

Medication Reconciliation: It's in the Bag

Dawn Becker, DNP, RN, CEN, ACNS-BC



Medication Discrepancy

- Unexplained differences in documented medications between various points of care
- Have varying degrees of clinical significance:
 - may result in serious harm to patients
 - prolonged hospitalizations
 - post-discharge emergency department visits
 - readmissions
 - use of other healthcare resources



Reasons for Medication Discrepancies

- Miscommunication
- Financial disparities
- Personal preference
- Lack of understanding
- Physical abilities
- Health literacy



Local Strategies

- 2- day post-hospitalization phone calls by health coaches
(Cawthon et al., 2012; Costa & Poe, 2011; Kripalani et al., 2012)
- 7-day post-hospitalization follow-up visits
(Dedhia et al., 2009)
- Home visits for high-risk patients
(Costa & Poe, 2011)
- Low-reading level medication pamphlets
(Cawthon et al., 2012; Kripalani et al., 2012)
- Case management aligned with medical practices
(McCoy, Davidhizer, & Gillum, 2007)



PICO Question

- In adult, inpatient, medical-surgical patients discharged to home with prescriptions, does the implementation of a bag medication reconciliation initiative, compared to usual care, result in decreased medication discrepancies at follow-up?



Evidence Synthesis

- Johns Hopkins Nursing Evidence-based Practice Model
(Dearholt & Dang, 2012)
- Databases searched: CINAHL, PubMed, AHRQ
- Key words: “brown bag,” “discharge,” “adverse drug events” and “medication discrepancies”
- 41 articles used for the synthesis
 - 34 quantitative articles
 - 3 qualitative articles
 - 1 expert opinion
 - 3 quality improvement

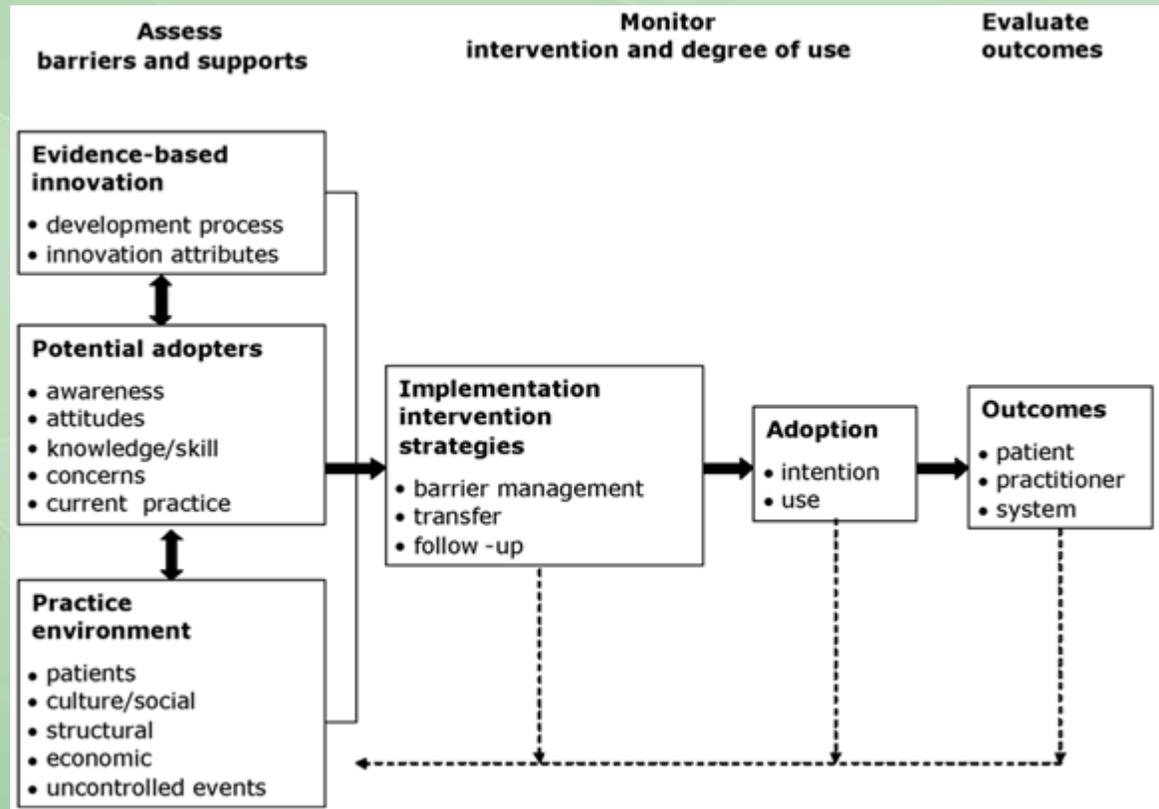


Translation Model

- Ottawa Model of Research Utilization (Logan & Graham, 1998)
- Non-linear approach
- Involves patients in projects
- It is not sequential, but takes place over time and the sequence changes depending on the context
- The environment will affect all aspects of the process



Ottawa Model



Planning

- Identified project unit
 - 22-bed medical telemetry unit
- 2 Medical groups
 - Medical Residency service
 - Family Practice Residency service
- Hospital leadership
 - Clinical director of medical services
- 2 Outpatient clinics
 - York Healthy Community Clinic
 - Thomas Hart Family Practice Center



Implementation

- Medication reconciliation bag initiative
 - All patients discharged to home
 - Member of the medical or family practice residency services
 - Patients/families given instructions
 - Post-hospitalization phone calls made within 2 days
 - Follow-up appointment planned within 7 days
 - Providers completed medication reconciliation at follow-up
 - Safety Reporting System event filed for medication discrepancies
- List of patients receiving bags
- Two out patient clinics were asked to keep records of bags returned



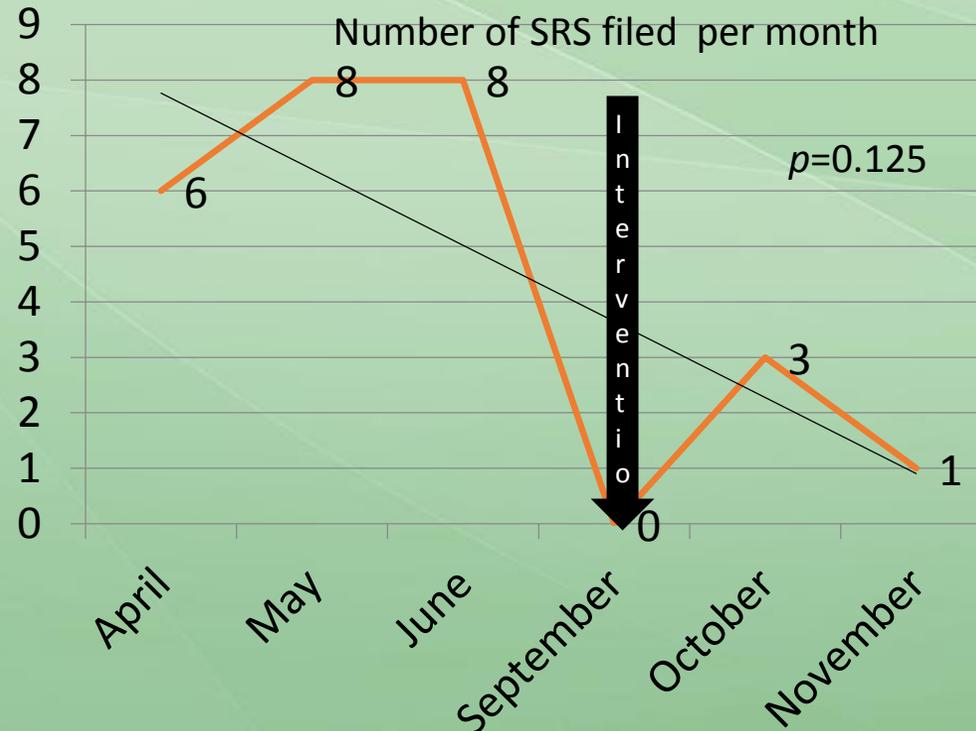
Evaluation Methods

- SRS reports compared pre and post implementation data
 - Pre-implementation data: April, May, June, 2013 (236 patients)
 - Post-implementation data: September, October, November, 2013 (203 patients)
- Demographic data
 - From all patients discharged from the project unit to home



Results

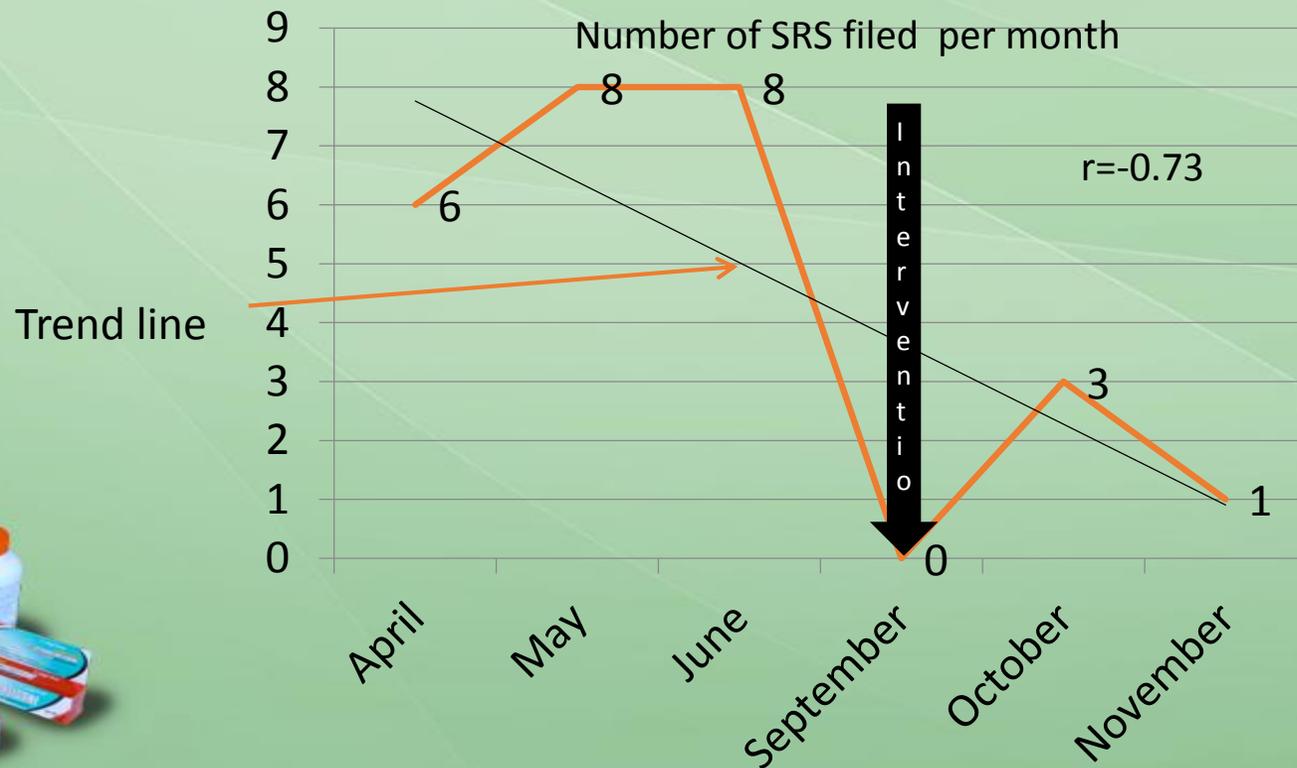
- Pre-implementation: 22 SRS filed from a total of 236 patients discharged to home (9.3%)
- Post-implementation: 4 SRS filed from a total of 203 patients (2.0%)
- Cox Stuart test produced a *probability* value of 0.125



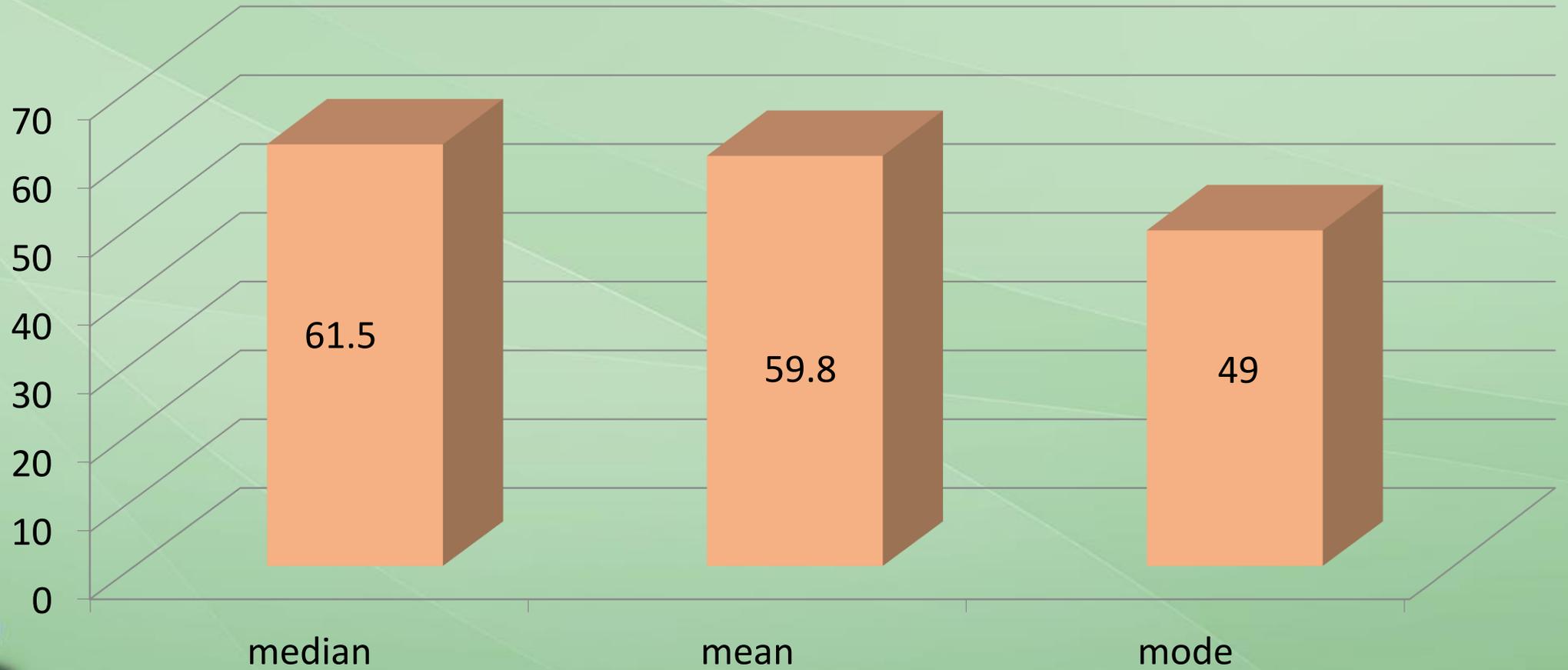
Results

- Pearson's Correlation

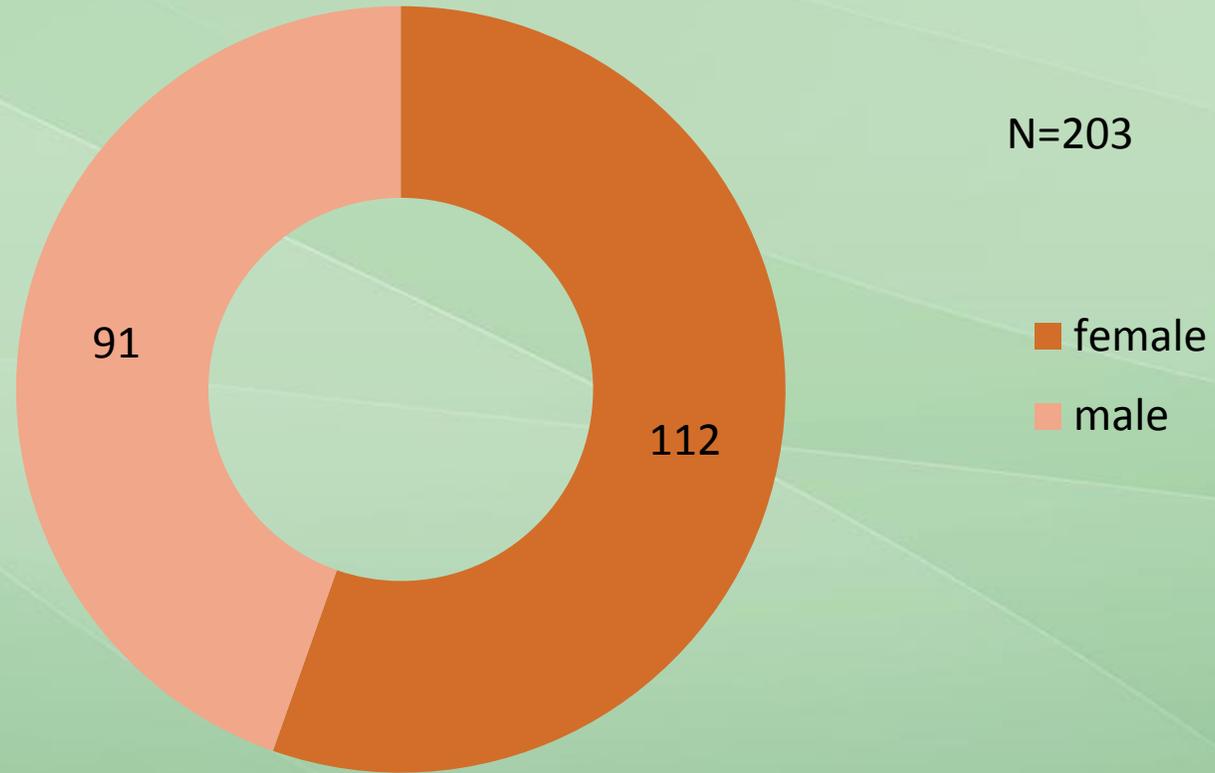
- $r = -0.73$ indicating a strong inverse relationship between the decrease in SRS filings and passage of time



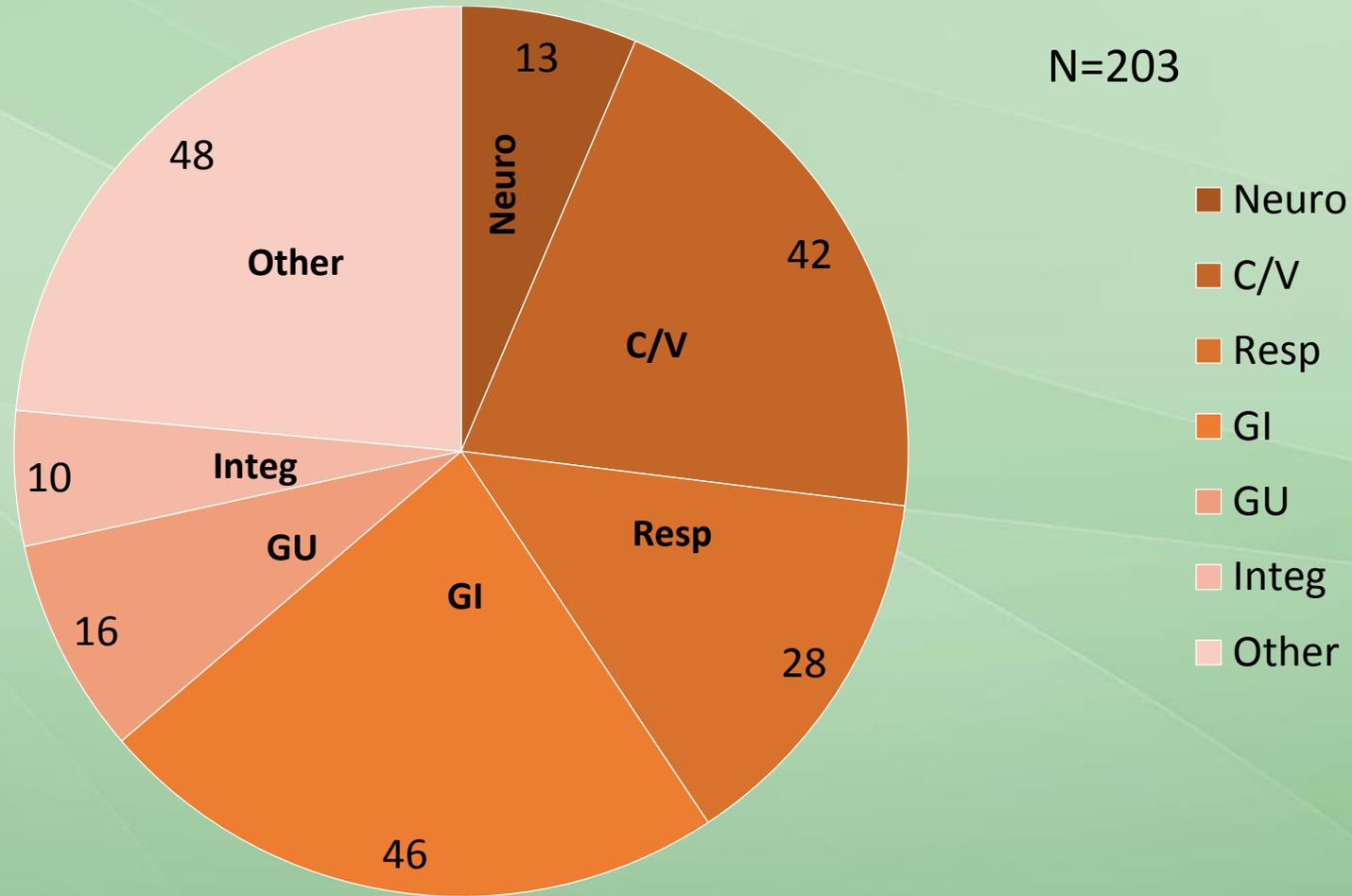
Demographics: AGE (18-94)



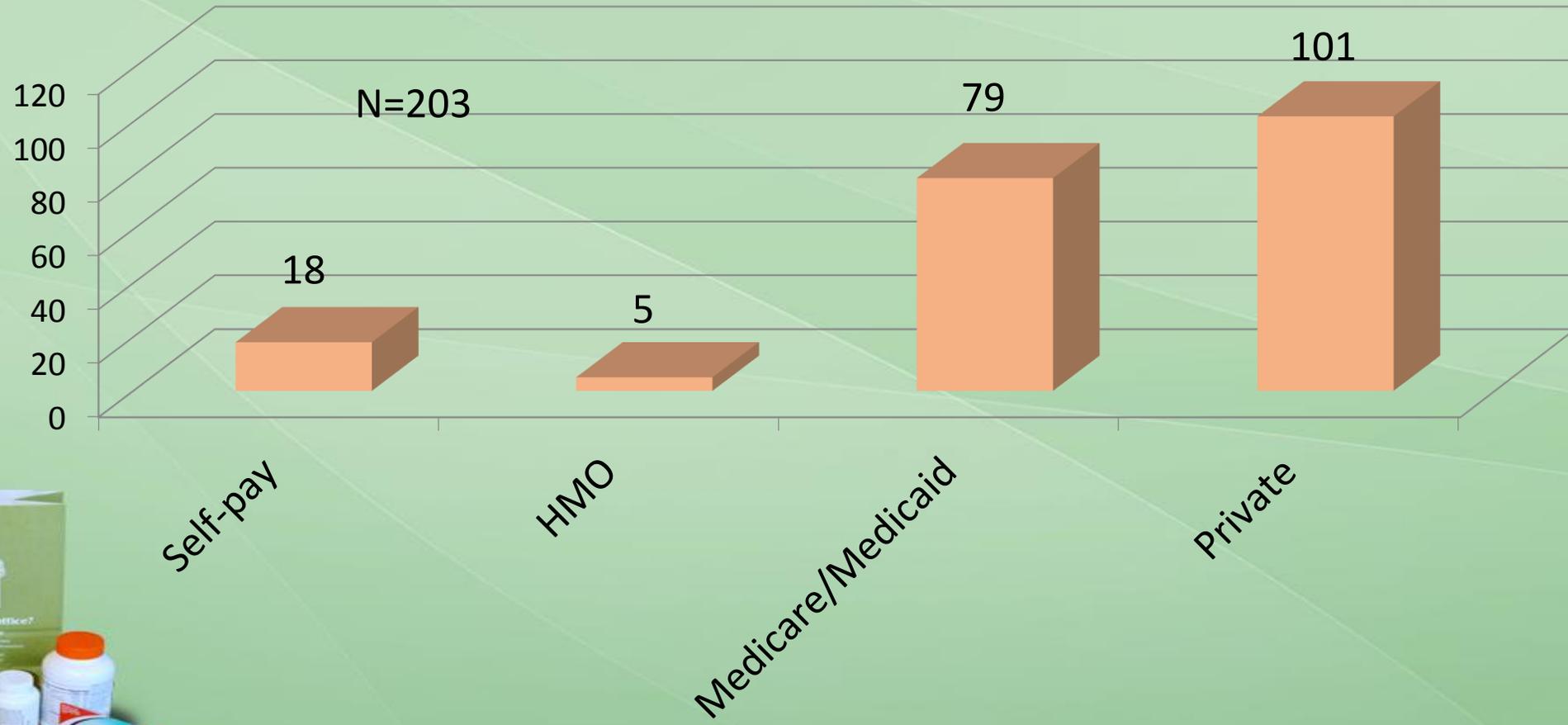
Demographic: Gender



Demographics: Type of Illness

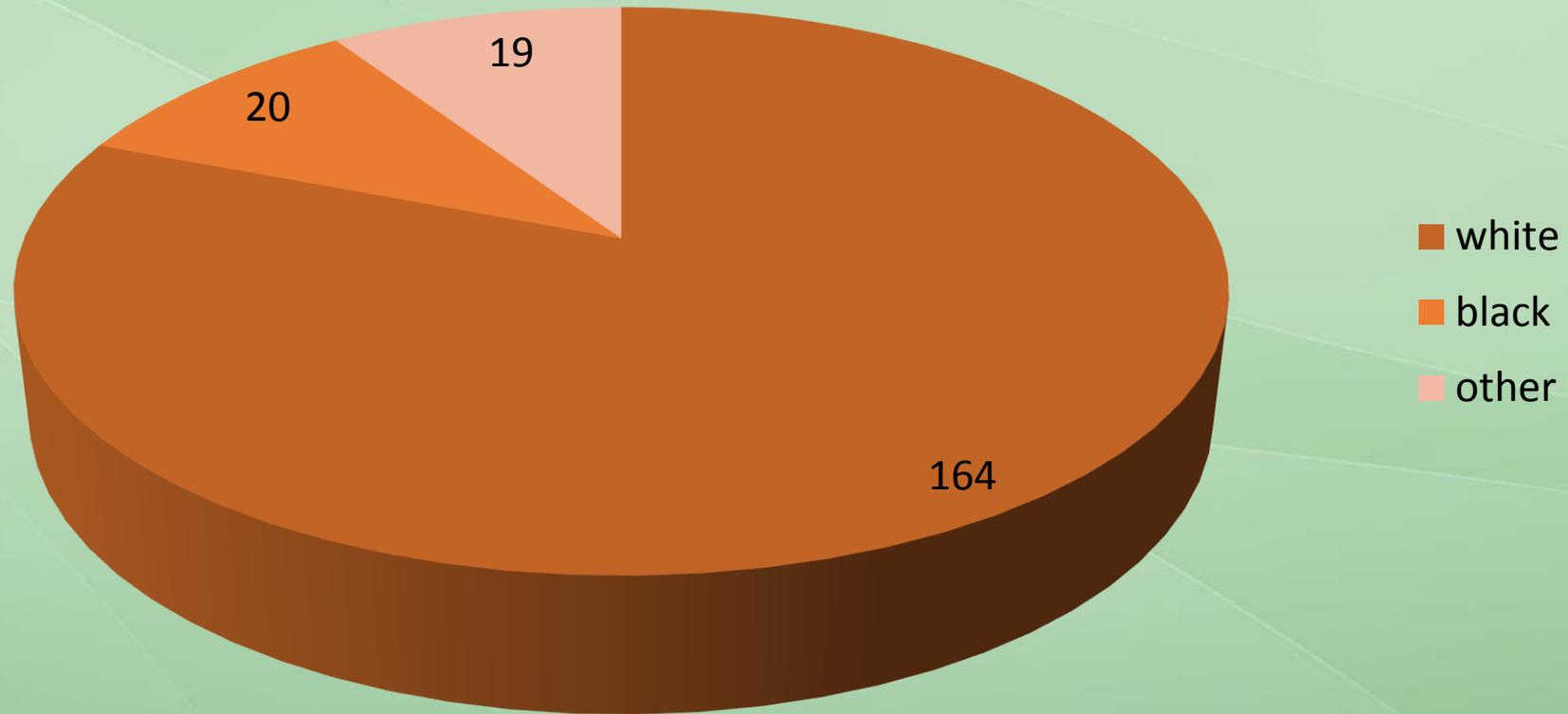


Demographic: Insurance Type

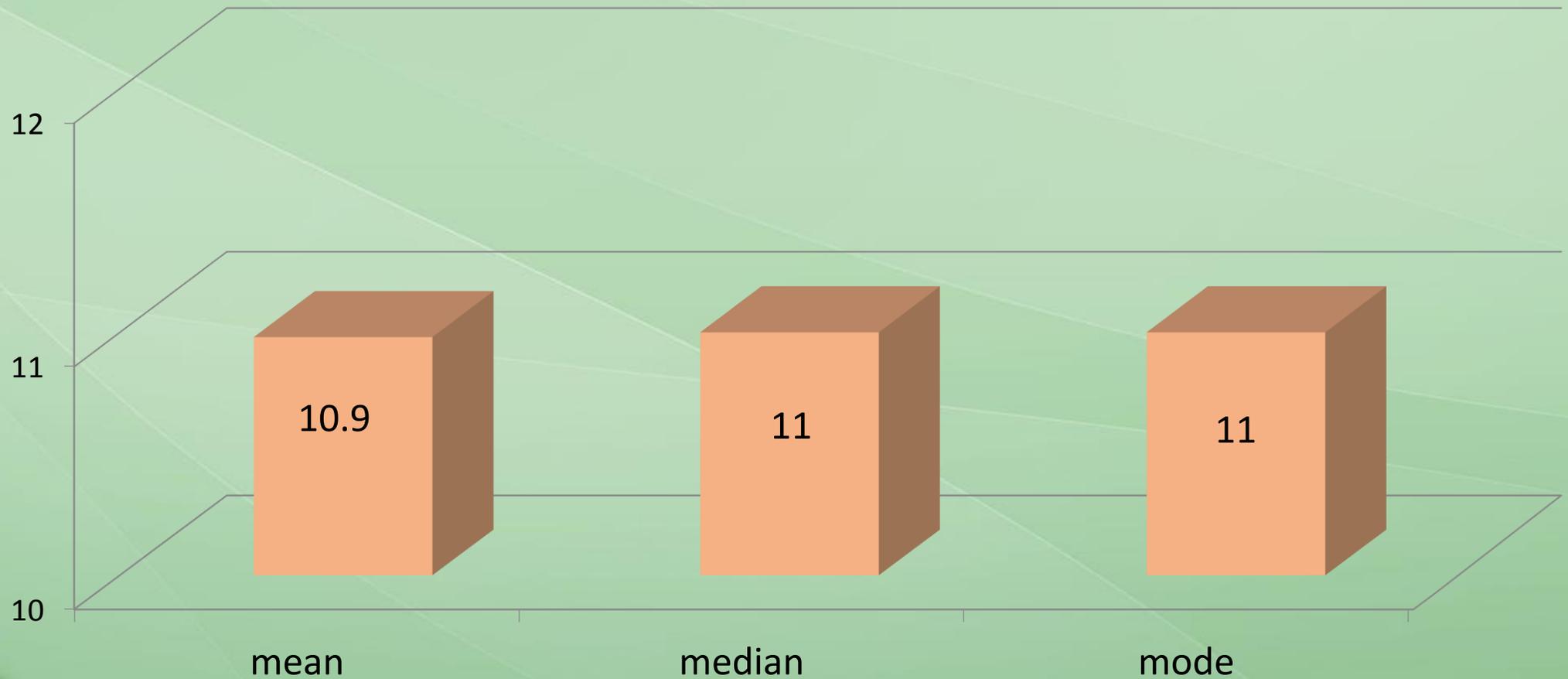


Demographic: Race

N=203



Demographic: Number of Medications (Range 0-34)



Financial Implications

- Estimated cost of readmission per patient \$10,240.00
- Cost of bag medication intervention \$ 1,782.00

- Preventing 1 readmission per quarter \$40,960.00



Limitations

- May have limited translation to more racially diverse areas
- SRS has limited validity due to the self-report process
- Small population over 200 patients in the project, but the hospital discharges an average of 100 patients per day
- Medical residency only cares for 10% of the patient population
- No record of whether the patient returned with the bag



Summary

- There was a 7.3% decrease in SRS filings after the bag medication initiative
- Potential cost avoidance of over \$40,000.00 annually after bag medication intervention
- No time was added to the hospital discharge process
- Simple
- Cost-efficient



Next Steps

- Wider implementation
- Enhanced data collection
- Continue stakeholder involvement



Conclusions

- Multidisciplinary teams are necessary to sustain change
- Medication education is essential at transitions of care
- Decreasing medication discrepancies requires a multi-faceted approach
- The bag medication reconciliation intervention is low cost initiative to decrease medication discrepancies.



References

- Acock, A. C., & Stavig, G. R. (1979). A measure of association for nonparametric statistics. *Social Forces*, 57(4), 1381-1386.
- Agency for Healthcare Research and Quality (2012). Medication adherence interventions: Comparative effectiveness. *Evidence Report/Technology Assessment*, 208, 1-685.
- Cawthon, C., Walia, S., Osborn, C. Y., Niesner, K. J., Schnipper, J. L., & Kripalani, S. (2012). Improving care transitions: The patient perspective. *Journal of Health Communication*, 17(3), 312-324. doi:10.1080/10810730.2012.712619
- Centers for Medicare & Medicaid Services (2007). Medicare & Medicaid Statistical Supplement. Retrieved October 26, 2013, from <http://www.cms.hhs.gov/MedicareMedicaidStatSupp/downloads/2007//table5.1.pdf>
- Coleman, E. A., & Chalmers, S. (2006). The care transitions intervention: Results of a randomized controlled trial. *Archives of Internal Medicine*, 166(1), 1822-1828.
- Costa, L. L., & Poe, S. S. (2011). Challenges in post-hospital care: Nurses as coaches for medication management. *Journal of Nursing Care Quality*, 26(3), 243-251. doi:10.1097/NQC.0b013e31820e1543
- Cox, D. R., & Stuart, A. (1955). Some quick tests for trend in location and dispersion. *Biometrika*, 42, 80-95.
- Dearholt, S., & Dang, D. (Eds.). (2012). *Johns Hopkins Nursing Evidence-Based Practice: Model and Guidelines* (2nd ed.). Indianapolis, IN: Sigma Theta Tau International.
- Dedhia, P., Kravet, S., Bulger, J., Hinson, T., Sridharan, A., Kolodner, K.,...Howell, E. (2009). A quality improvement intervention to facilitate the transition of older adults from three hospitals back to their homes. *Journal of the American Geriatric Society*, 57(9), 1540-1546. doi:10.1111/j.1532-5415.2009.02430.x
- Kripalani, S., Roumie, C. L., Dalal, A. K., Cawthon, C., Businger, A., Eden, S. K.,...Schnipper, J. L. (2012). Effect of a pharmacist intervention on clinically important medication errors after hospital discharge: A randomized trial. *Annals of Internal Medicine*, 157(1), 1-10.
- Logan, J., & Graham, I. D. (1998). Toward a comprehensive interdisciplinary model of health care research use. *Science Communication*, 20(2), 227-246.
- McCoy, M. L., Davidhizer, R., & Gillum, D. R. (2007). A correlational pilot study of home health nurse management of heart failure patients and hospital readmissions. *Home Health Care Management and Practice*, 19(5), 392-396. doi:10.1177/10848223073000926
- Mueller, S. K., Sponslor, K. C., Kripalani, S., & Schnipper, J. L. (2012). Hospital-based medication reconciliation practices: A systematic review. *Archives of Internal Medicine*, 172(14), 1057-1069. doi:10.1001/archinternmed.2012.2246
- Nathan, A., Goodyer, L., Lovejoy, A., & Rashid, A. (1999). Brown bag medication reviews as a means of optimizing patients' use of medication and of identifying potential clinical problems. *Family Practice*, 16(3), 278-282.
- Salkind, N. J. (2010). *Statistics for people who (think they) hate statistics* (3 ed.). Los Angeles, CA: Sage.
- Shillman, C., Orton, V., Waring, D., & Madsen, S. (2013). Faith community nurses & brown bag events help older adults manage meds. *Journal of Christian Nursing*, 30(2), 90-96.



