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Clinical Practice Guideline: Hospital Readmission Risk Assessment and Prevention

Centers for Disease Control and Prevention (CDC)

Division of Healthcare Quality Promotion

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Executive Summary

This clinical practice guideline provides evidence-based recommendations for healthcare facilities to systematically assess and mitigate hospital readmission risk. Implementation of these standardized assessment criteria has been associated with a 15-23% reduction in 30-day readmissions across participating healthcare systems.

Background and Rationale

Hospital readmissions within 30 days of discharge affect approximately 14% of Medicare beneficiaries annually, resulting in an estimated $26 billion in healthcare expenditures. Risk stratification using validated assessment tools enables targeted interventions that improve patient outcomes while reducing healthcare costs.

Scope and Application

Target Population

- All adult patients (18 years and older) admitted to acute care hospitals
- Applicable to medical, surgical, and mixed medical-surgical units
- Excludes: psychiatric admissions, rehabilitation stays, and planned readmissions

Healthcare Settings

- Acute care hospitals with 25 beds or more
- Critical access hospitals
- Academic medical centers
- Specialty hospitals (with adaptation for patient population)

Evidence Grade and Methodology

This guideline is based on systematic review of peer-reviewed literature (2018-2023), analysis of Medicare claims data, and expert consensus. Recommendations are graded using the GRADE (Grading of Recommendations Assessment, Development and Evaluation) framework.

Section I: Risk Assessment Framework

A. Standardized Risk Scoring Algorithm

Healthcare facilities **SHALL** implement a standardized risk scoring system incorporating the following validated risk factors:

1. Demographic Risk Factors (Evidence Grade: A)

Age-Related Risk:
- Patients aged 65-79 years: assign 2 points
- Patients aged 80 years and older: assign 3 points
- **Rationale:** Advanced age is independently associated with increased readmission risk (OR 1.4, 95% CI 1.2-1.6)

2. Clinical Risk Factors (Evidence Grade: A)

Length of Stay:
- Index admission 4-7 days: assign 1 point
- Index admission 8-14 days: assign 2 points

- Index admission longer than 14 days: assign 3 points
- **Rationale:** Extended length of stay correlates with illness severity and discharge complexity

Comorbidity Burden:
- Diabetes mellitus (any type): assign 1 point
- Heart failure (any classification): assign 2 points

- Chronic obstructive pulmonary disease: assign 1 point
- Chronic kidney disease (stages 3-5): assign 1 point
- **Rationale:** Based on validated Charlson Comorbidity Index modifications

3. Healthcare Utilization History (Evidence Grade: A)

Previous Admissions:
- One or more admissions within 30 days: assign 3 points
- Two or more admissions within 90 days: assign 2 points
- Emergency department visits (2 or more within 6 months): assign 1 point

4. Laboratory Parameters (Evidence Grade: B)

Hematologic Markers:
- Hemoglobin less than 10.0 g/dL: assign 1 point
- **Reference Standard:** Laboratory values obtained within 24 hours of discharge

Renal Function:
- Estimated glomerular filtration rate less than 30 mL/min/1.73m²: assign 2 points
- **Calculation Method:** CKD-EPI equation preferred

Electrolyte Abnormalities:
- Serum sodium less than 135 mEq/L or greater than 145 mEq/L: assign 1 point

5. Social Determinants of Health (Evidence Grade: B)

Living Situation:
- Lives alone without identified caregiver: assign 2 points
- Lives alone with identified caregiver: assign 1 point

Healthcare Access:
- Lack of reliable transportation: assign 1 point
- No established primary care provider: assign 1 point
- Medicaid or uninsured status: assign 1 point

B. Risk Stratification Categories

Risk Score Calculation:

Total Risk Score = Sum of all individual risk factor points

Classification Thresholds:

- **Low Risk:** 0-3 points (estimated 30-day readmission rate: 8-12%)
- **Intermediate Risk:** 4-7 points (estimated 30-day readmission rate: 15-20%)
- **High Risk:** 8 points or higher (estimated 30-day readmission rate: 25-35%)

Section II: Intervention Protocols

A. Risk-Stratified Interventions (Evidence Grade: A)

Healthcare facilities **SHALL** implement the following minimum interventions based on risk stratification:

Low Risk (0-3 points)

Required Actions:

1. Standard discharge planning per institutional protocol
2. Medication reconciliation by licensed pharmacist or trained personnel
3. Primary care follow-up scheduled within 7-14 days
4. Provision of written discharge instructions in patient’s preferred language

Intermediate Risk (4-7 points)

Required Actions:

1. All Low Risk interventions, plus:
2. Enhanced discharge planning with multidisciplinary team involvement
3. Primary care follow-up scheduled within 5-7 days
4. Post-discharge telephone contact within 48-72 hours
5. **Condition-Specific Requirements:**

- Heart failure patients: cardiology follow-up within 7 days

- Diabetes patients: endocrinology or diabetes educator consultation
- COPD patients: pulmonology follow-up within 14 days

High Risk (8 points or higher)

Required Actions:
1. All Intermediate Risk interventions, plus:
2. Case management consultation prior to discharge
3. Transitional care management enrollment (when available)
4. Primary care follow-up scheduled within 3-5 days
5. Post-discharge telephone contact within 24-48 hours
6. **Additional Considerations:**
- Patients scoring 10 points or higher: evaluate for post-acute care placement
- Patients living alone with score of 8 or higher: home health services referral

B. Special Populations and Override Criteria

Mandatory Risk Escalation (Evidence Grade: B)

The following conditions **SHALL** result in automatic High Risk classification regardless of calculated score:

1. **Medication-Related Events:**
    - Adverse drug reaction during index admission
    - Medication non-adherence identified as contributing factor to admission
2. **Behavioral Health Factors:**
    - Active substance use disorder
    - History of discharge against medical advice within 6 months
3. **Complex Discharge Requirements:**
    - New requirement for durable medical equipment
    - Significant change in functional status during admission

Clinical Override Authority

- Attending physician may override risk classification with documented clinical justification
- Override decisions require approval by discharge planning coordinator or designee
- All overrides **SHALL** be documented in the medical record with specific rationale

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Section III: Quality Assurance and Monitoring

A. Process Measures (Evidence Grade: C)

Healthcare facilities **SHALL** monitor the following process indicators:

1. **Assessment Completion:**
    - Risk assessment completed within 24 hours of admission: 95% or higher
    - Risk assessment completed prior to discharge: 100%
2. **Intervention Compliance:**
    - High Risk patients with documented discharge plan: 100%
    - Follow-up appointments scheduled prior to discharge: 90% or higher

B. Outcome Measures

1. **Primary Outcome:**
    - 30-day all-cause readmission rate by risk category
2. **Secondary Outcomes:**
    - 30-day emergency department visits
    - Patient satisfaction with discharge process
    - Time to primary care follow-up

C. Audit and Review Requirements

1. **Routine Monitoring:**

- Monthly review of High Risk classification accuracy (minimum 10% sample)
- Quarterly assessment of intervention compliance rates

2. **Triggered Reviews:**
   - Any Low Risk patient readmitted within 30 days
   - Override utilization rate greater than 5% of total assessments

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Section IV: Implementation Considerations

A. Staff Training Requirements

Initial Training (8 hours):
- Risk assessment tool utilization
- Evidence base for interventions
- Documentation requirements
- Quality improvement principles

Annual Competency Assessment:
- Risk factor identification accuracy 90% or higher
- Appropriate intervention selection 95% or higher

B. Health Information Technology Integration

Recommended Features:
- Automated risk score calculation
- Clinical decision support alerts
- Integration with discharge planning workflows
- Outcome tracking capabilities

C. Resource Requirements

Staffing:
- Dedicated discharge planning coordinator (recommended 1.0 FTE per 100 beds)

- Case management services for High Risk patients
- Pharmacy support for medication reconciliation

Section V: Regulatory Compliance

A. Alignment with Federal Requirements

This guideline supports compliance with:
- Centers for Medicare & Medicaid Services (CMS) Hospital Readmissions Reduction Program
- The Joint Commission National Patient Safety Goals
- Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) requirements

B. Documentation Requirements

Healthcare facilities **SHALL** maintain documentation demonstrating:
- Risk assessment completion for all eligible patients
- Intervention delivery as specified by risk category
- Outcome monitoring and quality improvement activities

References

1. Kansagara D, et al. Risk prediction models for hospital readmission: a systematic review. JAMA. 2011;306(15):1688-1698.

2. van Walraven C, et al. Derivation and validation of an index to predict early death or unplanned readmission after discharge from hospital to the community. CMAJ. 2010;182(6):551-557.

3. Burke RE, et al. Moving beyond readmission penalties: creating an ideal process to improve transitional care. J Hosp Med. 2013;8(2):102-109.

4. Jack BW, et al. A reengineered hospital discharge program to decrease rehospitalization: a randomized trial. Ann Intern Med. 2009;150(3):178-187.

Appendices

Appendix A: Risk Assessment Tool Template

[Standardized form for clinical use]

Appendix B: Implementation Timeline

[Suggested 90-day implementation schedule]

Appendix C: Quality Improvement Metrics Dashboard

[Key performance indicators and benchmarks]

Document Control:
- **Developed by:** CDC Healthcare Quality Promotion Working Group
- **Reviewed by:** External Expert Panel on Hospital Readmissions
- **Approved by:** Director, Division of Healthcare Quality Promotion
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