

NATIONAL QUALITY FORUM—Evidence (subcriterion 1a)

Measure Title: [Pediatric All-Condition Readmission Measure](#)

IF the measure is a component in a composite performance measure, provide the title of the Composite Measure here:

Date of Submission: [2/5/2014](#)

Instructions

- *For composite performance measures:*
 - *A separate evidence form is required for each component measure unless several components were studied together.*
 - *If a component measure is submitted as an individual performance measure, attach the evidence form to the individual measure submission.*
- Respond to **all** questions as instructed with answers immediately following the question. All information needed to demonstrate meeting the evidence subcriterion (1a) must be in this form. An appendix of *supplemental* materials may be submitted, but there is no guarantee it will be reviewed.
- If you are unable to check a box, please highlight or shade the box for your response.
- Maximum of 10 pages (*includes questions/instructions*; minimum font size 11 pt; do not change margins).
Contact NQF staff if more pages are needed.
- Contact NQF staff regarding questions. Check for resources at [Submitting Standards webpage](#).

Note: The information provided in this form is intended to aid the Steering Committee and other stakeholders in understanding to what degree the evidence for this measure meets NQF's evaluation criteria.

Subcriterion 1a. Evidence to Support the Measure Focus

The measure focus is a health outcome or is evidence-based, demonstrated as follows:

- Health outcome:³ a rationale supports the relationship of the health outcome to processes or structures of care.
- Intermediate clinical outcome, Process,⁴ or Structure: a systematic assessment and grading of the quantity, quality, and consistency of the body of evidence⁵ that the measure focus leads to a desired health outcome.
- Patient experience with care: evidence that the measured aspects of care are those valued by patients and for which the patient is the best and/or only source of information OR that patient experience with care is correlated with desired outcomes.
- Efficiency:⁶ evidence for the quality component as noted above.

Notes

3. Generally, rare event outcomes do not provide adequate information for improvement or discrimination; however, serious reportable events that are compared to zero are appropriate outcomes for public reporting and quality improvement.

4. Clinical care processes typically include multiple steps: assess → identify problem/potential problem → choose/plan intervention (with patient input) → provide intervention → evaluate impact on health status. If the measure focus is one step in such a multistep process, the step with the strongest evidence for the link to the desired outcome should be selected as the focus of measurement.

5. The preferred systems for grading the evidence are the U.S. Preventive Services Task Force (USPSTF) [grading definitions](#) and [methods](#), or Grading of Recommendations, Assessment, Development and Evaluation ([GRADE guidelines](#)).

6. Measures of efficiency combine the concepts of resource use and quality (NQF's [Measurement Framework: Evaluating Efficiency Across Episodes of Care](#); [AQA Principles of Efficiency Measures](#)).

1a.1. This is a measure of:

Outcome

- ☒ Health outcome: [Readmission](#)
Health outcome includes patient-reported outcomes (PRO, i.e., HRQoL/functional status, symptom/burden, experience with care, health-related behaviors)
- ☐ Intermediate clinical outcome:
- ☐ Process:
- ☐ Structure:
- ☐ Other:

HEALTH OUTCOME PERFORMANCE MEASURE *If not a health outcome, skip to 1a.3*

1a.2. Briefly state or diagram the linkage between the health outcome (or PRO) and the healthcare structures, processes, interventions, or services that influence it.

In many cases, readmissions signal how well disease is managed, indicating a worsening of health status that may have been prevented, and can reflect the quality of key processes, including discharge planning and education, care transitions, and follow-up care.

1a.2.1. State the rationale supporting the relationship between the health outcome (or PRO) and at least one healthcare structure, process, intervention, or service.

Evidence suggests that readmission rates provide a useful measure of health care quality. Use of effective, evidence-based approaches to diagnosis, treatment, and monitoring of disease leads to fewer complications and decreased exacerbations, which can, in turn, result in a decreased frequency of hospitalizations. Readmission rates therefore in part reflect the quality of clinical care and resulting disease outcomes.

Studies have shown that hospitals that provide care in accordance with clinical practice guidelines have lower readmission rates than those that do not.¹⁻³ Several retrospective cohort analyses and case-control studies and a prospective pre-post observational study have demonstrated that adherence to evidence-based processes of care results in improved clinical outcomes.^{1,2,4-7} For example, improved adherence to the Joint Commission's recommended 3 Children's Asthma Care (CAC 1-3) measures was associated with improved chronic asthma symptoms and fewer exacerbations, as well as longer periods out of the hospital with fewer readmissions.⁵ Similarly, lower quality of inpatient care is associated with a higher risk of unplanned readmission.⁴

Readmission rates also reflect the quality of key health care processes. Several studies, largely in adults, have demonstrated that interventions focused on improving the quality of the discharge process, the transition from the hospital to ambulatory or long-term care, and the provision of timely follow-up care have been associated with reduced hospital readmission rates, suggesting that the quality of these processes is associated with readmission risk.⁸⁻²⁷ For example, hospitals that provide patient-focused, individualized pre-discharge education as well as post-discharge support have fewer readmissions than those that do not provide such services.^{9-11,13-21,24,27}

Project RED and the Care Transition Measure are 2 examples of initiatives that have improved the quality of discharge and care transition processes for adult patients by incorporating such

interventions as a transition coach who provides assistance with medication self-management, makes home visits and telephone calls to patients after discharge, and sets up timely follow-up appointments with primary or specialty care providers. Such interventions that emphasize the importance of teaching patients about their diagnoses and reviewing their treatment and discharge plan with them throughout their hospital stay are associated with a subsequent reduction in 30-day readmission rates.^{15,28}

Few studies have investigated the relationship between pediatric readmission rates and care coordination, discharge planning, and care transition, but given the equal importance of these processes for pediatric patients, improvements in these processes would likewise be expected to improve pediatric readmission rates. Indeed, parental perception that a child is not healthy enough for discharge is associated with a greater risk of subsequent, unplanned 30-day readmission.²⁹ Responding to parental concerns about a child's health prior to hospital discharge may help mitigate readmission risk. In another study of both pediatric and adult patients with sickle cell disease, patients who had post-discharge follow-up within 30 days of hospital discharge were readmitted less often than those who did not have post-discharge follow-up.²⁴

References

1. Bozic KJ, Maselli J, Pekow PS, Lindenauer PK, Vail TP, Auerbach AD. The influence of procedure volumes and standardization of care on quality and efficiency in total joint replacement surgery. *J Bone Joint Surg Am*. 2010;92(16):2643–2652. doi:10.2106/JBJS.I.01477.
2. Ludke RL, MacDowell NM, Booth BM, Hunter SA. Appropriateness of admissions and discharges among readmitted patients. *Health Serv Res*. 1990;25(3):501–525.
3. Heidenreich PA, Hernandez AF, Yancy CW, Liang L, Peterson ED, Fonarow GC. Get With The Guidelines program participation, process of care, and outcome for Medicare patients hospitalized with heart failure. *Circ Cardiovasc Qual Outcomes*. 2012;5(1):37–43. doi:10.1161/CIRCOUTCOMES.110.959122.
4. Ashton CM, Kuykendall DH, Johnson ML, Wray NP, Wu L. The association between the quality of inpatient care and early readmission. *Ann Intern Med*. 1995;122(6):415–421.
5. Fassl BA, Nkoy FL, Stone BL, Srivastava R, Simon TD, Uchida DA, Koopmeiners K, Greene T, Cook LJ, Maloney CG. The Joint Commission Children's Asthma Care quality measures and asthma readmissions. *Pediatrics*. 2012;130(3):482–491. doi:10.1542/peds.2011-3318.
6. Cheney J, Barber S, Altamirano L, Medico Cirujano, Cheney M, Williams C, Jackson M, Yates P, O'Rourke P, Wainwright C. A clinical pathway for bronchiolitis is effective in reducing readmission rates. *J Pediatr*. 2005;147(5):622–626. doi:10.1016/j.jpeds.2005.06.040.
7. Pillai D, Song X, Pastor W, Ottolini M, Powell D, Wiedermann BL, DeBiasi RL. Implementation and impact of a consensus diagnostic and management algorithm for complicated pneumonia in children. *J Investig Med*. 2011;59(8):1221–1227. doi:10.231/JIM.0b013e318231db4d.
8. Inglis SC, Clark RA, McAlister FA, Ball J, Lewinter C, Cullington D, Stewart S, Cleland JG. Structured telephone support or telemonitoring programmes for patients with chronic heart failure. *Cochrane Database Syst Rev Online*. 2010;(8):CD007228. doi:10.1002/14651858.CD007228.pub2.
9. Phillips CO, Wright SM, Kern DE, Singa RM, Shepperd S, Rubin HR. Comprehensive discharge planning with postdischarge support for older patients with congestive heart failure: a meta-analysis. *JAMA*. 2004;291(11):1358–1367. doi:10.1001/jama.291.11.1358.

10. Scott IA. Preventing the rebound: improving care transition in hospital discharge processes. *Aust Health Rev.* 2010;34(4):445–451. doi:10.1071/AH09777.
11. Shepperd S, Lannin NA, Clemson LM, McCluskey A, Cameron ID, Barras SL. Discharge planning from hospital to home. *Cochrane Database Syst Rev Online.* 2013;1:CD000313. doi:10.1002/14651858.CD000313.pub4.
12. Sochalski J, Jaarsma T, Krumholz HM, Laramée A, McMurray JJV, Naylor MD, Rich MW, Riegel B, Stewart S. What works in chronic care management: the case of heart failure. *Health Aff (Millwood).* 2009;28(1):179–189. doi:10.1377/hlthaff.28.1.179.
13. Anderson C, Deepak BV, Amoateng-Adjepong Y, Zarich S. Benefits of comprehensive inpatient education and discharge planning combined with outpatient support in elderly patients with congestive heart failure. *Congest Heart Fail.* 2005;11(6):315–321.
14. Balaban RB, Weissman JS, Samuel PA, Woolhandler S. Redefining and redesigning hospital discharge to enhance patient care: a randomized controlled study. *J Gen Intern Med.* 2008;23(8):1228–1233. doi:10.1007/s11606-008-0618-9.
15. Coleman EA, Parry C, Chalmers S, Min S-J. The care transitions intervention: results of a randomized controlled trial. *Arch Intern Med.* 2006;166(17):1822–1828. doi:10.1001/archinte.166.17.1822.
16. Evans RL, Hendricks RD. Evaluating hospital discharge planning: a randomized clinical trial. *Med Care.* 1993;31(4):358–370.
17. Jack BW, Chetty VK, Anthony D, Greenwald JL, Sanchez GM, Johnson AE, Forsythe SR, O'Donnell JK, Paasche-Orlow MK, Manasseh C, Martin S, Culpepper L. A reengineered hospital discharge program to decrease rehospitalization: a randomized trial. *Ann Intern Med.* 2009;150(3):178–187.
18. Naylor MD, Brooten DA, Campbell RL, Maislin G, McCauley KM, Schwartz JS. Transitional care of older adults hospitalized with heart failure: a randomized, controlled trial. *J Am Geriatr Soc.* 2004;52(5):675–684. doi:10.1111/j.1532-5415.2004.52202.x.
19. Naylor M, Brooten D, Jones R, Lavizzo-Mourey R, Mezey M, Pauly M. Comprehensive discharge planning for the hospitalized elderly. A randomized clinical trial. *Ann Intern Med.* 1994;120(12):999–1006.
20. Koehler BE, Richter KM, Youngblood L, Cohen BA, Prengler ID, Cheng D, Masica AL. Reduction of 30-day postdischarge hospital readmission or emergency department (ED) visit rates in high-risk elderly medical patients through delivery of a targeted care bundle. *J Hosp Med.* 2009;4(4):211–218. doi:10.1002/jhm.427.
21. Rich MW, Beckham V, Wittenberg C, Leven CL, Freedland KE, Carney RM. A multidisciplinary intervention to prevent the readmission of elderly patients with congestive heart failure. *N Engl J Med.* 1995;333(18):1190–1195. doi:10.1056/NEJM199511023331806.
22. Costantino ME, Frey B, Hall B, Painter P. The influence of a postdischarge intervention on reducing hospital readmissions in a Medicare population. *Popul Heal Manag.* 2013;16(5):310–316. doi:10.1089/pop.2012.0084.
23. Flood KL, MacLennan PA, McGrew D, Green D, Dodd C, Brown CJ. Effects of an acute care for elders unit on costs and 30-day readmissions. *JAMA Intern Med.* 2013;1–7. doi:10.1001/jamainternmed.2013.524.
24. Leschke J, Panepinto JA, Nimmer M, Hoffmann RG, Yan K, Brousseau DC. Outpatient follow-up and rehospitalizations for sickle cell disease patients. *Pediatr Blood Cancer.* 2012;58(3):406–409. doi:10.1002/pbc.23140.
25. Bradley EH, Curry L, Horwitz LI, Sipsma H, Wang Y, Walsh MN, Goldmann D, White N, Piña IL, Krumholz HM. Hospital strategies associated with 30-day readmission rates for patients with heart failure. *Circ Cardiovasc Qual Outcomes.* 2013;6(4):444–450. doi:10.1161/CIRCOUTCOMES.111.000101.

26. Harrison PL, Hara PA, Pope JE, Young MC, Rula EY. The impact of postdischarge telephonic follow-up on hospital readmissions. *Popul Heal Manag.* 2011;14(1):27–32. doi:10.1089/pop.2009.0076.
27. Kripalani S, Theobald CN, Anctil B, Vasilevskis EE. Reducing Hospital Readmission Rates: Current Strategies and Future Directions. *Annu Rev Med.* 2013. doi:10.1146/annurev-med-022613-090415.
28. Markley J, Andow V, Sabharwal K, Wang Z, Fennell E, Dusek R. A project to reengineer discharges reduces 30-day readmission rates. *Am J Nurs.* 2013;113(7):55–64. doi:10.1097/01.NAJ.0000431922.47547.eb.
29. Berry JG, Ziniel SI, Freeman L, Kaplan W, Antonelli R, Gay J, Coleman EA, Porter S, Goldmann D. Hospital readmission and parent perceptions of their child's hospital discharge. *Int J Qual Health Care.* 2013;25(5):573–581. doi:10.1093/intqhc/mzt051.

Note: For health outcome performance measures, no further information is required; however, you may provide evidence for any of the structures, processes, interventions, or service identified above.

INTERMEDIATE OUTCOME, PROCESS, OR STRUCTURE PERFORMANCE MEASURE

1a.3. Briefly state or diagram the linkages between structure, process, intermediate outcome, and health outcomes. Include all the steps between the measure focus and the health outcome.

Not applicable.

1a.3.1. What is the source of the systematic review of the body of evidence that supports the performance measure?

- ☐ Clinical Practice Guideline recommendation – **complete sections 1a.4, and 1a.7**
- ☐ US Preventive Services Task Force Recommendation – **complete sections 1a.5 and 1a.7**
- ☐ Other systematic review and grading of the body of evidence (e.g., *Cochrane Collaboration*, *AHRQ Evidence Practice Center*) – **complete sections 1a.6 and 1a.7**
- ☐ Other – **complete section 1a.8**

Please complete the sections indicated above for the source of evidence. You may skip the sections that do not apply.

1a.4. CLINICAL PRACTICE GUIDELINE RECOMMENDATION

1a.4.1. Guideline citation (including date) and URL for guideline (if available online):

1a.4.2. Identify guideline recommendation number and/or page number and quote verbatim, the specific guideline recommendation.

1a.4.3. Grade assigned to the quoted recommendation with definition of the grade:

1a.4.4. Provide all other grades and associated definitions for recommendations in the grading system. (Note: If separate grades for the strength of the evidence, report them in section 1a.7.)

1a.4.5. Citation and URL for methodology for grading recommendations *(if different from 1a.4.1):*

1a.4.6. If guideline is evidence-based (rather than expert opinion), are the details of the quantity, quality, and consistency of the body of evidence available (e.g., evidence tables)?

☐ Yes → **complete section 1a.7**

☐ No → **report on another systematic review of the evidence in sections 1a.6 and 1a.7; if another review does not exist, provide what is known from the guideline review of evidence in 1a.7**

1a.5. UNITED STATES PREVENTIVE SERVICES TASK FORCE RECOMMENDATION

1a.5.1. Recommendation citation *(including date)* and URL for recommendation *(if available online):*

1a.5.2. Identify recommendation number and/or page number and quote verbatim, the specific recommendation.

1a.5.3. Grade assigned to the quoted recommendation with definition of the grade:

1a.5.4. Provide all other grades and associated definitions for recommendations in the grading system. *(Note: the grading system for the evidence should be reported in section 1a.7.)*

1a.5.5. Citation and URL for methodology for grading recommendations *(if different from 1a.5.1):*

Complete section 1a.7

1a.6. OTHER SYSTEMATIC REVIEW OF THE BODY OF EVIDENCE

1a.6.1. Citation *(including date)* and URL *(if available online):*

1a.6.2. Citation and URL for methodology for evidence review and grading *(if different from 1a.6.1):*

Complete section 1a.7

1a.7. FINDINGS FROM SYSTEMATIC REVIEW OF BODY OF THE EVIDENCE SUPPORTING THE MEASURE

1a.7.1. What was the specific structure, treatment, intervention, service, or intermediate outcome addressed in the evidence review?

1a.7.2. Grade assigned for the quality of the quoted evidence with definition of the grade:

1a.7.3. Provide all other grades and associated definitions for strength of the evidence in the grading system.

1a.7.4. What is the time period covered by the body of evidence? *(provide the date range, e.g., 1990-2010)*. Date range: [Click here to enter date range](#)

QUANTITY AND QUALITY OF BODY OF EVIDENCE

1a.7.5. How many and what type of study designs are included in the body of evidence? (*e.g., 3 randomized controlled trials and 1 observational study*)

1a.7.6. What is the overall quality of evidence across studies in the body of evidence? (*discuss the certainty or confidence in the estimates of effect particularly in relation to study factors such as design flaws, imprecision due to small numbers, indirectness of studies to the measure focus or target population*)

ESTIMATES OF BENEFIT AND CONSISTENCY ACROSS STUDIES IN BODY OF EVIDENCE

1a.7.7. What are the estimates of benefit—magnitude and direction of effect on outcome(s) across studies in the body of evidence? (*e.g., ranges of percentages or odds ratios for improvement/decline across studies, results of meta-analysis, and statistical significance*)

1a.7.8. What harms were studied and how do they affect the net benefit (benefits over harms)?

UPDATE TO THE SYSTEMATIC REVIEW(S) OF THE BODY OF EVIDENCE

1a.7.9. If new studies have been conducted since the systematic review of the body of evidence, provide for each new study: 1) citation, 2) description, 3) results, 4) impact on conclusions of systematic review.

1a.8 OTHER SOURCE OF EVIDENCE

If source of evidence is NOT from a clinical practice guideline, USPSTF, or systematic review, please describe the evidence on which you are basing the performance measure.

1a.8.1 What process was used to identify the evidence?

1a.8.2. Provide the citation and summary for each piece of evidence.