers.

b. **If a Veteran (Acute Care) has a pressure ulcer, adhere to the following procedures:**

(1) Document the ulcer stage and description (see subpars. 12c and 12d) using the VANOD standardized assessment templates;

(2) Within 24 hours, initiate or revise the prevention and treatment plans consistent with the Veteran's current condition and nationally-published guidelines (see subpar. 21g). Prevention and treatment plans continue to be revised to be consistent with the Veteran's condition;

(3) Perform and document skin inspection daily (see subpar. 9b, subpar. 12a, and subpar. 12b);

(4) Perform and document the Braden Scale daily (see App A);

(5) Monitor the Veteran daily for a change in condition (see subpar. 14d);

(6) Revise prevention plan, if risk level changes (see subpars. 14a-14d), to be consistent with the Veteran's current condition and nationally-published guidelines (see subpar. 21g), and;

(7) Refer to the Veteran to a Wound Care Specialist, Rehabilitation Service, and Dietitian, where appropriate (see App. C).

c. **If a Veteran (Acute Care) is at risk for a pressure ulcer, but does not have a current pressure ulcer, adhere to the following procedures:**

(1) Within 24 hours of documented risk (see subpar. 14), initiate or revise prevention and/or treatment plan consistent with the Veteran's current condition and nationally published guidelines (see subpar. 21g);

(2) Perform and document skin inspection daily (see subpar. 9b, subpar. 12a, and subpar. 12b);

(3) Perform and document the Braden Scale daily (see App. A);

(4) Monitor the Veteran daily for a change in condition (see subpar. 14d);

(5) If risk level changes (see subpars. 14a-14d), revise prevention plan to be consistent with the Veteran's current condition and nationally-published guidelines (see subpar. 21g); and

(6) Consider referral to Wound Care Specialist, Rehabilitation Service, and Dietitian, where appropriate (see subpar. 13).

d. **If a Veteran (Acute Care) is not at risk for a pressure ulcer, adhere to the following procedures:**

(1) Perform and document skin inspection daily regardless of risk level (see subpar. 9b and subpars. 12a, and 12b);

(2) Monitor the Veteran daily for a change of condition (see subpar. 14d) or a transfer between units or departments (e.g., from the Operating Room to the Recovery Room or from the ICU to the medical step-down unit);

(3) If a change in condition or an intrafacility transfer occurs, perform and document a Braden Scale and skin inspection; and

(4) If risk level changes (see subpars. 14a-14d), initiate prevention plan consistent with the Veteran's current condition and nationally-published guidelines (see subpar. 21g).

## 16. INPATIENT MENTAL HEALTH

Procedures for the Inpatient Mental Health (see App. E for Flow Diagram) pressure ulcer prevention process are:

a. Upon admission, discharge, transfer, or change in condition, perform a skin inspection and obtain a Braden Scale score (see App. A) for all Veterans. Document the Braden Scale score and the skin inspection within 24 hours. As part of the review of systems, it is important to note whether there is a history of prior pressure ulcers.

b. If the Veteran is unable to tolerate physical contact, these assessments may be delayed. Document delays in assessment and include the rationale for the delay.

c. **If a Veteran (Inpatient Mental Health) has a pressure ulcer, adhere to the following procedures:**

(1) Document the ulcer stage and description (see subpars. 12c and 12d) using the VANOD standardized assessment templates;

(2) Within 24 hours, initiate or revise prevention and treatment plans consistent with the Veteran's current condition and nationally-published guidelines (see subpar. 21g);

(3) Perform and document skin inspection daily (see subpar. 9b, subpar. 12a, and subpar. 12b);

(4) Perform and document the Braden Scale daily (see App. A);

(5) Monitor the Veteran daily for a change in condition (see subpar. 14d);

(6) If risk level changes (see subpar. 14 a-d), revise prevention plan to be consistent with the Veteran's current condition and informed by nationally published guidelines (see subpar. 21g); and

(7) Refer to the Wound Care Specialist, Rehabilitation Service, and Dietitian, where appropriate (see App. C).

d. **If a Veteran (Inpatient Mental Health) is at risk for a pressure ulcer, but does not have a current pressure ulcer, adhere to the following procedures:**

(1) Within 24 hours of documented risk (see par. 14), initiate or revise prevention and/or treatment plan consistent with the Veteran's current condition and nationally-published guidelines (see subpar. 21g);

(2) Perform and document skin inspection daily (see subpar. 9b, subpar. 12a, and subpar. 12b);

(3) Perform and document the Braden Scale daily (see App. A);

(4) Monitor the Veteran daily for a change in condition (see subpar. 14d);

(5) If risk level changes (see subpars. 14a-14d), revise prevention plan to be consistent with the Veteran's current condition and informed by nationally published guidelines (see subpar. 21g); and

(6) Consider referral to a Wound Care Specialist, Rehabilitation Service, and Dietitian, where appropriate (see par. 13).

e. **If a Veteran (Inpatient Mental Health) is not at risk for a pressure ulcer, adhere to the following procedures:**

(1) Perform and document the Braden Scale at least weekly (see App. A);

(2) Monitor the Veteran daily for a change in condition (see subpar. 14d) or a transfer between units or departments (e.g., from the Operating Room to the Recovery Room or from the ICU to the medical step-down unit); and

(3) If risk level changes (see subpars. 14a-14d), revise prevention plan to be consistent with the Veteran's current condition and informed by nationally published guidelines (see subpar. 21g).

## 17. SPINAL CORD INJURY AND DISORDERS (SCI/D) CENTER

The pressure ulcer prevention process for SCI/D (see App. F for Flow Diagram) follows:

a. Upon admission, discharge, transfer, or change in condition, perform a skin inspection and obtain a score from the Braden Scale or from a pressure ulcer risk scale that has been validated in people with SCI/D. These must be documented within 24 hours (see subpar. 12b). As part of the review of systems, it is important to note whether there is a history of prior pressure ulcers.

b. **Pressure Ulcer Risk Scale.** The Braden Scale is currently used in SCI Centers, but may lack the sensitivity to stratify SCI/D Veterans; therefore, some SCI Centers may choose to use other SCI-specific validated pressure ulcer risk scales. If so, the SCI Center team, in collaboration with the local Interprofessional Pressure Ulcer Committee and content experts, need to choose the alternative scale. Whichever pressure ulcer risk scale is used, the same scale needs to be used for all Veterans in the SCI Center.

(1) Initiate appropriate interventions based on the level of risk. For all Veterans with a new SCI/D, the pressure ulcer risk scale must be performed daily.

(2) For Veterans with long-standing injuries, because most risk factors are relatively stable over time and length of stay in the SCI Center may be lengthy, the pressure ulcer risk scale must be performed daily for the first week and then weekly until discharge, transfer, or change in condition.

(3) Include involvement of Veteran and/or designated family members, surrogates, or authorized decision makers in this process.

c. **Skin Inspection.** Severe pressure ulcers are common in this SCI/D population. Careful, frequent inspection and palpation are vital for early detection of pressure ulcers that begin at the bone-muscle interface. In addition to the usual sites, common areas of increased risk include:

(1) Elbows due to frequent weight-bearing from support or propping up of body during mobility;

(2) Occiput, especially in the acute period when a Veteran may be immobilized in a spine orthosis; and

(3) Knees, particularly when the Veteran lies in a prone position (especially if hip flexion contractures are present).

d. **Factors That Increase Risk.** Other factors that increase risk and need to be noted during the skin inspection:

(1) Dry skin below the level of neurologic injury is common.

(2) Sweating from autonomic dysreflexia is more common above the level of injury; however, in some cases hyperhydrosis may occur below the level of SCI predisposing maceration and skin breakdown.

(3) Neurogenic bladder and bowel increase the risk for incontinence. Note any skin that is damaged from contact with urine and/or stool. Although the skin damage from incontinence alone is not a pressure ulcer, any weakness of the skin increases the risk;

(4) Spasticity is a common cause of skin breakdown due to shearing and frictional forces. In addition, ulcerations and hard calluses may increase spasticity and a significant increase in spasticity needs to trigger a thorough search for the cause.

(5) Poor posture, long periods spent on bowel or shower chairs (during bowel care) and inadequate offloading from a wheelchair cushion are frequent causes of pressure ulcers. Pressure mapping, seating assessment, and equipment evaluation are vital components of a comprehensive prevention program.

e. **Education.** Teach Veterans and/or designated family members, surrogates, or authorized decision makers how to perform regular (daily) skin inspection. Provide a long-handled mirror to each Veteran with adequate upper limb and hand function. The necessity to identify and remove the cause of early breakdown cannot be overstated. Prevention of deeper ulcers may require decreasing or stopping outside activities until healed.

f. **If a Veteran (SCI/D) has a pressure ulcer, adhere to the following procedures:**

(1) Document the ulcer stage and description (see subpars. 12c and 12d) using the VANOD standardized assessment templates, if applicable, or the local facility's assessment tool.

(2) Within 24 hours, initiate or revise prevention and treatment plans consistent with the Veteran's current condition and nationally-published guidelines (see subpar. 21g). Continue to revise prevention and treatment plans consistent with the Veteran's condition.

(3) Perform and document skin inspection daily (see subpar. 9b. subpar. 12a, and subpar. 12b).

(4) For Veterans with a new SCI/D, perform the pressure ulcer risk scale daily. For Veterans with longstanding SCI/D, perform and document the pressure ulcer risk scale daily for the first week after admission and then at least weekly.

(5) Monitor the Veteran daily for a change in condition (see subpar. 14d).

(6) If risk level changes (see subpars. 14a-14d), revise prevention plan to be consistent with the Veteran's current condition and nationally-published guidelines (see subpar. 21g).

(7) Refer to Wound Care Specialist, Rehabilitation Therapist, and Dietitian where appropriate (see App. C).

g. **If Veteran (SCI/D) is at risk for a pressure ulcer, but does not have a current ulcer, adhere to the following procedures:**

(1) Within 24 hours of documented risk, initiate or revise prevention and/or treatment plan consistent with the Veteran's current condition and nationally-published guidelines (see subpar. 21g);

(2) Perform and document skin inspection daily (see subpar. 9c and subpar. 12a, b);

(3) For Veterans with a new SCI/D who are at risk for a pressure ulcer, perform and document a pressure ulcer risk scale daily. For Veterans with longstanding SCI/D, perform and

document a pressure ulcer risk scale daily for the first week after admission and then at least weekly;

(4) Monitor the Veteran daily for a change in condition (see subpar. 14d);

(5) If risk level changes (see subpar 14. a-d), revise prevention plan to be consistent with the Veteran's current condition and informed by nationally published guidelines (see subpar. 21g); and

(6) Consider referral to Wound Care Specialist, Rehabilitation, and Dietitian where appropriate (see par. 13).

h. **If a Veteran is not at risk for a pressure ulcer, adhere to the following procedures:**

(1) Perform and document skin inspection daily regardless of risk level (see subpar. 9b, subpar. 12a, and subpar. 12b);

(2) Monitor the Veteran daily for a change in condition (see subpar. 14d) or a transfer between units or departments (e.g., from the Operating Room to the Recovery Room or from the Intensive Care Unit (ICU) to the medical step-down unit);

(3) If a change in condition or an intrafacility transfer occurs, perform and document a Pressure Ulcer Risk Scale and skin inspection; and

(4) If risk level changes (see subpar. 14a-14d), initiate prevention plan consistent with the Veteran's current condition and nationally published guidelines (see subpar. 21g).

## 18. COMMUNITY LIVING CENTER (CLC)

The pressure ulcer prevention process for CLCs is consistent with the MDS regulations for pressure ulcer prevention (see App. G for Summary Table); adhere to the following procedures:

a. Upon admission to the CLC, perform and document a skin inspection and obtain a Braden Scale Score on all Veterans within 24 hours. As part of the review of systems, it is important to note whether there is a history of prior pressure ulcers.

b. During the first 4 weeks after admission, perform and document skin inspections (during care activities) at least weekly and perform and document the Braden Scale weekly (see App. A).

c. Starting with the 5th week after admission, perform and document skin inspections (during care activities) at least weekly and perform and document the Braden Scale monthly.

d. A change in functional status signals that an increased attention should be paid to the risk for pressure ulcers. Upon noting a change in functional status, the RAI MDS must be completed.

e. A significant change in functional status is a decline or improvement in a resident's status that:

(1) Will not normally resolve itself without intervention by staff or by implementing standard disease-related clinical interventions and is not self-limiting (for declines only),

(2) Impacts more than one area of the resident's health status, and

(3) Requires interprofessional review and/or revision of the care plan.

f. Areas of decline may include:

(1) Changes in resident's decision-making abilities.

(2) Presence of a resident mood item not previously reported by the resident or staff and/or an increase in the symptom frequency (Patient Health Questionnaire(PHQ-9©)); increase in the number of areas where Behavioral Symptoms are coded as "being present" and/or the frequency of symptom(s) increases for items in MDS, Section E (behavior) (see subpar. 3n);

(3) Any decline in an Activities of Daily Living (ADL) physical functioning area where a resident is newly coded as "extensive assistance," "total dependence," or "activity did not occur since last assessment."

(4) Change in resident's incontinence pattern or placement of an indwelling catheter.

(5) Emergence of unplanned weight loss problem (5 percent change in 30 days or 10 percent change in 180 days).

(6) Emergence of a new pressure ulcer at Stage II or higher, or worsening in pressure ulcer status.

(7) Initiation of trunk restraint or a chair that prevents rising when it was not used before.

(8) Overall deterioration of resident's condition.

g. Areas of improvement may include:

(1) Any improvement in an ADL physical functioning area where a resident is newly coded as "Independent," "Supervision," or "Limited Assistance" since last assessment;

(2) Decrease in the number of areas where Behavioral Symptoms are coded as being present and/or the frequency of a symptom decreases;

(3) Improvement in resident's decision-making abilities; and

(4) Improvement in resident's incontinence pattern.

h. **<u>If a Veteran has a pressure ulcer, adhere to the following procedures:</u>**

(1) Document the ulcer stage and description (see subpars. 12c and 12d);

(2) Initiate and document (see subpars. 12c and 12d) an interim plan of care consistent with the Veteran's current condition and nationally-published guidelines (see subpar. 21g);

(3) If the pressure ulcer is present when the interprofessional care team meets, the team will discuss with Veteran and/or designated family members, surrogates, or authorized decision makers and document on the interprofessional care plan, a pressure ulcer care plan that is consistent with nationally-published guidelines (see subpar. 21g);

(4) Skin Assessments should continue at least weekly (during care activities);

(5) Complete the Braden Scale weekly for the first 4 weeks after admission;

(6) Starting with week 5, complete the Braden Scale monthly; and

(7) Review and update interprofessional care plan as needed to reflect resident's current status.

i. **If Veteran (CLC)is at risk for a pressure ulcer, adhere to the following procedures:**

(1) If the Veteran is at risk for development of a pressure ulcer based on the Braden Scale, previous history of a pressure ulcer, clinical judgment, or findings from the RAI MDS, document a prevention plan in the resident's interim care plan;

(2) When the interprofessional care team meets, the team discusses with Veteran and/or designated family members, surrogates, or authorized decision makers and documents on the interprofessional care plan, a pressure ulcer prevention plan that consistent with nationally-published guidelines (see subpar. 21g);

(3) Skin Assessments should continue at least weekly (during care activities);

(4) Complete the Braden Scale weekly for the first 4 weeks after admission;

(5) Starting with week 5, complete the Braden Scale monthly; and

(6) Review and update interprofessional care plan, as needed, to reflect resident's current risk status.

## 19. HOME-BASED PRIMARY CARE (HBPC)

Procedures for the pressure ulcer prevention process for Home-Based Primary Care are as follows:

a. During the first nurse visit, perform a skin inspection (see subpar. 9b) and the Braden Scale (see App. A) for Veterans admitted to HBPC. As part of the review of systems, it is important to note whether there is a history of prior pressure ulcers.

b. **<u>If Veteran ( HBPC) has been hospitalized or experiences a change in condition,</u>** perform a skin inspection and Braden Scale whenever a Veteran returns home following a hospitalization, or if there is a significant deterioration in the Veteran's functional status, especially mobility.

c. **<u>If a Veteran (HBPC) has a pressure ulcer, adhere to the following procedures:</u>**

(1) Document the ulcer stage and description (see subpars 12c and 12d) using the VANOD standardized assessment templates, if applicable, or a local facility assessment tool.

(2) Initiate and document, with Veteran and/or designated family members, surrogates, or authorized decision makers, an interprofessional plan of care consistent with the Veteran's current condition and nationally-published guidelines (see subpar. 21g).

(3) Provide pressure ulcer prevention education and informational materials to the Veteran and/or designated family members, surrogates, or authorized decision makers.

(4) Perform and document a reassessment of the pressure ulcer, Braden Scale, and skin inspection (see subpar. 9b) at every visit, as determined by the interprofessional team in collaboration with any contracted home care agency until ulcer is healed. ***NOTE:*** *SCI/D Veterans can be assessed using either the Braden Scale or a risk assessment instrument validated for individuals with a spinal cord injury.* Significant pressure ulcer changes, along with new treatment recommendations, need to be documented in the medical record by nursing or medical staff. The plan of care is to be updated at least every 90 days.

d. **<u>If a Veteran (HBPC) is at risk, but does not have a current ulcer, adhere to the following procedures:</u>**

(1) Initiate and document, with Veteran and/or designated family members, surrogates, or authorized decision makers, an interprofessional pressure ulcer prevention plan of care consistent with the Veteran's current condition and nationally-published guidelines (see subpar. 21g);

(2) Provide pressure ulcer prevention education and informational materials to Veteran and/or designated family members, surrogates, or authorized decision makers; and

(3) Perform skin inspection (see subpar. 9b) and Braden Scale monthly or with each visit (if time between visits is greater than 1 month). ***NOTE:*** *SCI/D Veterans can be assessed using either the Braden Scale or a risk assessment instrument validated for individuals with a spinal cord injury.* Update the interprofessional care plan as needed or at least every 90 days.

e. **<u>If a Veteran (HBPC) is not at risk for a pressure ulcer,</u>** then perform skin inspection (see subpar. 9b) and Braden Scale* every 90 days. ***NOTE:*** *SCI/D Veterans can be assessed using either the Braden Scale or a risk assessment instrument validated for individuals with a spinal cord injury.* Update the interprofessional plan of care at least every 90 days.

## 20. OUTPATIENT PRIMARY CARE

Procedures for the pressure ulcer prevention process for Outpatient Primary Care are as follows:

a. Although there is considerable research devoted to assessment and prevention of pressure ulcers within the acute care and long-term care settings, there is limited research focusing on identifying risk factors for developing pressure ulcers in outpatients (see subpar. 21b). Many medical conditions may be associated with the development of pressure ulcers in Veterans receiving care in outpatient settings; the primary risk factors for pressure ulcers are immobility and limited activity levels (see subpar. 21h). Therefore, Veterans with impaired ability to reposition themselves or those whose activity is limited to bed or any type of chair need to be considered at risk for a pressure ulcer (see subpar. 21e).

b. As part of the annual outpatient primary care medical evaluation, Veterans are to be screened for active pressure ulcers, history of pressure ulcers, and identification of a bed-confined or wheelchair user status. Screening of Veterans in the Ambulatory setting may be accomplished using the following, or similar, questions or observations (see subpar. 21e).

(1) Does the Veteran and/or designated family members, surrogates, or authorized decision makers report a history of pressure ulcers or current pressure ulcer(s)?

(2) Does the Veteran and/or designated family members, surrogates, or authorized decision makers report a history of pressure ulcers or current pressure ulcer(s) related to a medical device (e.g., artificial limb, braces, splint, implanted pump, automatic implanted cardioverter-defibrillator, oxygen tubing, Foley or condom catheter, tracheostomy, feeding tube, etc.)?

(3) Is the Veteran bed-confined or a wheelchair-user?

(4) Does the Veteran require assistance to transfer or to change position?

c. If the Veteran and/or designated family members, surrogates, or authorized decision makers report any current pressure ulcers, or a history of pressure ulcers, a complete skin assessment needs to be be performed by the provider or appropriate staff. If the Veteran and/or designated family members, surrogates, or authorized decision makers report a pressure ulcer related to a medical device, a focused skin assessment needs to be performed by the provider or appropriate staff. Additionally, the Veteran and/or designated family members, surrogates, or authorized decision makers will receive educational materials about the prevention of pressure ulcers, including the importance of skin inspection under pressure areas, including skin under medical devices (e.g., artificial limb, braces, splint, condom catheter, etc).

d. If the Veteran is bed-confined, a wheelchair user, or requires assistance to transfer or change position, performing a skin assessment needs to be considered, and educational materials provided on the prevention of pressure ulcers.

e. Qualified clinicians need to consider performing a complete skin assessment, if they identify a significant decline in condition or functional status of the Veteran that would contribute to increased risk of pressure ulcers.

f. If a skin assessment is performed, it must be documented. If a new or existing pressure ulcer is identified, the ulcer needs to be documented and a prevention or treatment plan initiated or revised to reflect the Veteran's current condition. The provider may request a wound care consult, or other consults deemed appropriate to other service(s). These services include, but are not limited to: Dietician, Nutrition and Food Services, Physical Therapy, Home Care, Prosthetics, and the Wheelchair Clinic. Finally, the Veteran and/or designated family members, surrogates, or authorized decision makers must receive educational materials about the prevention of pressure ulcers.

g. Each Outpatient area must be evaluated in order to identify settings, in addition to Primary Care, where a pressure ulcer risk assessment may be clinically appropriate (e.g., Ambulatory Surgery).

## 21. REFERENCES

a. American Dietetic Association Definition for Nutrition Screening and Nutrition Assessments. Journal of the American Dietetic Association (J Am Diet Assoc). 1994;94:838.

b. Bergstrom N & Braden B. A prospective study of pressure sore risk among institutionalized elderly. Journal of the American Geriatrics Society. 1992;40(8):747-758.

c. Black J, Baharestani M, Black S et al. An overview of tissue types in pressure ulcers: A consensus panel recommendation. Ostomy Wound Manage. 2010;56(4):28-44.

d. Black JM, Edsberg LE, Baharestani MM, et al. Pressure ulcers: avoidable or unavoidable? Results of the national pressure ulcer advisory panel consensus conference. Ostomy Wound Manage. 2011;57(2):24-37.

e. Braden B. Personal interview. February 24, 2009.

f. Dorner B, Posthauer ME, Thomas D, and the National Pressure Ulcer Advisory Panel. The Role of Nutrition in Pressure Ulcer Prevention and Treatment: National Pressure Ulcer Advisory Panel White Paper. Found at: http://www.npuap.org/Nutrition%20White%20Paper%20Website%20Version.pdf)

g. National Pressure Ulcer Advisory Panel and European Pressure Ulcer Advisory Panel. Prevention and Treatment of Pressure Ulcers: Quick Reference Guide. Washington DC: National Pressure Ulcer Advisory Panel. Found at: http://www.npuap.org/Final_Quick_Prevention_for_web_2010.pdf

h. Margolis DJ, Knauss J, Bilker W, and Baumgarten M. Medical conditions as risk factors for pressure ulcers in an outpatient setting. Age and Ageing. 2003;32:259-264.

i. NDNQI Pressure Ulcer Training®. Version 4 Module. Found at: https://www.nursingquality.org/NDNQIPressureUlcerTraining/.

**BRADEN SCALE FOR PREDICTING PRESSURE SORE RISK**
**Patients with a Total Score of 18 or less are considered to be at risk of developing pressure ulcer.**
**At Risk=15-18; Moderate Risk= 13-14; High Risk= 10-12; Severe or Very High Risk= 9 or below**

| | | | | |
|---|---|---|---|---|
| **Sensory Perception**<br><br>Ability to respond meaningfully to pressure-related discomfort. | 1. **Completely Limited-**<br>Unresponsive (does not moan, flinch or grasp) to painful stimuli, due to diminished level of consciousness or sedation.<br><br>OR<br><br>Limited ability to feel pain over most of body surface. | 2. **Very Limited-** Responds only to painful stimuli. Cannot communicate discomfort expect by moaning or restlessness.<br><br>OR<br><br>Has a sensory impairment which limits the ability to feel pain or discomfort over ½ of body. | 3. **Slightly Limited-**<br>Responds to verbal commands but cannot always communicate discomfort or need to be turned.<br><br>OR<br><br>Has some sensory impairment, which limits ability to feel pain or discomfort in 1 or 2 extremities. | 4. **No Impairment-**<br>Responds to verbal commands. Has no sensory defect, which would limit ability to feel or voice pain or discomfort. |
| **Moisture**<br><br>Degree to which skin is exposed to moisture. | 1 **Constantly Moist-**<br>Skin is kept moist almost constantly by perspiration, urine, etc. Dampness is detected every time patient is moved or turned. | 2. **Often Moist-**<br>Skin is often but not always moist. Linen must be changed at least once a shift. | 3. **Occasionally Moist-**<br>Skin is occasionally moist, requiring an extra linen change approximately once a day. | 4. **Rarely Moist-**<br>Skin is usually dry; linen only requires changing at routine intervals. |
| **Activity**<br><br>Degree of physical activity. | 1**. Bedfast-**<br>Confined to bed. | 2. **Chairfast-**<br>Ability to walk severely limited or nonexistent. Cannot bear own weight and/or must be assisted into chair or wheelchair. | 3**. Walks Occasionally-**<br>Walks occasionally during day but for very short distance, with or without assistance. Spends majority of each shift in bed or chair. | 4. **Walks Frequently-**<br>Walks outside the room at least twice a day and inside room at least once every 2 hours during waking hours. |
| **Mobility**<br><br>Ability to change and control body position. | 1. **Completely Immobile-**<br>Does not make even slight changes in body or extremity position without assistance. | **2. Very Limited-**<br>Makes occasional slight changes in body or extremity position but unable to make frequent or significant changes independently. | **3. Slightly Limited-**<br>Makes frequent though slight changes in body or extremity position independently. | **4. No Limitations-**<br>Makes major and frequent changes in position without assistance. |
| **Nutrition**<br><br>Usual food intake pattern<br>NPO: Nothing by mouth<br>IV: intravenously<br>TPN: Total parenteral nutrition | 1. **Very Poor-**<br>Never eats a complete meal. Rarely eats more than 1/3 or any food offered. Eats 2 servings or less of protein (meat or dairy products) per day. Takes fluids poorly. Does not take a liquid dietary supplement,<br><br>OR<br><br>Is NPO and/or maintained on clear liquids or IV for more than 5 days. | **2. Probably Inadequate-**<br>Rarely eats a complete meal and generally eats only about ½ of any food offered. Protein intake includes only 3 servings of meat or dairy products per day. Occasionally will take a dietary supplement,<br><br>OR<br><br>Receives less than optimum amount of liquid diet or tube feeding. | **3. Adequate-**<br>Eats over half of most meats. Eats a total of 4 servings of protein (meat, dairy products) each day. Occasionally will refuse a meal, but will usually take a supplement if offered.<br><br>OR<br><br>Is on a tube feedings or TPN regimen, which probably meets most of nutritional needs. | **4. Excellent-**<br>Eats most of every meal. Never refuses a meal. Usually eats a total of 4 or more servings of meat and dairy products. Occasionally eats between meals. Does not require supplementation. |
| **Friction and Shear** | 1**. Problem-**<br>Requires moderate to maximum assistance in moving. Complete lifting without sliding against sheets is impossible. Frequently slides down in bed or chair, requiring frequent repositioning with maximum assistance. Spasticity, contractures, or agitation leads to almost constant friction. | **2. Potential Problem-**<br>Moves feebly or requires minimum assistance. During a move, skin probably slides to some extent against sheets, chair, restraints, or other devices. Maintains relatively good position in chair or bed most of the time but occasionally slides down. | **3. No Apparent Problem-**<br>Moves in bed and in chair independently and has sufficient muscle strength to lift up completely during move. Maintains good position in bed or chair at all times. | |

## FACTORS THAT INCREASE RISK FOR DEVELOPMENT OF PRESSURE ULCERS

### 1. SUSTAINED PRESSURE WHEN SEATED OR IN BED

a. **Alteration in Sensation**

(1) Peripheral nervous system disorders (e.g., diabetes mellitus, peripheral neuropathy associated with alcohol abuse); and

(2) Central nervous system disorders (e.g., cerebrovascular accident, spinal cord injury or disorder (SCI/D)).

b. **Alteration** in Consciousness or Awareness

(1) Persistent vegetative state or coma;

(2) Anesthesia and/or postoperative periods; and

(3) Medications that affect alertness and/or consciousness (e.g., sedatives).

c. **Alteration in Mobility, Strength, and Muscle Mass**

(1) Neurologic disorders (e.g., amyotrophic Lateral Sclerosis (ALS), cerebrovascular accident, SCI/D);

(2) Musculoskeletal or orthopedic injuries (e.g., fractures, amputation, soft tissue injuries);

(3) Deconditioning and weakness (e.g., frail elderly, prolonged bedrest);

(4) Muscular atrophy;

(5) Pain;

(6) Advanced age among Veterans who are bed-confined or wheelchair users;

(7) Impaired ability to self-reposition (e.g., drugs that affect muscle movements);

(8) Poor posture while seated (e.g., pelvic obliquity, sacral sitting); and

(9) Spasticity.

### 2. DRUGS, DEVICES, AND EQUIPMENT

a. Drugs that affect healing (e.g., steroids, chemotherapy, non-steroidal anti-inflammatory drugs (NSAIDs), nicotine);

b. Medical devices (e.g., catheters, Continuous Positive Airway Pressure (CPAP), Bi-level Positive Airway Pressure (BiPAP), securing devices);

c. Adaptive equipment (e.g., splints);

d. Restraints; and

e. Interface surfaces and materials (e.g., cushions, mattresses).

**3.** ALTERATION IN NUTRITION AND HYDRATION

a. Weight-either increased or decreased Body Mass Index (BMI);

b. Significant changes in weight gain or loss of 5 percent in 30 days or 10 percent in the previous 180 days;

c. Protein-calorie malnutrition; and

d. Dehydration.

4. FRICTION OR SHEAR

a. Bed positioning (e.g., head of bed elevation);

b. Involuntary muscle movements that cause rubbing against sheets (e.g., spasticity); and

c. Poor transfers (e.g., slide across a surface causing tissue injury).

**5.** MOISTURE

a. Incontinence-bowel and/or bladder;

b. Excessive perspiration; and

c. Abnormal fluid accumulation (e.g., edema).

**6. OTHER DIAGNOSES THAT INCREASE PRESSURE ULCER RISK AND DECREASE HEALING**

a. Diabetes mellitus;

b. End-stage renal disease;

d. Congestive heart failure;

e. Peripheral vascular disease;

f. Vasculitis and other collagen vascular disorders;

g. Immune deficiency states;

h. Malignancies;

i. Chronic obstructive pulmonary disease;

j. Contractures; and

k. Infection.

# NUTRITIONAL RECOMMENDATIONS FOR WOUND HEALING

Nutritional interventions for healing of pressure ulcers supports prevention of new pressure ulcers and extension of injury. Appendix C is intended for Dietitians when making nutritional recommendations for wound healing.

## 1. NUTRITION CARE PROCESS

The Nutrition Care Process is the American Dietetic Association's standard care process. It is a systematic problem solving method that registered dietitians use to critically think and make decisions to address nutrition-related problems and provide safe and effective quality nutrition care. The process involves the following steps:

a. Nutrition assessment,

b. Nutrition diagnosis,

c. Nutrition intervention, and

d. Nutrition monitoring and evaluation.

## 2. ESSENTIAL NUTRIENTS

a. **Calories**. Use 30-35 calories per kilogram (kg) of body weight as a guide (see subpar. 7a of the Handbook). Calorie needs may be higher in Veterans who are underweight or have had a significant weight loss in order to prevent further weight loss or regain lost weight (see subpar. 7a of the Handbook). Calorie needs may be higher in individuals with co-morbid medical conditions such as Chronic Obstructive Pulmonary Disease (COPD), cancer, acute spinal cord injury or disorder (SCI/D), traumatic brain injury, hemodialysis, etc. Caloric intake may need to be lowered in Veterans with chronic SCI/D who start to have an undesired weight gain. Weight loss should not be a goal in overweight or obese Veterans with pressure ulcers. Veterans who are obese require an individualized nutritional plan of care. Excess weight can impede wound healing. Poor vasculature of adipose tissue can result in reduced blood flow and delivery of essential nutrients in the wound. Body weight must be monitored closely (see subpars. 7b and 7c of the Handbook).

b. **Protein.** Use 1.25-1.5 gram (gm) protein per kg of body weight as a guide (see subpar. 7a of the Handbook). Protein needs may be greater than 1.5 gm per kg of body weight if the Veteran has multiple pressure ulcers, has pressure ulcers that are draining, or if lower protein levels are not promoting healing. Protein needs are to be individualized using clinical judgment. Adequate fluids must be provided or consumed and renal function preserved. Caution needs to be used when determining protein needs in Veterans with impaired renal function and in the elderly. ***NOTE:*** *Past studies have shown that giving higher levels of protein (i.e., more than (>)2.0 gm per kg of body weight) may not help with wound healing and may contribute to dehydration in elderly Veterans (see subpar. 7a of the Handbook).*

c. **Fluid.** 30-35 milliliter (ml) per kg body weight per day or 1 ml per calorie is usually adequate (see subpar. 7a of the Handbook). If fluid restriction is medically necessary, then a minimum of 1500 ml daily is suggested. Fluid needs will be higher in Veterans with diarrhea, vomiting, profuse sweating, elevated temperature, and in those experiencing considerable amounts of wound drainage. Those receiving higher amounts of protein may also need higher amounts of fluid (see subpar. 7a of the Handbook). Veterans using air-fluidized beds may require an additional 10-15 ml per kg of body weight per day. Interventions may need to be considered if fluid intake is inadequate (e.g., initiation of Intravenous (IV) fluids, increase water flushes in Veterans receiving tube feedings). The Veteran needs to be monitored for signs and symptoms of dehydration.

## 3. VITAMIN AND MINERAL SUPPLEMENTS

Most nutrient needs can be met through a healthy diet. Other than a daily multivitamin, additional supplements or individual vitamins or minerals should only be prescribed if a Veteran exhibits signs or symptoms of clinical deficiency. Dietary supplementation in the absence of deficiency has not been shown to enhance wound healing. Micronutrients thought to be related to pressure ulcer healing include zinc and copper, Vitamin C, and Vitamin A (see subpar. 7a of the Handbook).

a. **Recommended Dietary Allowance (RDA).** RDA is the average daily level of intake sufficient to meet the nutrient requirements of nearly all (97 percent to 98 percent) healthy individuals.

b. **Adequate Intake (AI).** AI is established when evidence is insufficient to develop an RDA and is set at a level assumed to ensure nutritional adequacy.

c. **Tolerable Intake Upper Level (UL).** UL is the maximum daily intake unlikely to cause adverse health effects.

d. **Zinc.** Zinc deficiency is associated with delayed wound healing. If the deficiency is identified, zinc supplementation needs to be recommended at no more than 176 mg zinc sulfate or 40 mg. of elemental zinc per day. This is the maximum level of daily nutrient intake, also known as UL, that is likely to pose no risk of adverse affects. Zinc sulfate needs to be administered in divided doses and needs to be discontinued once the deficiency has been corrected (see subpar. 8a of the Handbook). However, provision of zinc supplementation in the absence of zinc deficiency has not been shown to accelerate wound healing. Serum zinc levels fall in the presence of inflammation and hypoalbuminemia. Several concerns exist regarding zinc supplementation. High serum zinc levels in excess of the recommended amount may inhibit wound healing by interfering with copper metabolism, which plays an important role in collagen cross-linking in addition to interfering with iron absorption.

(1) An assessment of the Veteran's risk for zinc deficiency is best determined by analyzing zinc intake in the foods consumed since there is no reliable direct test for zinc.

(2) A low serum prealbumin level may be a more objective indicator of a Veteran's risk for zinc deficiency. A C-reactive protein (CRP) level needs to be included in monitoring as prealbumin is a negative acute phase protein and is likely to remain suppressed in the presence of an elevated CRP level.

(3) The amount of zinc present in oral nutritional supplements, food fortifiers, enhanced foods, and/or tube feeding formulas used at the facility needs to be considered.

(4) The need for zinc supplementation needs to be individually determined. Requesting a provider order for the zinc supplementation for 2-3 weeks, needs to be considered.

(5) A contraindication to zinc supplementation is a Veteran with stomach and/or duodenal ulcers.

(6) Signs and symptoms of zinc toxicity include gastrointestinal (GI) irritation, nausea, vomiting, and diarrhea. ***NOTE:*** *Information on zinc is found at the Zinc Office of Dietary Supplements, National Institutes of Health at http://ods.od.nih.gov/factsheets/zinc.asp.*

e. **Ascorbic Acid (Vitamin C).** Vitamin C requirements may be met by eating a diet adequate in fruits and vegetables. If a Veteran consumes an inadequate diet and a deficiency is identified, then supplementation with adjunct ascorbic acid is suggested. Dosage should not exceed the recommended daily allowance (adults: 60 mg per day; smokers: 100 mg per day). Provision of Vitamin C supplementation in megadose amounts have not been proven to accelerate the wound healing process. Therefore, recommendations for additional supplementation need to be determined on an individual basis (see subpar. 7a of the Handbook).

(1) Additional considerations include the amount of Vitamin C in the multivitamin with mineral minerals supplement, nutritional supplement, and/or juice used at your facility.

(2) Contraindication to Vitamin C is iron storage disease.

f. **Vitamin A**. The RDA for Vitamin A for adult males is 3,000 international units (IU) and females is 2,310 IU. Dietary intake of five or more servings of fruits and vegetables per day that include some dark green and leafy vegetables and deep yellow or orange fruits should provide sufficient beta-carotene and other carotenoids Vitamin A is important for wound healing, as it enhances collagen formation and helps regulate the immune system.

(1) A deficiency of Vtamin A may lead to delayed wound healing. Risk of Vitamin A deficiency may be noted in those with malabsorptive syndromes, such as celiac disease, Crohn's disease, pancreatic disorders, and in vegetarians. A deficiency of Vitamin A may also be seen along 2with a zinc deficiency. Zinc is required to make retinol binding protein, which is needed for Vitamin A transport from the liver to tissues.

(2) Vitamin A supplementation has been given to counteract the anti-inflammatory effects of steroids.

(3) Taken in excess, Vitamin A supplementation may result in hypervitaminosis A. Major adverse effects include liver abnormalities and reduced bone mineral density that may result in osteoporosis. The tolerable upper limit of Vitamin A is 10,000 IU for both males and females. Due to the potential toxicity, Vitamin A supplementation needs to be implemented carefully. More research is needed to confirm optimal dosage. ***NOTE:*** *For information on Vitamin A see http://ods.od.nih.gov/factsheets/VitaminA-HealthProfessional/ and http://www.adaevidencelibrary.com/template.cfm?template=guide_summary&key=2378* .

g. **Arginine.** Arginine and its relationship to wound healing has been researched for over 30 years, primarily in animal models. Clear and definitive guidelines for its safe and effective use have yet to be established.

h. **Glutamine.** Glutamine should not be routinely provided to all patients with wounds due to insufficient data (see http://www.adaevidencelibrary.com/template.cfm?template=guide_summary&key=2378 ).

4. NUTRITION SUPPORT

Nutrition support includes:

a. Providing assistance with meal set-up and feeding as needed.

b. Consulting a Speech-Language Therapist and/or Occupational Therapist if a Veteran is found to have swallowing difficulties or problems self-feeding.
.

c. Encouraging the Veteran to eat in a common patient dining area to promote socialization and allow for greater supervision of diet tolerance, food preferences, and assistance needs.

d. Providing therapeutic nutritional supplements, food fortifiers, and enhanced foods, as appropriate. Supplements may be high calorie, high protein, and/or have some other component known to support or enhance wound healing.

e. Considering alternate methods of nutrition if the oral intake is inadequate and if the Veteran and/or designated family members, surrogates, or authorized decision makers are agreeable.

f. Consulting the Nutrition Support Team or Registered Dietitian (RD) for enteral or parenteral nutrition recommendations. If no contraindications, the ideal route for feeding is enternal nutrition.

**5.** DIABETES

Maintenance of proper glycemic control is vital to the healing process, as there is an increased susceptibility to infection associated with hyperglycemia. Blood glucose may be influenced by non-nutritional factors, such as illness, stress, infection, wounds, medications, etc. Adequate energy intake is the key for collagen synthesis, angiogenesis, nitrogen retention and

anabolism, thus calorie needs may be increased to promote wound healing. The major fuel source for collagen synthesis is carbohydrates, however a balance of protein and fat is necessary combined with complex carbohydrates to manage glucose levels. Medications may need to be adjusted to accommodate increased carbohydrate intake.

## 6. EDUCATION

Educating the Veteran and/or designated family members, surrogates, or authorized decision makers on the role of nutrition in wound healing is essential. Examples of educational material for nutrition and wound healing may be found at: http://vaww.nutrition.va.gov/clinicalNutrition/ptEd.asp#wound. ***NOTE:*** *This is an internal Web site and is not available to the public.*

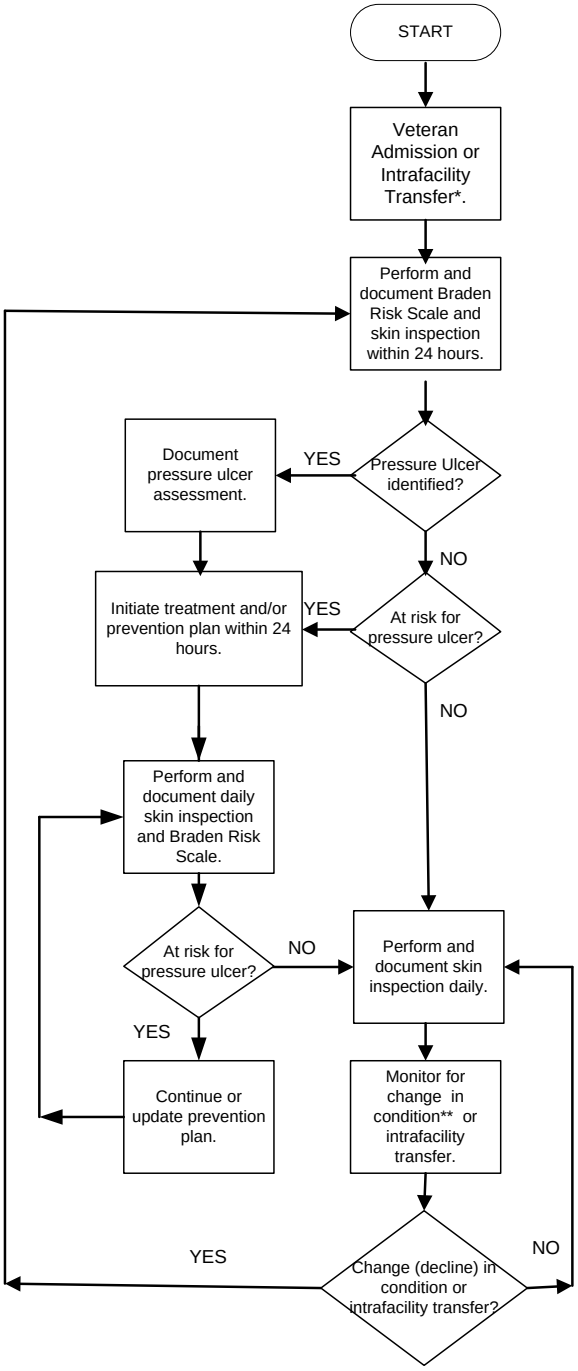
## 7. REFERENCES

a. Dorner B, Posthauer ME, Thomas D, and the National Pressure Ulcer Advisory Panel. The Role of Nutrition in Pressure Ulcer Prevention and Treatment: National Pressure Ulcer Advisory Panel White Paper. Found at: http://www.npuap.org/Nutrition%20White%20Paper%20Website%20Version.pdf)

b. Gottschlich M. The A.S.P.E.N. nutrition support core curriculum: A case-based approach: the adult patient. American Society for Parenteral and Enteral Nutrition, 2007.

c. Thompson C & Fuhrman MP. Nutrients and wound healing: still searching for the magic bullet. Nutrition and Clinical Practice (Nutr Clin Pract). 2005;20:331-347.

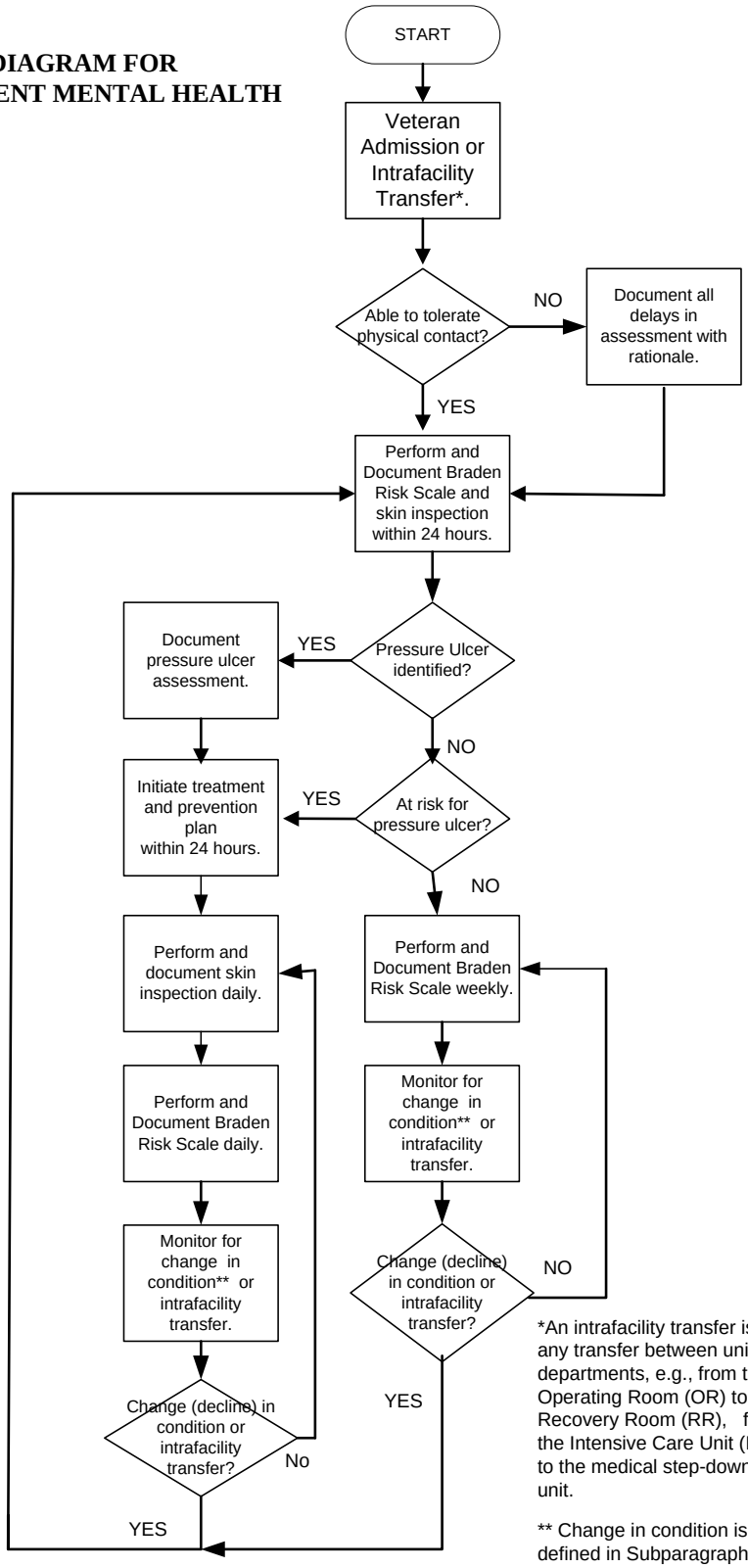
**FLOW DIAGRAM FOR ACUTE CARE**




*An intrafacility transfer is any transfer between units or departments, e.g., from the Operating Room (OR) to the Recovery Room (RR), from the Intensive Care Unit (ICU) to the medical step-down unit.

** Change in condition is defined in Subparagraph 14c of the Handbook.

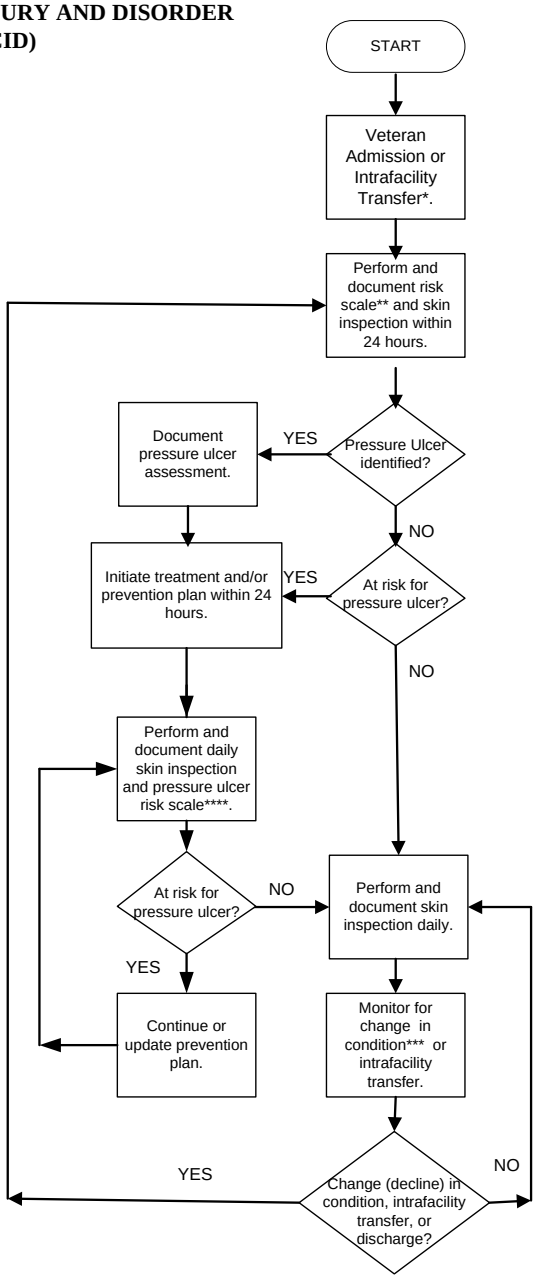
**FLOW DIAGRAM FOR INPATIENT MENTAL HEALTH**




*An intrafacility transfer is any transfer between units or departments, e.g., from the Operating Room (OR) to the Recovery Room (RR), from the Intensive Care Unit (ICU) to the medical step-down unit.

** Change in condition is defined in Subparagraph 14c of the Handbook.

**FLOW DIAGRAM FOR SPINAL CORD INJURY AND DISORDER UNITS (SCID)**




*An intrafacility transfer is any transfer between units or departments, e.g., from the Operating Room (OR) to the Recovery Room (RR), from the Intensive Care Unit (ICU) to the medical step-down unit.

** Braden Risk Scale or other skin risk scale that has been validated in people with SCID

*** Change in condition is defined in Subparagraph 14c of the Handbook.

**** For Veterans with longstanding injury, following the first week of admission, the pressure ulcer risk scale frequency may be weekly.

## SUMMARY OF ACTIVITIES FOR PRESSURE ULCER PREVENTION IN COMMUNITY LIVING CENTERS (CLC) SETTING*

| Time | Nursing Actions |
|---|---|
| Upon admission to CLC | Perform and document within 24 hours**:**<br>1. Skin Inspection<br>2. Braden Risk Scale |
| First 4 weeks (weeks 1-4) after admission | 1. Perform and document Skin Inspection (weekly)<br>2. Perform and document Braden Risk Scale (weekly) |
| Starting with the 5th week (week 5+) after admission and continuing during residence | 1. Perform and document Skin Inspection (weekly)<br>2. Perform and document Braden Risk Scale (monthly) |

***** To maintain consistency with the Minimum Data Set (MDS) regulations for the performance of Braden Risk Scale and skin inspections at specified time intervals, a simple flow chart depicting a sequence of actions based on risk is not provided for the CLC setting.

**FLOW DIAGRAM FOR HOME BASED PRIMARY CARE (HBPC)**