**Annotated Bibliography**

[Author Name(s), First M. Last, Omit Titles and Degrees]

University

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[Professor(s)]

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| APA REFERENCE CITATION | Singh, M., Guth, J. C., Liotta, E., Kosteva, A. R.,  Bauer, R. M., Prabhakaran, S., … & Naidech, A. M. (2013). Predictors of 30-day readmission after subarachnoid hemorrhage. *Neurocritical Care*, 19(3), 306-310.<https://doi.org/10.1007/s12028-013-9908-0> |
| PROBLEM/ISSUE  ADDRESSED IN THE  STUDY | The researchers identified a lack of data for rates of readmission for patients who suffered from subarachnoid hemorrhage. Since 30 day readmission is used more frequently to measure the quality of care, the study aimed to identify predictors of readmission in patients who suffered from subarachnoid hemorrhage. |
| PURPOSE OF STUDY | The researchers aim to identify if there are any predictors of 30 day readmission among patients who suffered from subarachnoid hemorrhage and in turn reduce cost of care by proactive identification. |
| STUDY METHODOLOGY | The study was performed by first defining the 30 day readmission for patients with subarachnoid hemorrhage. Next, with the definition and parameter set, an automated query was formulated to identify readmissions within 30 days for patients who suffered from the conditions and sought medical help between 2006 and 2012. The result was then cross referenced with electronic medical records that |

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|  | were available by a formal search. The study was approved by the Institutional Review Board, and written consents were obtained from each patient identified for the study. |
| PARTICIPANTS/SAMPLING PROCEDURE USED | The study identified 283 patients who suffered from subarachnoid hemorrhage between 2006 and 2012 using automated query and confirm data validation by cross referencing with electronic medical records. For the purpose of the study any individual who was discharged within 30 days of being admitted for subarachnoid hemorrhage, who were otherwise readmitted for any reason within the 30 days were included. The exception included individuals who made a trip back due to scheduled readmission, and evaluation in the emergency department without hospital readmissions. |
| VARIABLES AND  RELIABILITY AND  VALIDITY OF MEASURES | The variables identified from examining the patient population includes: demographic characteristics, the types of subcategories of conditions such as cerebral infarction and severity of neurological injury. Characteristics of patients admitted to the hospital with patients who were not readmitted within 30 days were compared. The validity of the study was measured by using statistical calculation using  Chi squared tests, Mann-Whitney U test. |

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| FINDINGS/RESULTS | 283 patients were identified for the purpose of the study, and of them 255 individuals survived to be discharged. From them, 21 patients were readmitted within 30 days of discharge. No correlations were identified with the variables tested in the study. The most common reasons for readmission included infection among 8 individuals, followed by headache among 5. The initial length of stay, and external ventricular drain placement were seen to be associated with readmission; however, they were nonspecific and did not show a clear prediction of 30 day readmissions. The study concluded that predicting or preventing readmission is difficult among patients suffering from SAH. |
| CONCLUSIONS BY RESEARCHER | The researchers concluded difficulty in identifying predictors for 30 day readmission amongst patients suffering from SAH. They stated that incidents that occur after discharge which are out of the hospital's control being the cause of 30 days readmissions. There were no correlations found between the variables identified above and 30 day readmission; however, the most common reason for readmission identified was due to infection after discharge. |
| STRENGTHS AND WEAKNESSES | Strengths: No conflicts of interests were identified. The condition SAH used for the purpose of the study was valid |
|  | because of the cost and expense associated in treating the acute conditions  Weakness: Sample size of the population was quite small and data was limited because the result only included patients from one hospital, Northwestern University Feinberg School of Medicine. Despite declaration of no conflict of interest all are employed at the place of study. |

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| APA REFERENCE CITATION | Stefan, M. S., Pekow, P. S., Nsa, W., Priya, A., Miller, L.  E., Bratzler, D. W., … & Lindenauer, P. K., (2012). Hospital performance measures and 30-day readmission rates. *Journal of General Internal*  *Medicine*, 28(3), 377-385.  <https://doi.org/10.1007/s11606-012-2229-8> |
| PROBLEM/ISSUE  ADDRESSED IN THE  STUDY | The study states the problem of readmission which can be quite costly to the US health care system. They state associations between hospital care and outcomes are inconsistent from prior literature. Therefore, they aimed to explore the quality measure of 30 day readmission rates for patients aged 66 or older who were discharged upon diagnosis and treatment for acute myocardial infarction, heart failure, pneumonia or undergoing major surgery related to abdomen, cardiology, vascular or orthopedics. |
| PURPOSE OF STUDY | The purpose of this study was to examine any associations between hospital performance on Medicare's Hospital Compare Quality Measure and 30 day readmission rate for patients suffering from heart failure, acute myocardial infarction, pneumonia and patients undergoing a major surgery. |
| STUDY METHODOLOGY | The cross-sectional analysis of hospital data from 2007 who participated in the Hospital Inpatient Quality Reporting |

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|  | Program were used to measure the conditions mentioned in two categories: the overall measures and appropriate care measure scores. Medicare claims were used to measure the rate of readmissions. |
| PARTICIPANTS/SAMPLING PROCEDURE USED | The study sampled patients aged 66 years and older who were Medicare recipient. The study chose patients who were discharged upon receiving treatment for illness including acute myocardial infarction, heart failure, pneumonia, undergoing major surgery related to abdomen, cardiology, vascular and orthopedics. Any patients who did not survive the set time period or index were excluded from the study.  International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) codes was used in accordance with the Specifications Manual for National  Hospital Quality Measures for 2007 hospital discharges. |
| VARIABLES AND  RELIABILITY AND  VALIDITY OF MEASURES | Two elements of hospital performance were measured for each of the conditions. “Overall Measure” and “Appropriate Care Measure”, were used to evaluate the quality of care across the different treatments mentioned. Then the data was compared and analyzed using the standardized readmission rate for the hospitals which yielded no |

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|  | meaningful data. Validity in the data lies on the use of patient level or patient specific data for quality of care scores evaluated. |
| FINDINGS/RESULTS | Study conducted with data from 2700 hospitals yielded result which showed little to no associate between hospital performance on the quality of care and its measurements and 30 day readmission rate across the various treatments for illnesses mentioned. The data was so insignificant that less than 1% of the variations observed were accounted for by the readmission rates across the hospitals examined. The study also cited previous studies which found similar result of hospital discharge instruction disassociation with 30 day readmission results. |
| CONCLUSIONS BY RESEARCHER | Hospitals that followed the quality care process specified by Medicare, did not show evidence of decreased numbers of hospital readmission for patients within 30 days of discharge when compared to hospitals that ranked lower in the quality care process on the same measure.  Study conducted with data from 2700 hospitals yielded result which showed little to no associate between hospital performance on the quality of care and its measurements and 30 day readmission rate across the various treatments for illnesses mentioned. The data was so insignificant that less |
|  | than 1% of the variations observed were accounted for by the readmission rates across the hospitals examined. The study also cited previous studies which found similar result of hospital discharge instruction disassociation with 30 day readmission results. |
| STRENGTHS AND WEAKNESSES | Strength of the study lies in supporting multiple previous studies which came to the same conclusion using different types of study and data. Additionally, this study focused primarily of first-hand patient level data and evaluated hospital readmission using a standardized performance score.  Weaknesses include: use of fee for service Medicare patients and the approach of using risk adjustment data based on administrative claims. Additionally, discharge instructions evaluated in the data doesn’t guarantee the patient adhered to them upon discharge. Lastly, a large population was excluded from the study because the boundaries set by the study focused on specific demographics. |

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| APA REFERENCE CITATION | Joynt, K. E., & Jha, A. K. (2012). Thirty-day readmissions – Truth and consequences. *New England Journal of*  *Medicine*, 366(15), 1366-1369.  <https://doi.org/10.1056/nejmp1201598> |
| PROBLEM/ISSUE  ADDRESSED IN THE  STUDY | This study challenges the policymakers and the Affordable Care Act for enacting its provision of penalizing hospitals for increased number of 30 day readmission rates in a year. The authors states that 30 day readmission is a faulty measure because: only a small portion of readmissions are preventable, there are other targeted policies that can be enacted rather than improving discharge planning and hospitals have stopped caring for quality improvement effort by expending more energy in reducing readmissions. |
| PURPOSE OF STUDY | The purpose is to analyze whether hospitals diverting their resources to only focus on the 30 day readmission based on limited illnesses used by the Centers for Medicare and  Medicaid Services. |
| STUDY METHODOLOGY | The authors used data from past studies and data from  Medicare available to public for the purpose of the study. |
| PARTICIPANTS/SAMPLING PROCEDURE USED | Only data from public records of Medicare for years 2002 to 2009 were used. |
| VARIABLES AND  RELIABILITY AND  VALIDITY OF MEASURES | Variables measured were time and Risk adjusted 30 day readmissions. |
| FINDINGS/RESULTS | At the time the ACA only measured for 3 conditions: acute myocardial infarction, congestive heart failure and pneumonia. The authors mentions 30 day readmission rate over time have remained the same both in the US and when compared to data available from Canada. |
| CONCLUSIONS BY RESEARCHER | The authors concluded that there are other modes of readmission that are more likely to be controlled by hospitals such as a measure of 3 days or 7 days rather than 30 days.  The authors’ states hospitals should be focusing on actual quality improvement efforts and prevention policies rather than 3 conditions which are often outside of hospital’s control. |
| STRENGTHS AND WEAKNESSES | Strengths lies in the comparison of different areas where the policymaker can focus on more.  Weaknesses lie in the use of limited sources. In this case the primary statistical data used for the purpose of the study was mostly ones from a study of readmissions in Canadian hospitals. The study doesn’t account for the different types of healthcare systems that each of the countries operate. There are limited studies used to make the qualitative arguments in the research. |

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| APA REFERENCE CITATION | Bradley, E. H., Curry, L., Horwitz, L. I., Sipsma, H., Wang, Y., Walsh, M. N., & Krumholz, H. M. (2013). Hospital strategies associated with 30-day readmission rates for patients with heart failure. *Circulation: Cardiovascular*  *Quality and Outcome,* 6(4), 444-450.  <https://doi.org/10.1161/circoutcomes.111.000101> |
| PROBLEM/ISSUE  ADDRESSED IN THE  STUDY | There is limited evidence or data available for hospital strategies utilized in an effort to lower readmission rates. |
| PURPOSE OF STUDY | The purpose of the study is to identify the various policies and strategies employed by hospitals in order to lower hospital readmission for patients suffering from heart failure. |
| STUDY METHODOLOGY | The study used a cross sectional web-based survey of 658 hospitals which participated in national quality initiatives in order to reduce readmission for the years 2010 and 2011. |
| PARTICIPANTS/SAMPLING PROCEDURE USED | The study obtained Internal Review Board exemption for the study because the participants were not required to be identified or provide personal information for the study. The researchers contacted all hospitals participating in the two national quality initiatives to reduce readmission programs in order to obtain data. 91% or 599 of 658 hospitals used in the study consistently reported their results from the survey for the purpose of the study. Hospital respondent collected |

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|  | their respective data from relevant staff. Responds included were from quality management departments, clinical departments, cardiology departments, case managements and non-clinical roles. |
| VARIABLES AND  RELIABILITY AND  VALIDITY OF MEASURES | The focus of the study was heart failures due to higher than average readmission observed from patients of other diseases groups. The study used multiple variables which included use of linear regression model weighted by hospital volume, independent strategies used in risk standardized 30 day readmission (RSRR), geographic location, number of staffed bed and hospital teaching status. The study was valid in its use of statistical analyst of multiple variables in order to assess and obtain evidence for RSRR for hospitals which implemented different strategies. |
| FINDINGS/RESULTS | The authors cited previously conducted study which provided limited scope into observable links between different hospital strategies to reduction of 30 day readmission. Upon conducting the study, various analyses led to exclusion of hospitals with missing data, and for the purpose of the study 571 hospital data were deemed to be useable. The study identified 6 strategies utilized by hospitals to have lower RSRR: partnering with community physicians |

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|  | or groups, partnering with local hospitals, hold nurses accountable for medication reconciliation, arrange follow up appointment prior discharge, sending discharge paper and summaries to primary care physicians, and assigning staff to follow up on test results after discharge. They also identified 4 strategies to have higher RSRR which include: frequent linking of outpatient and inpatient prescription records electronically, providing patients written emergency plan upon discharge, keeping a reliable process to ensure outpatient physicians are alerted about discharge within 48 hours, and regularly calling patients after discharge to follow up and provide educational materials. |
| CONCLUSIONS BY RESEARCHER | The study found 6 strategies utilized by hospitals to be linked with lower risk standardized 30 day readmissions in their analysis. They identified a significant association in community driven strategies to be most effective in lowering readmission rates. The researchers were stunned by the 4 strategies utilized to have higher risks because the strategies themselves seem to be derived from quality prevention policies. The authors conclude this could be due to information overload where the hospitals have to keep data communication between outpatient, inpatient doctors and the |
|  | patients in their discharge strategies. The authors blame unintended consequences of intervention for the higher RSSR. |
| STRENGTHS AND WEAKNESSES | The researchers state their limitation in the study by mentioning the study being cross-sectional which can sideline causality and unmeasured variables. They also cite having limited information about methods of implementation from the sample size. They also did not take account of demographic information for each of the hospitals where socioeconomic information could be factors. Lastly, not all hospitals around the country participated and data was available from those who chose to participate. Their strengths lie in plausible association identified by randomized controlled trials using national data, use of similar methodology as the Centers for Medicare & Medicaid Services , statistical analysis used in identification of strategies used in finding a link with lowering or higher risks of readmissions from the hospitals. |

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| APA REFERENCE CITATION | Larker, C. (2011). Decreasing 30- day readmission rates.  *American Journal of Nursing* 111 (11), 65-69.  <https://doi.org/10.1097/01.naj.0000407308.53587.02> |
| PROBLEM/ISSUE  ADDRESSED IN THE  STUDY | As many as 20% of hospitalization for Medicare recipient are cited to be readmitted which contributes to the 1/3 cost of the $2 trillion annual cost of the health care in the US.  The purpose of this piece is to help provide nurses with better strategies in order to contribute to reduction in hospital readmissions within 30 days. |
| PURPOSE OF STUDY | The purpose is to address and discuss various ineffective and effective strategies involved in reducing hospital readmission. |
| STUDY METHODOLOGY | The author utilized the Pennsylvania Patient Safety  Reporting System which is a statewide reporting system all  Pennsylvania healthcare facilities utilizes to file information. In addition, the author utilizes past research which addresses and provides trends of 30 day readmission data. |
| PARTICIPANTS/SAMPLING PROCEDURE USED | Case studies used for patients who were readmitted due to the following of ineffective strategies. Individual or patients are not named and no personal information divulged. |
| VARIABLES AND  RELIABILITY AND  VALIDITY OF MEASURES | Additional studies are cited where one study looked at utilization of nurses to educate and advocate in effort to |

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|  | reducing 30 day readmission, and another collaborative effort where the aim was to reduce 30% of 30 day readmission.  Variables which were discussed include:  performing admission assessments, providing effecting teaching and enhanced learning, real time patient family communication, and post-hospital follow-up. |
| FINDINGS/RESULTS | The author cited the STAAR initiative study for identifying 5 strategies showing evidence of reduction in readmissions. The strategies are comprehensive discharge planning with timely communication, post discharge support, multidisciplinary team-based management, patient education and remote monitoring services. |
| CONCLUSIONS BY RESEARCHER | The author urges nurses to utilization various strategies in their effort to reduce 30 day readmission for healthcare facilities and in effort reduce the overall health care cost. The author asks nurses to practice data collection and admission assessments to understand the patient and their needs, be actively involved in teaching and communicating effectively with the patients and their families, and urges nurses to have a system of post-hospital care follow up via phone call in order to ensure the patients are following their regiments and to ensure effective care is provided. |
| STRENGTHS AND WEAKNESSES | The strengths of the periodical involves in providing anecdotal and real life perspective from nurses who reported ineffective methods and strategies involved which led to multiple hospital readmission for discharged patients. The weakness of the periodic lied in the lack of stating how effective the best practices discussed were in comparison to ineffective strategies. In this case the author cites a previous study mentioning the effective strategies but does not provide data to support the claims.  The periodic serves as a reminder and advisory piece to nurses, in an effort to promote practices and reduce hospital readmissions. |