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# The Effect of Professional Interpretation on Inpatient Length of Stay and Readmission Rates

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# About UMass Memorial Medical Center

- A 781-bed (plus 63 bassinets) acute care not for profit organization, clinical partner of the University of Massachusetts Medical School
- Comprised of three teaching hospitals and ambulatory practices
- Located in Worcester, MA, an ethnically and racially diverse city, 40 mi W of Boston
- The largest and most sophisticated emergency service in the region
- Level I trauma center for adults and pediatrics, supported by Life-Flight, New England's first air ambulance service
- Level III NICU for high-risk obstetrical and neonatal care





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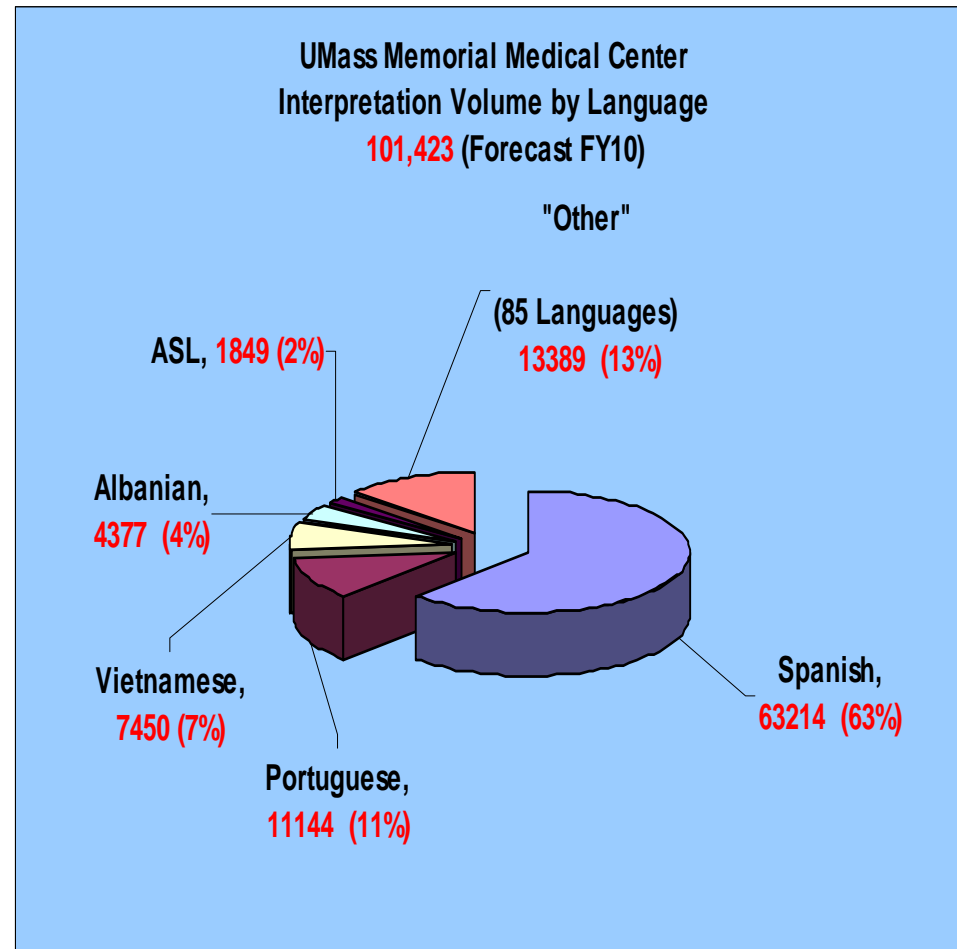
# About UMass Memorial Interpreter Services Department

- Largest and most comprehensive hospital based program in central Massachusetts
- QI systems and interventions have received national and international attention. Showcased in the RWJ and AHCRQ Innovations Exchange's websites
- Staff: 35.25 FTE. Director (1), Coordinators (2), 52 interpreters and support staff
- OPI vendors: 30 % of overall interpretation volume



# Language Volume FY-10

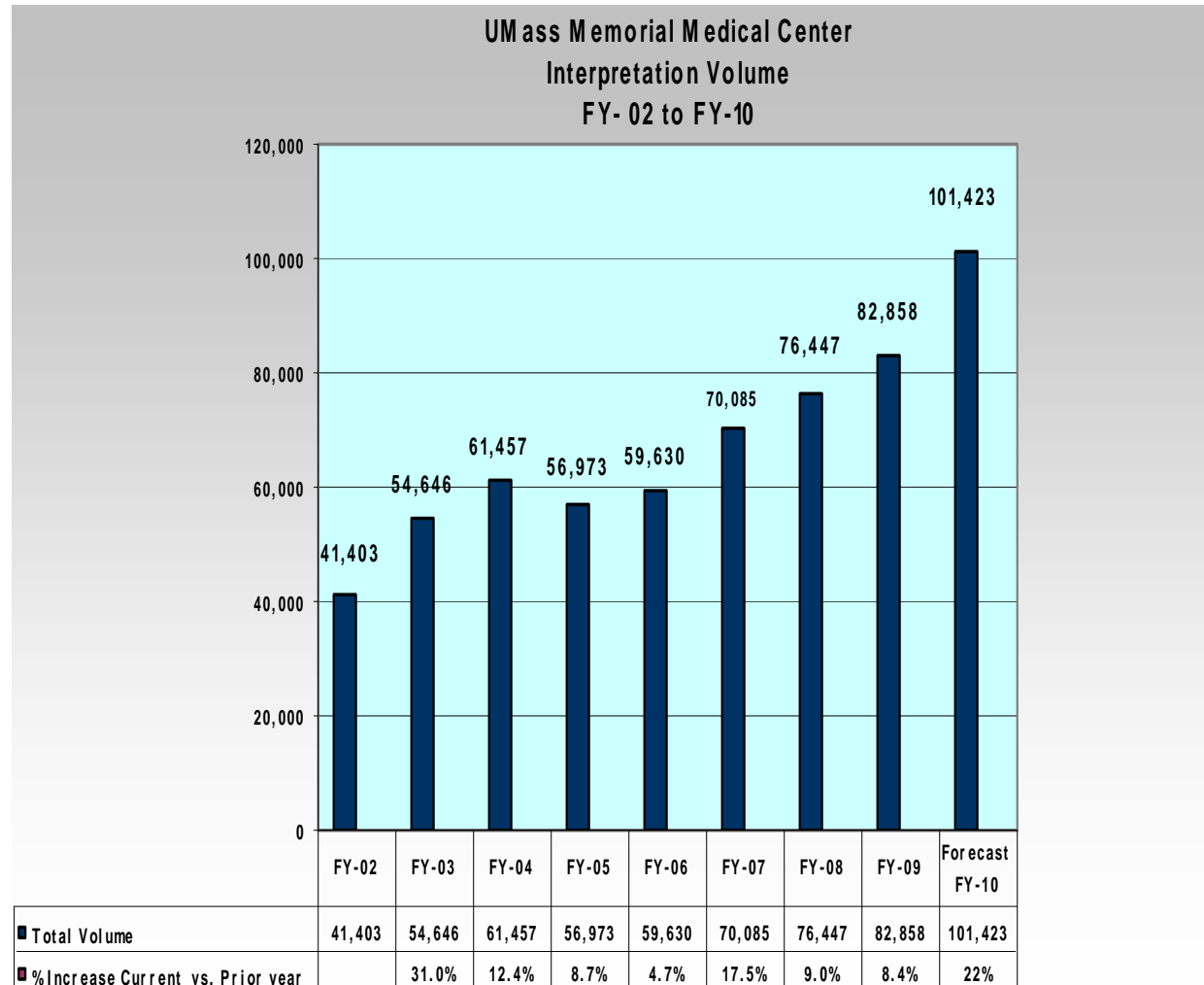
- **90** Languages on demand vs. **51** in FY-07
- **43.8 %** increase in pool of **85** “Other” Languages
- **250 %** Increase in **Arabic**
- **2,250 %** Increase in **Nepali**





# FY-10 Interpretation Volume: *144 % Increase from FY-02*

- **101,423** Interpretation encounters
- **68,967** Ambulatory
- **13,306** ED
- **10,527** Surgery
- **11,156** Inpatients
- **8,623** Other areas





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## LS Quality Improvement Goals

- Increasing % of patients receiving LS through qualified interpreters
- Reducing patient-provider waiting time for an interpreter:  
*86 % of patients waited 15" or less*
- Maintaining a highly qualified interpreter work force, including contractors and OPI vendors:
- Increasing productive of on-site interpreters



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# Background

- Language barriers can adversely affect health
- Low English Proficient (LEP) patients who do not receive professional interpretation have a poorer understanding of their discharge diagnosis and treatment plan
- Use of non professional interpreters can lead to medical errors and misinterpretation of up to half of physicians' questions
- Professional interpreters help improve patient's understanding and utilization of healthcare





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# Adverse Outcomes: LEP Patients

- Asthmatic children with LEP parents 3 times more likely to be intubated for their asthma than those with English proficient parents  
(LeSon & Gershwin. *J Asthma* 1995;32:285-294)
- Monolingual Spanish-speaking adults with asthma whose physicians speak English: 3 times more likely to miss 1 or more follow-up appointments  
(Manson. *Med Care* 1988;26:1119)





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## Health Status and Communication

LEP patients who need but don't get interpreters are more likely than LEP patients who used interpreters and EP patients to:

- Have poor or fair self-reported understanding of diagnosis and treatment plan
- Wish healthcare provider explained things better

*(Baker et al. JAMA 1996)*



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# Joint Commission study on adverse events

- Study of six hospitals over seven months
- 49.1 vs 29.5% of adverse events with LEP patients resulted in physical harm
- 46.8 vs 24.4% of adverse events with LEP patients classified as moderate transient to death
- LEP adverse events more likely to be due to communication error (52.4% vs. 35.9%)
  - *Divi et al. Intl J Quality in Hlth Care 2007; 19: 60-67*



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# Objectives

- To examine interpretation trends of LEP inpatients during their admission at a tertiary care medical center
- To compare patient self identified need for interpretation with actual interpreted encounters
- To compare inpatient interpreter usage with length of stay (LOS) and readmission rates
- To interview patients about their interpreter usage to qualitatively assess their experience



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## Methods

- Data base of inpatients requiring interpretation for three years and their diagnosis and LOS collected
- Professional interpretation utilization for same three years obtained
- Readmission rates to hospital within 30 days calculated
- Comparison of LOS, and readmission rates with interpretation utilization
- Patient interviews



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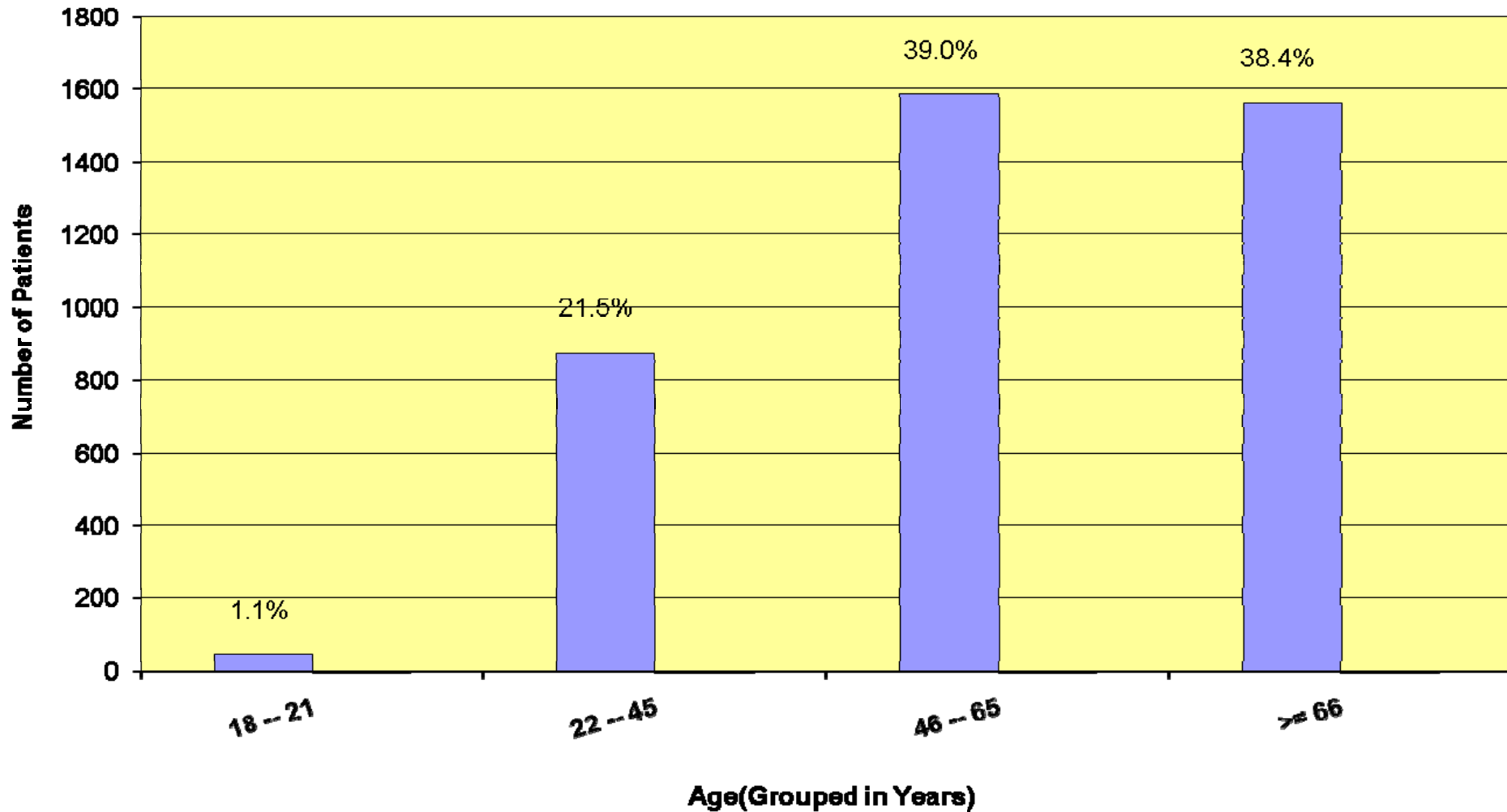


# Patients with Limited English Proficiency in the Sample

<b>Initial Sample of patients</b>	4100
Patients with no interpretation events	973
Patients with LOS=0	54
Patients with LOS > 85	2
<b>Analytic Sample</b>	<b>3071</b>



# Patient Age

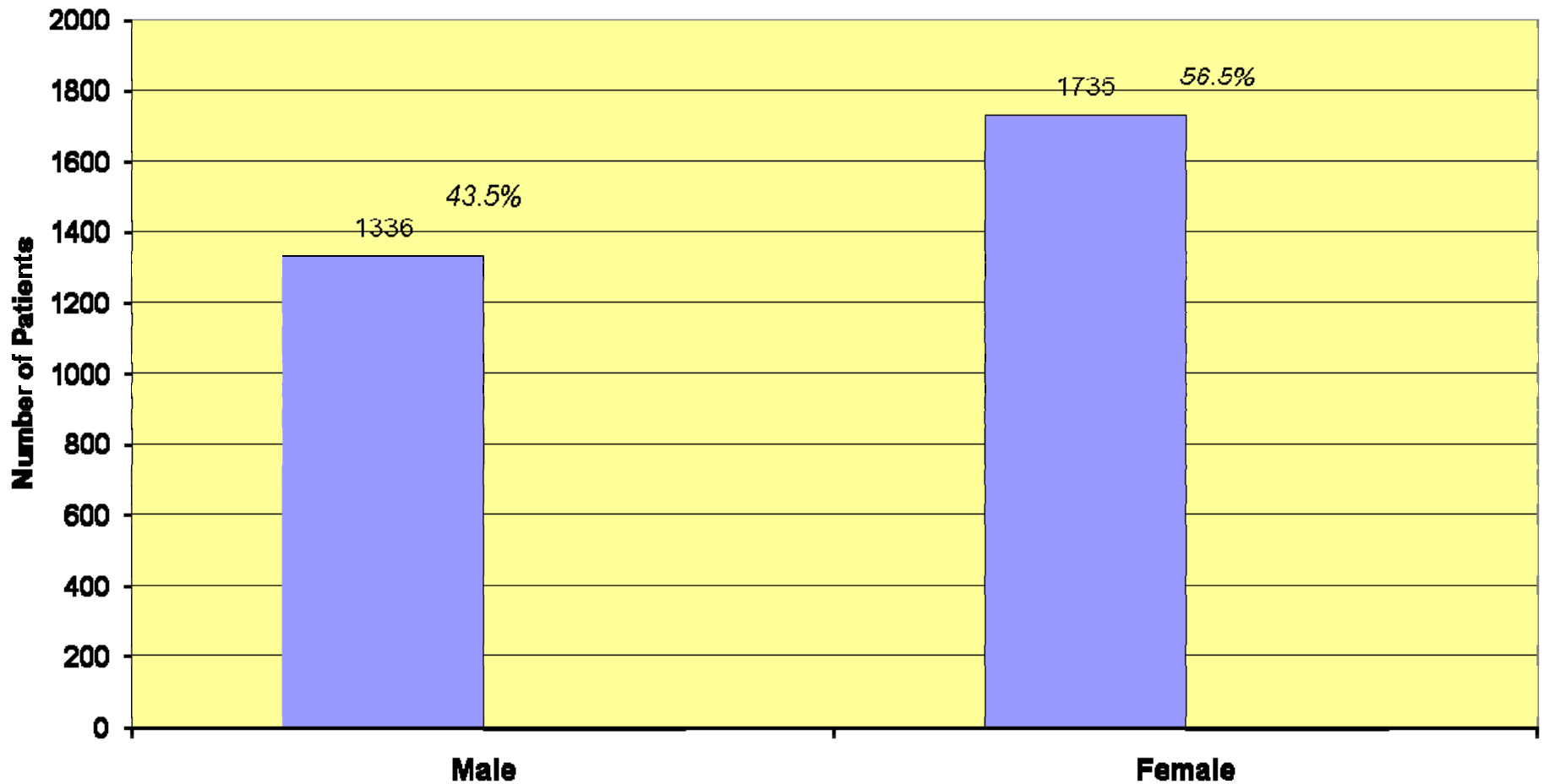




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# Patient Gender



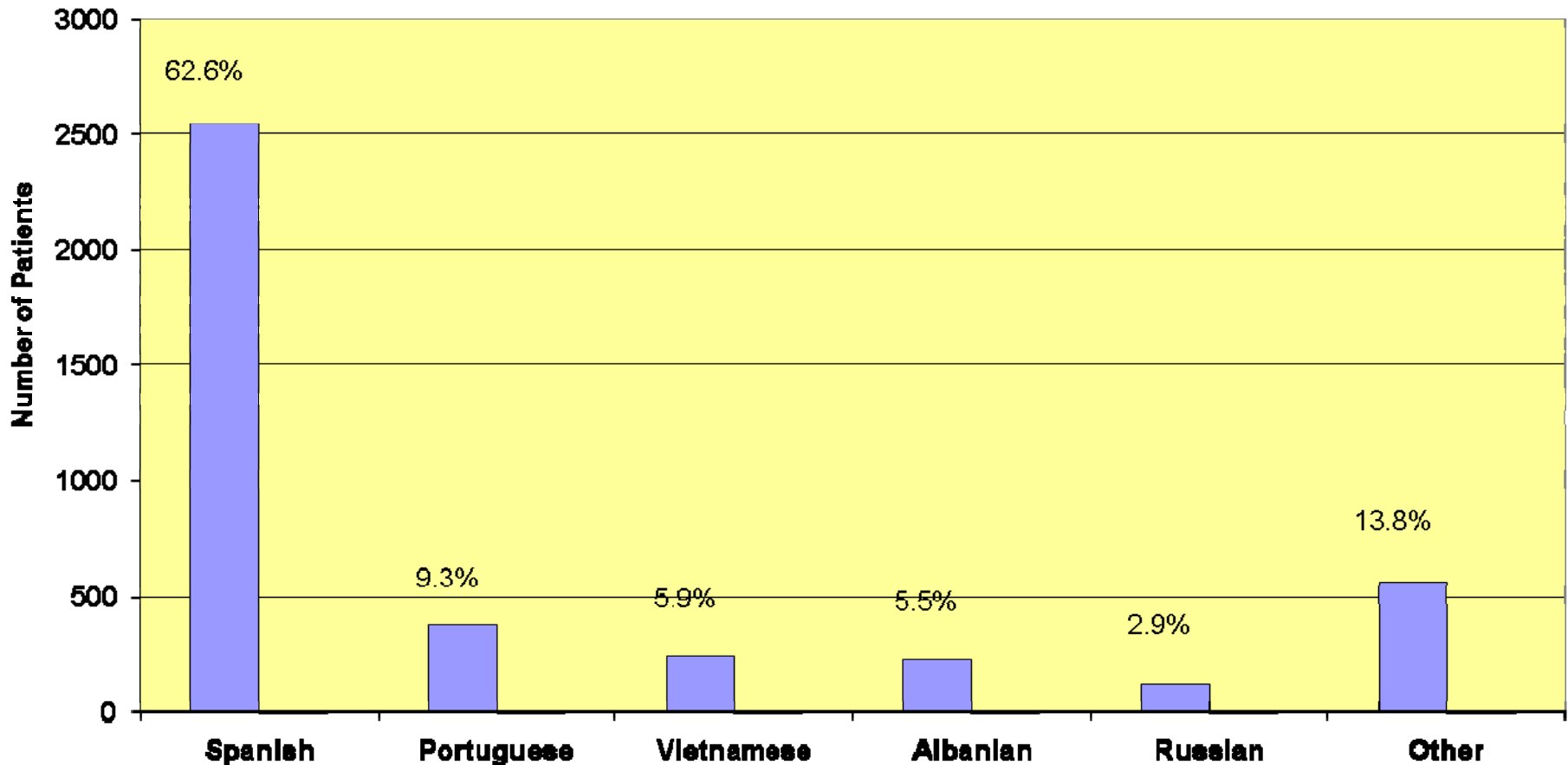




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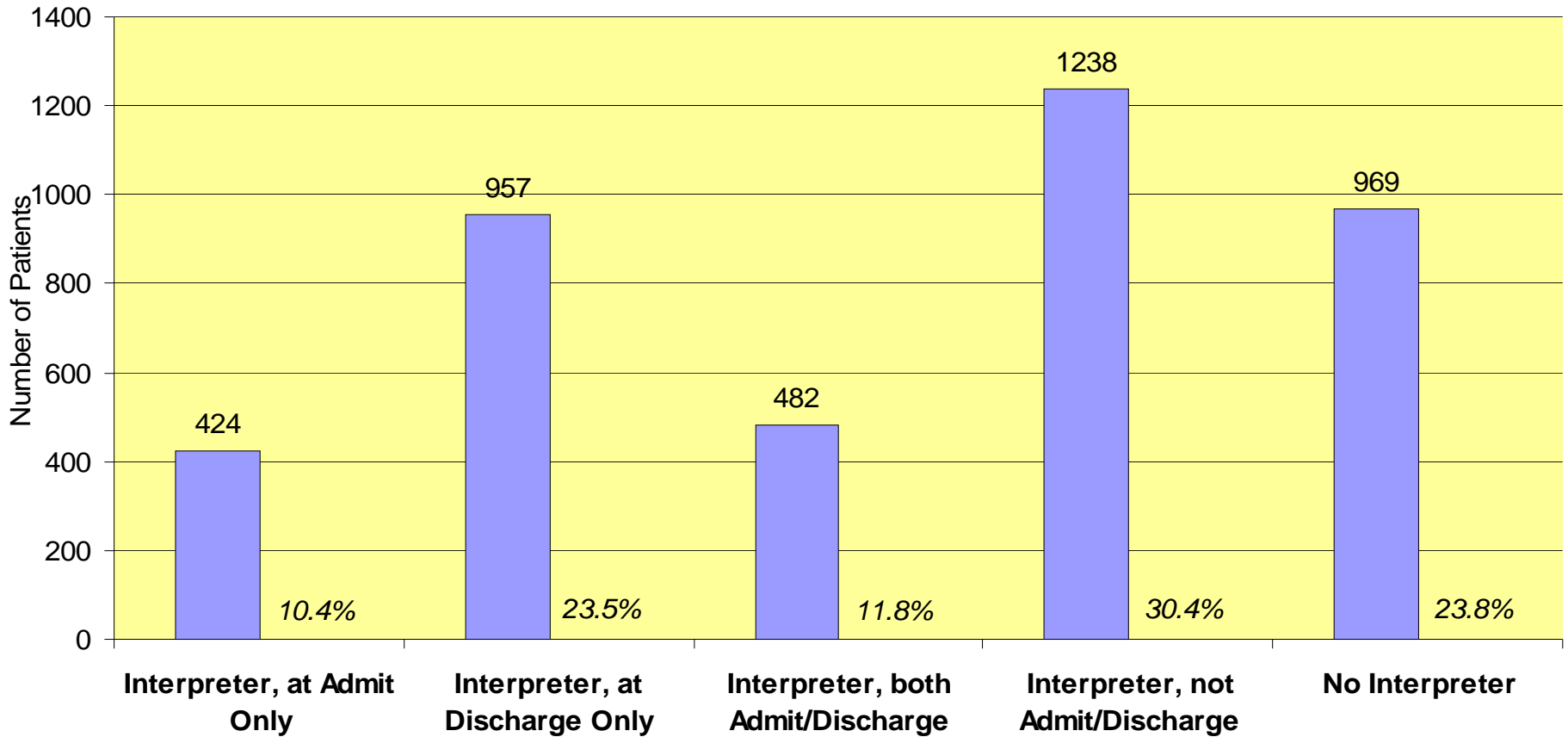


# Patient's Preferred Language





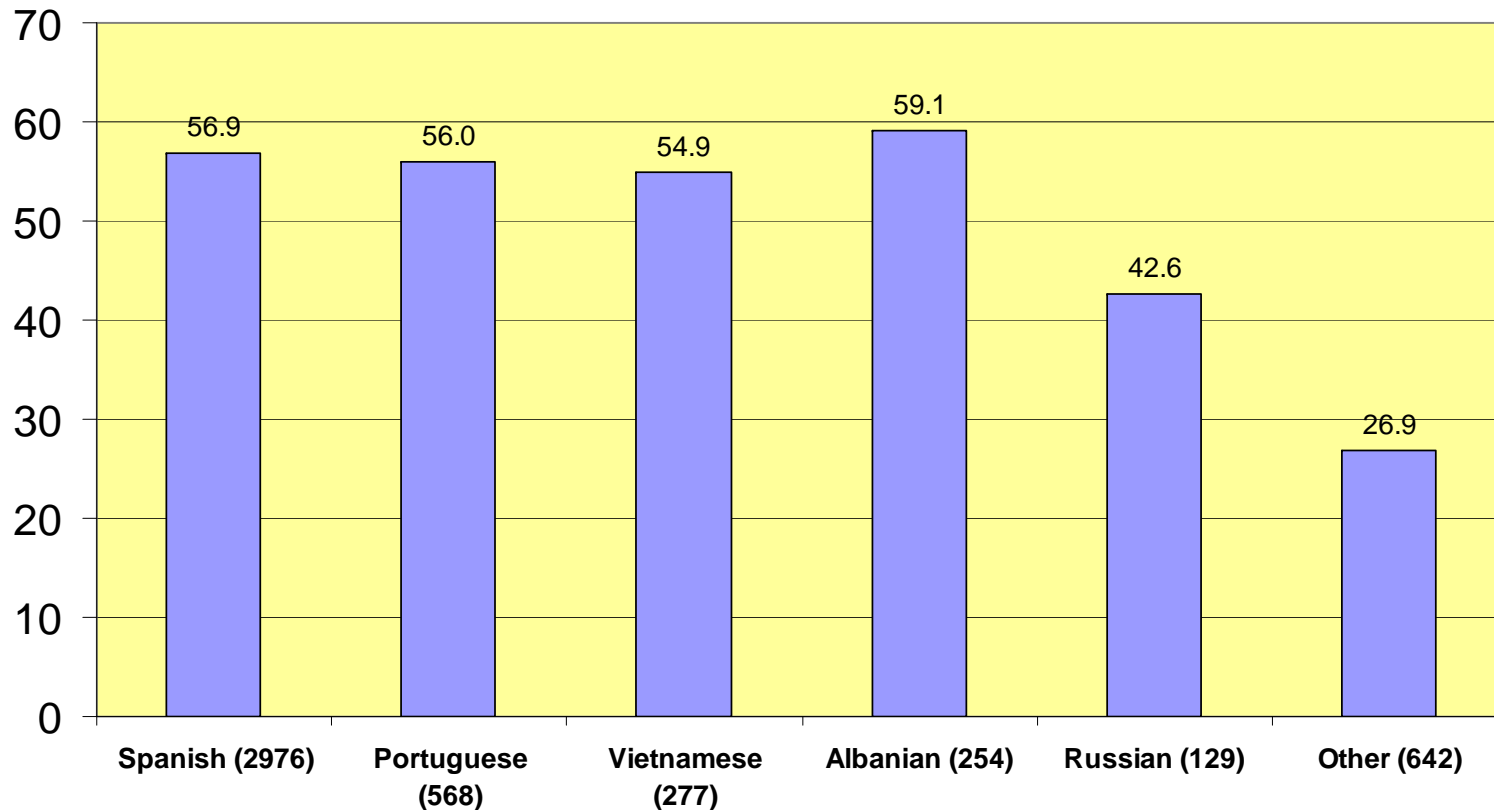
# Timing of Interpretation





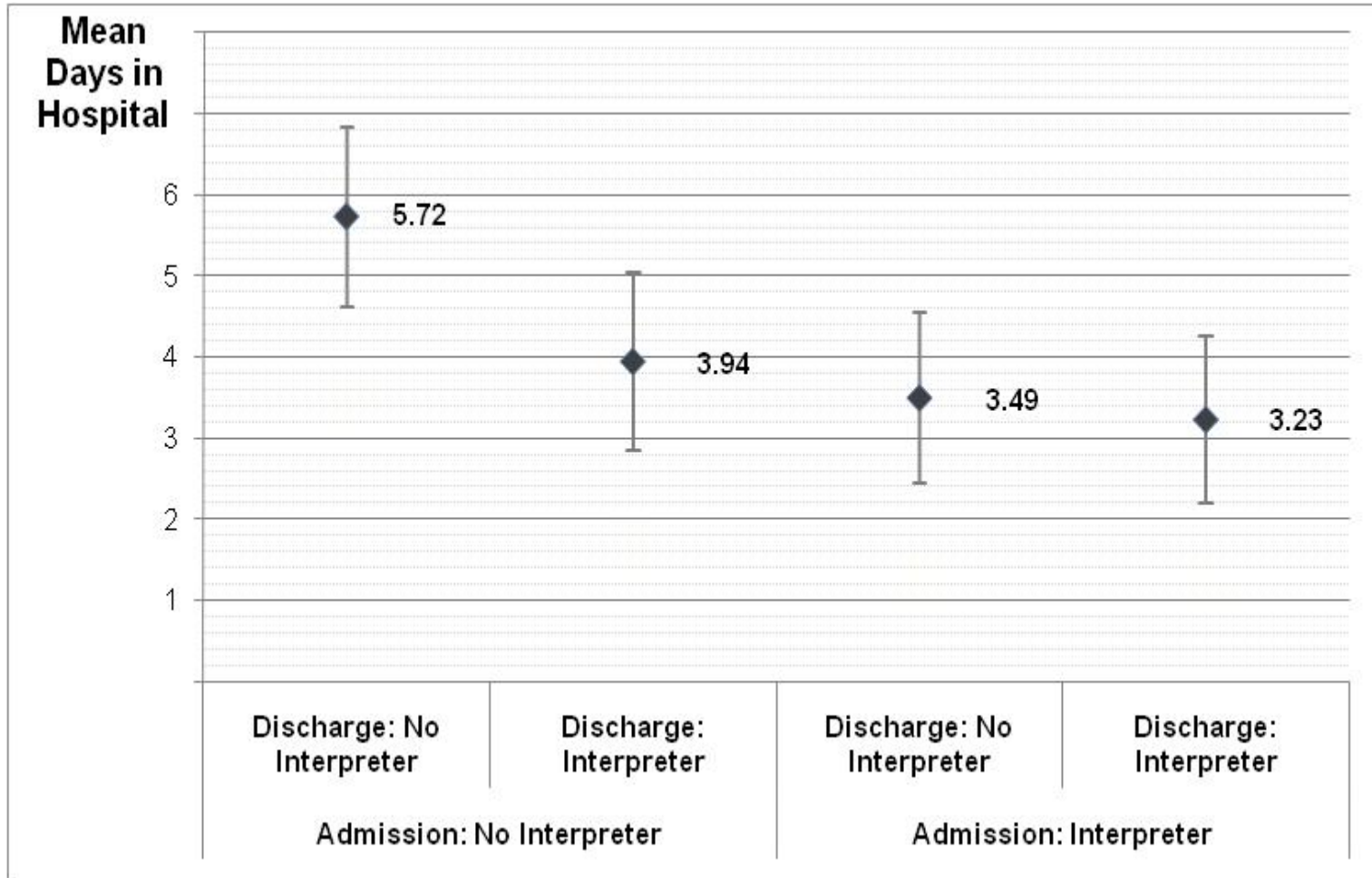
# Interpreter on Admission By Language

Percentage





# Length of Hospital Stay and Interpretation

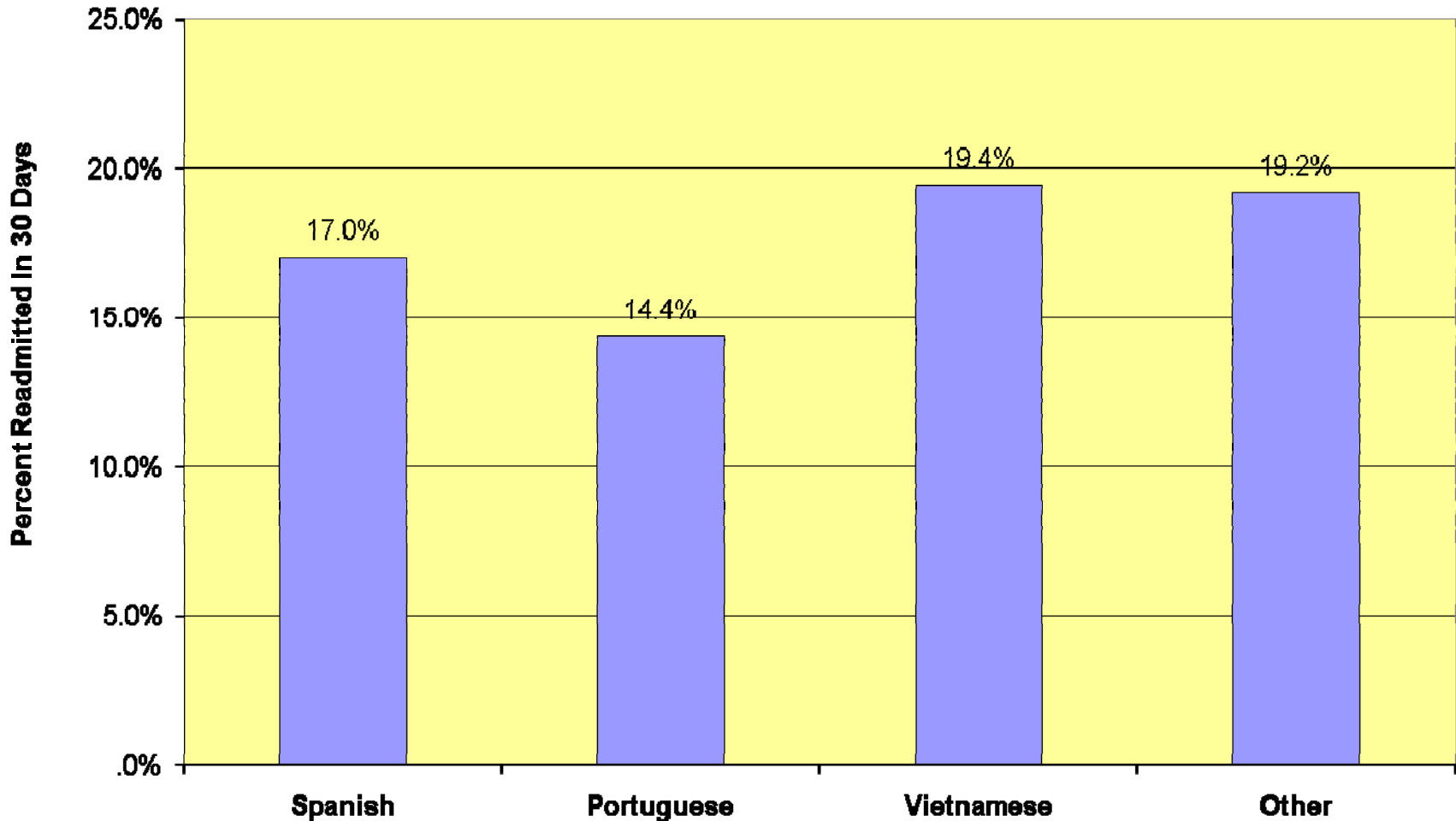




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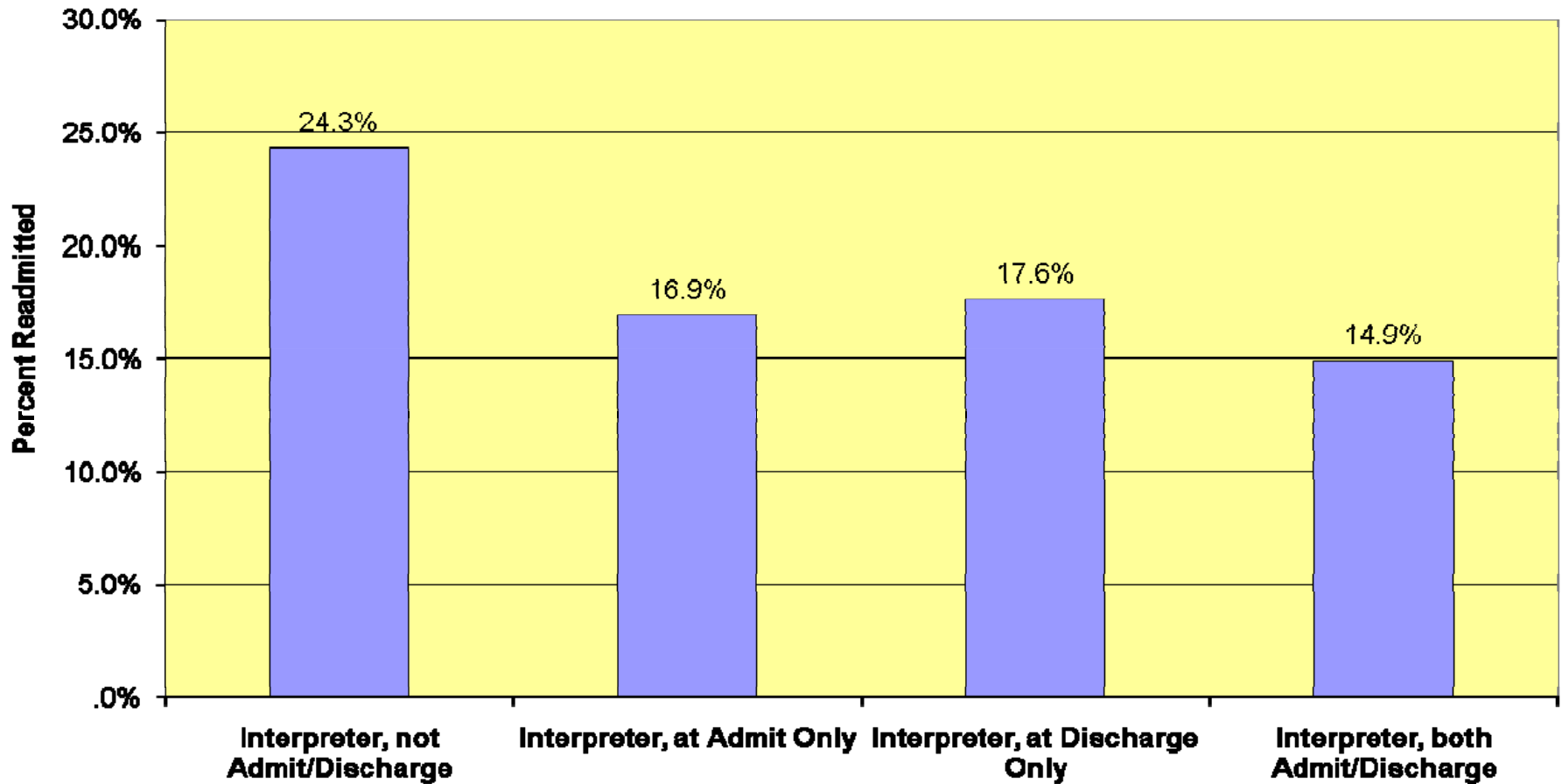


# Readmission Rate By Language





# Readmission Rates By Timing Of Interpretation

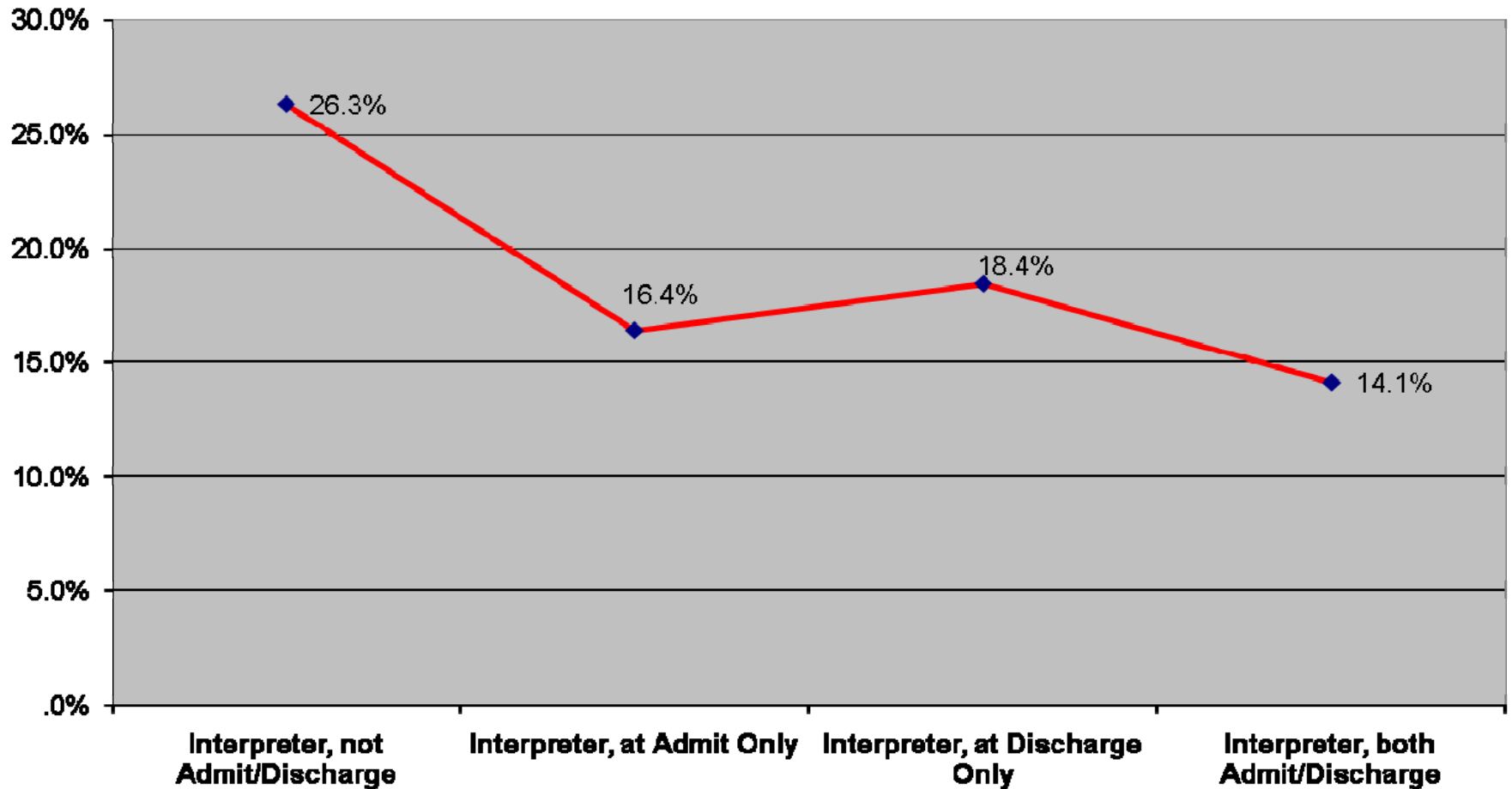




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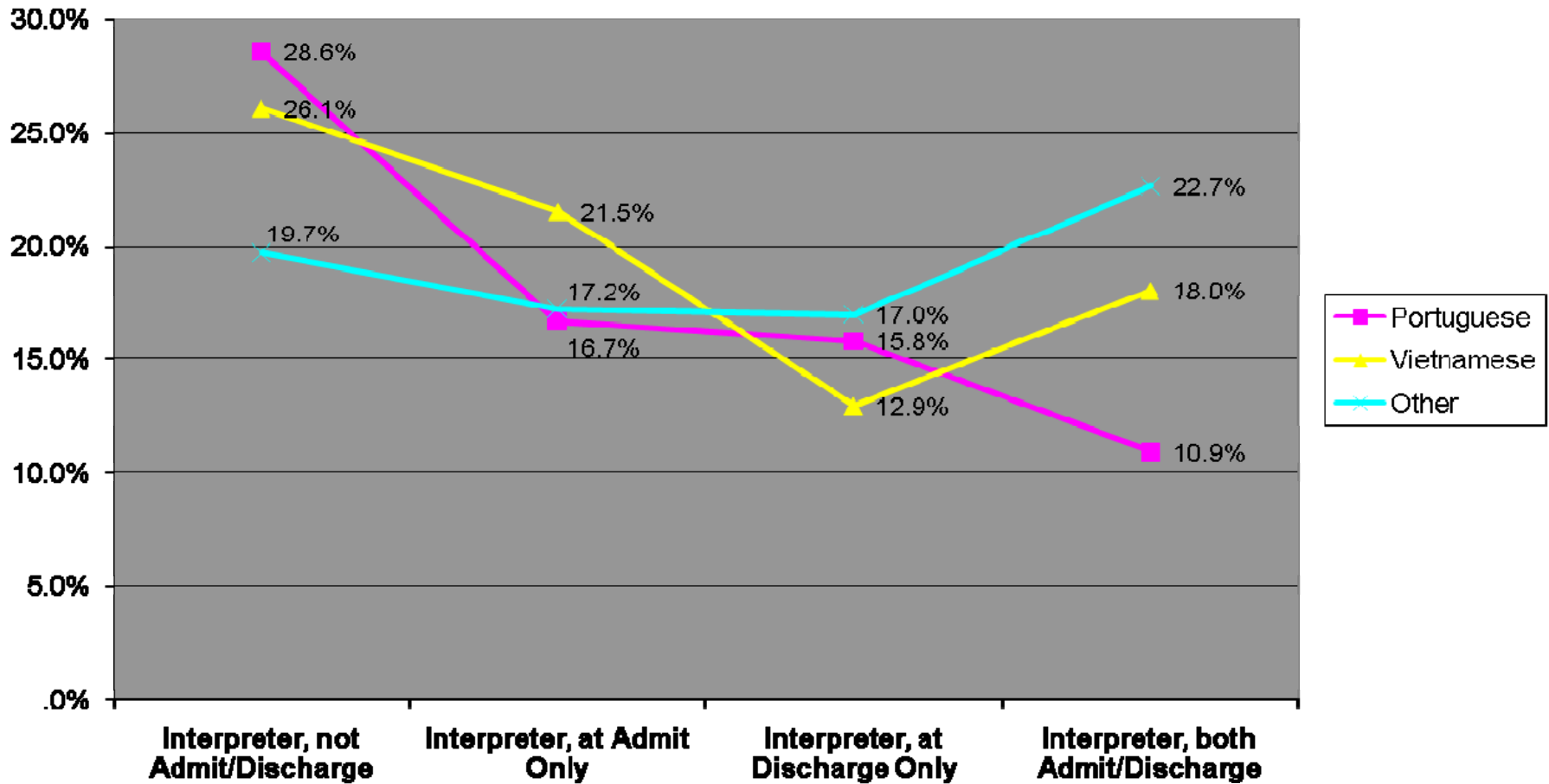
# Spanish Readmission Rate By Timing Of Interpretation







# Non Spanish LEP Readmission Rates By Timing Of Interpretation





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## Additional Results

Controlling for age, gender, language, length of stay, major conditions, and severity of illness, LEP patients who had an interpreter at admission were less likely (odds ratio of 0.65) to be readmitted in 30 days



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## Interview Results

- 15 Spanish and 9 Vietnamese patients interviewed
- Patients appreciative of staff communication effort
- Family members were often used as interpreters
- Patients indicated preference for professional interpreters
- Procedures and tests not consistently explained with use of professional interpreter



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## Conclusions

- We need to improve the rate at which we provide professional interpretation to our LEP patients as it has both medical and economic consequences.
- LEP patients who don't receive interpretation at admission and/or discharge have average increased LOS of between 0.6 to 2.4 days
- Readmission rates for LEP patients who don't receive interpretation are 9.4% higher than those who have interpreters for admission and discharge



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# Changes Implemented

- Creating a culture of quality and measurement
- Developing a systematic data collection process to document, measure and monitor effectiveness of LS
- Systems to identify patient's preferred language and need for an interpreter
- Daily language/interpreter error report to the registration staff
- Systems and guidelines for receiving, prioritizing and delivering Interpreter services requests
- Process for evaluating and maintaining qualifications of LS staff
- Strategic roll out of Over-the-Phone interpreting
- Changing staffing practices