



# The Use of Administrative Data to Investigate Wait Times for Total Joint Replacement Surgery

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# Overview

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# Background

- In Canada, more than 68,700 hip and knee replacements were done in 2005/06.
- In NL, the number of hip replacements increased by 80% and knee replacements by 177% from 95/96-05/06.
- In 2004, First Ministers identified TJR as one of 5 key areas of importance for wait time reduction.
- Waiting for TJR begins long before the wait list begins. This may impact on patient's recovery

# Objectives

- To describe the sample of TJR patients
- To measure “True Wait Time” for TJR
- To determine whether wait time is associated with length of stay (LOS) after TJR

# Ethics

- Human Investigation Committee of Memorial University of Newfoundland
- Research Proposals Approval Committee of Eastern Health
- Privacy Impact Assessment (Centre for Health Information)

# Data Sources

- **Surgery Department Data (2002-2005)**
  - Provided by Eastern Health (largest regional health authority in NL)
  - Information on patients who had undergone TJR between 2002-2005
  - Type of Procedure
  - Date of Procedure, date of Placement on wait list (not available for all years)
  - Unique provincial health insurance number (MCP#)

# Data Sources

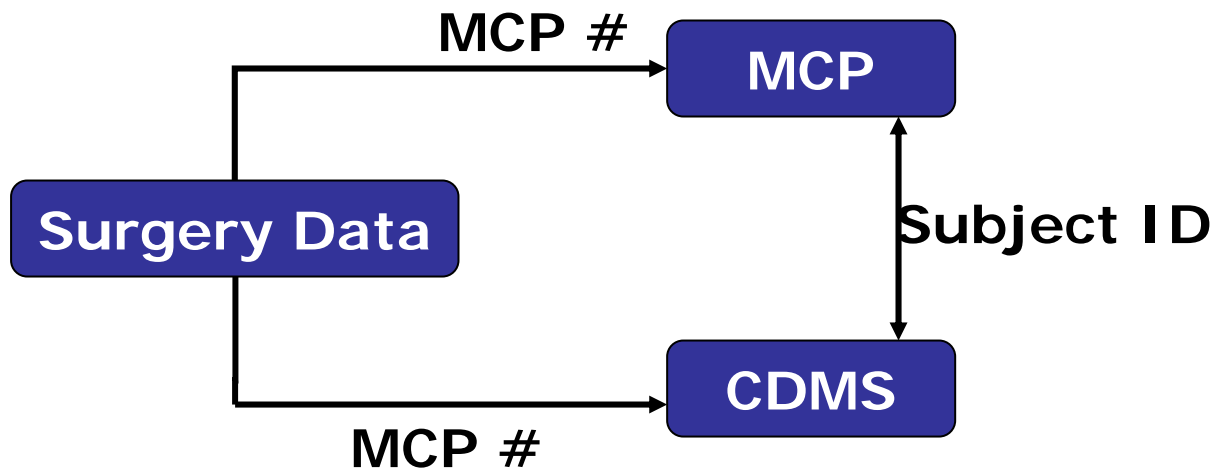
- Medical Care Plan (MCP) Data (1995-2006)
  - Fee-for-service physician billing claims
  - Provided by the Dept of Health
  - Demographic Data
  - MCP#
  - Clinical Data
    - Diagnosis code (ICD-9) and Fee code
    - Date of Service
    - Specialty Code

# Data Sources

- Clinical Database Management System (CDMS) data (1995/96-2005/06)
  - Maintained by the Centre
  - Hospital separation data
    - Demographic data
    - Clinical data
      - Admission and discharge date
      - Diagnosis codes (ICD-9 and ICD-10-CA)
      - Procedure codes, Intervention codes

# Data Linkage

- Performed at the Centre
  - De-identified

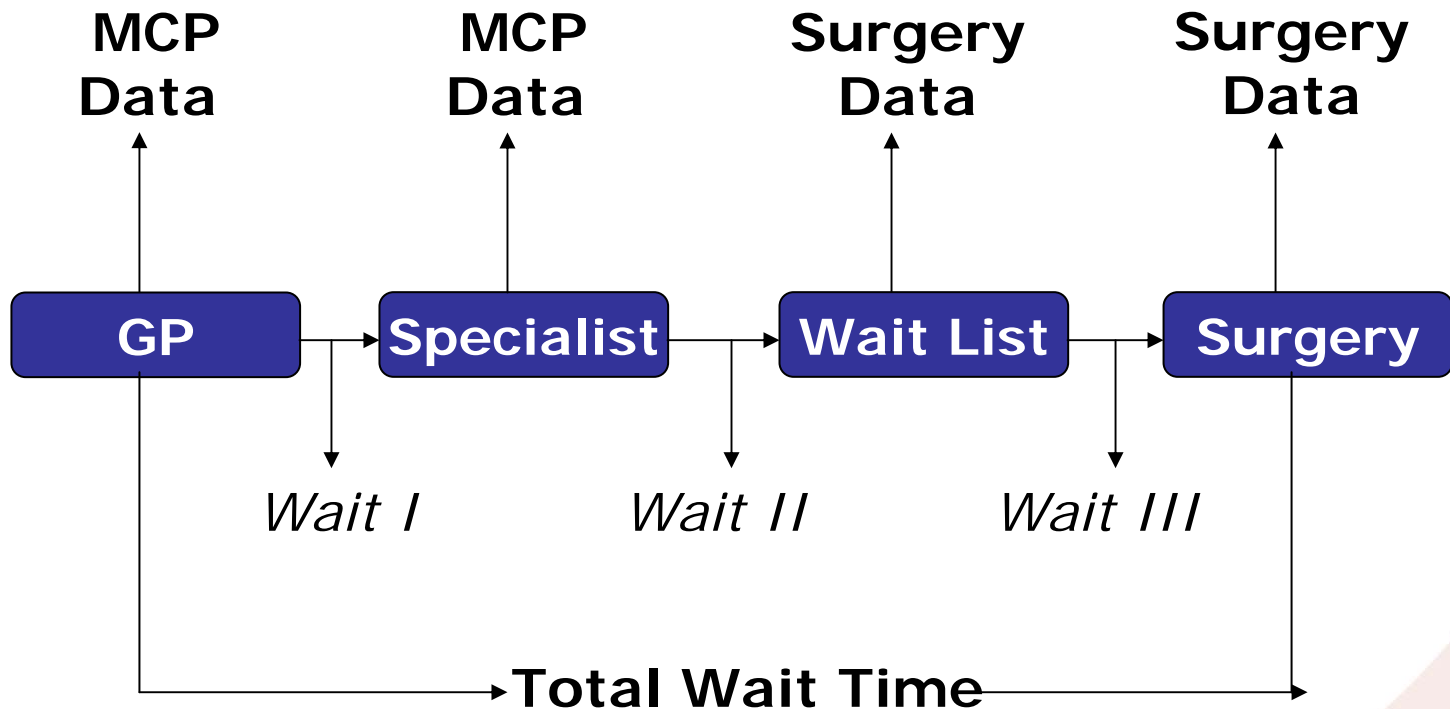


# Methodology

- The sample was described based on wait times and LOS after TJR.
- LOS was compared between groups with shorter wait times and longer wait times
  - Shorter wait times were defined as <2 years from OS to WL, <3 months on WL
  - Longer wait times were defined as  $\geq 2$  years from OS to WL,  $\geq 3$  months on WL



# Measuring True Wait Time



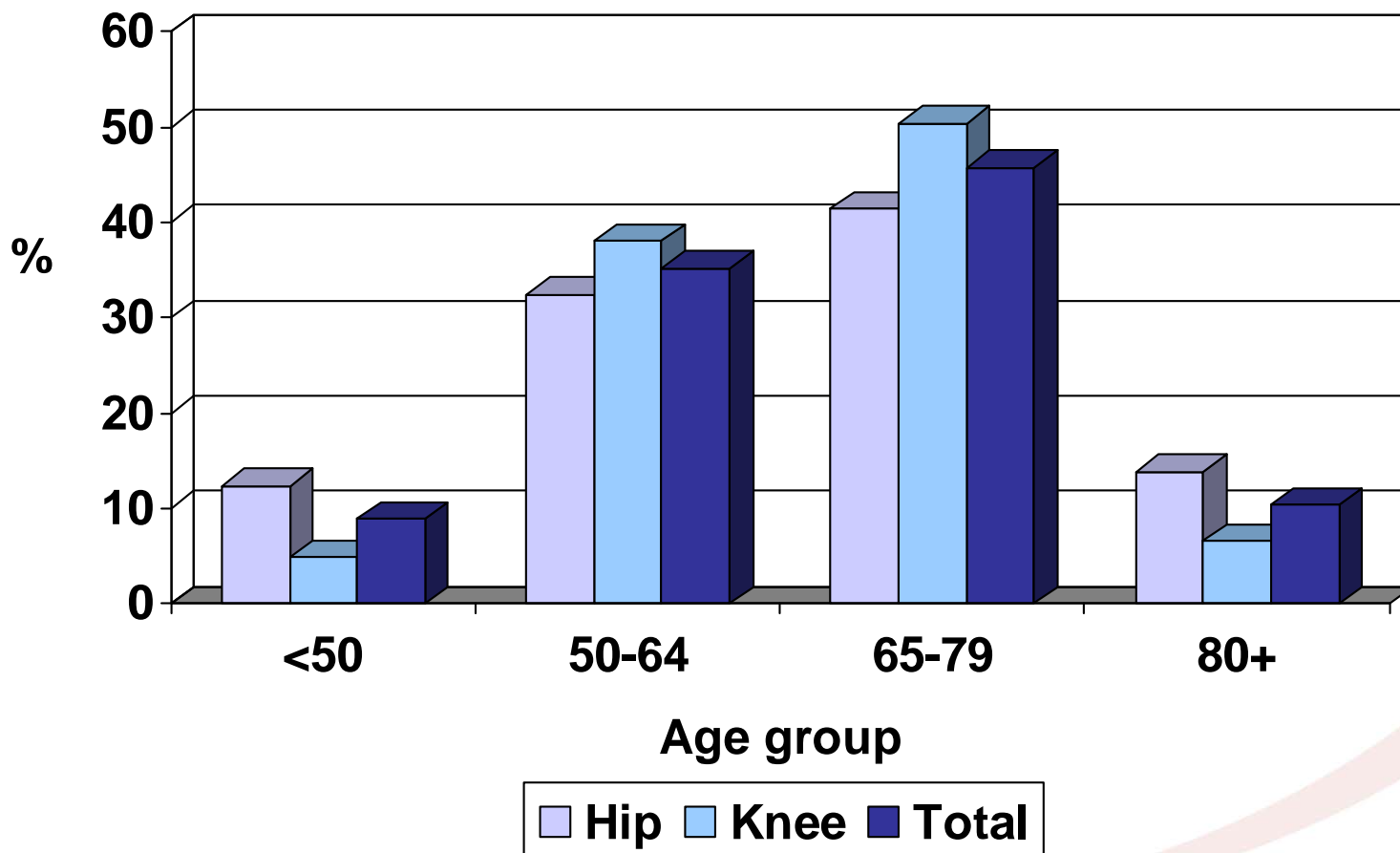


# Results-Demographics

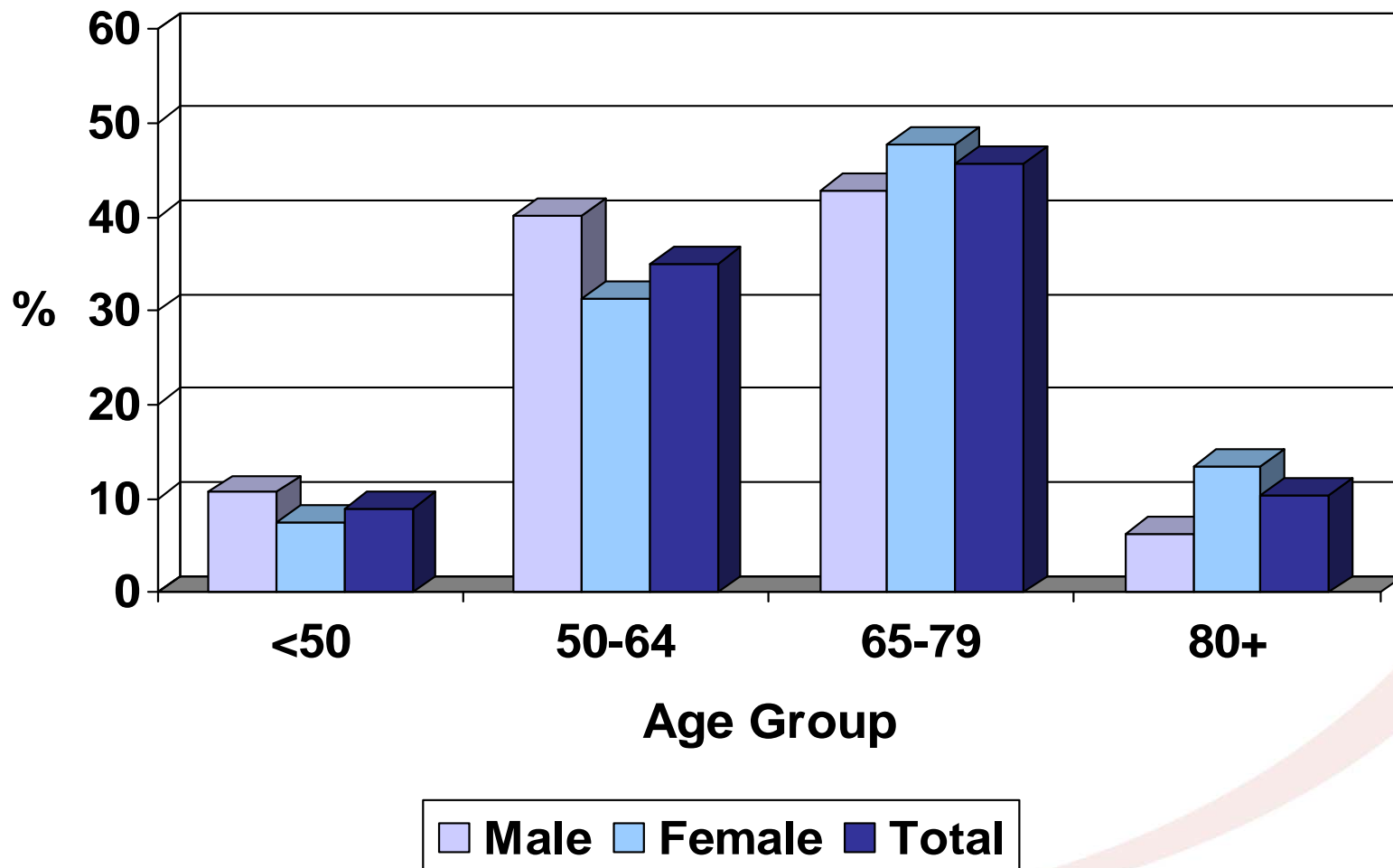
<b>Sex</b>	<b>Hip</b>		<b>Knee</b>		<b>Total</b>	
	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>
<b>Male</b>	267	42.0	239	41.7	506	41.9
<b>Female</b>	369	58.0	334	58.3	703	58.1
<b>Total</b>	636	100	573	100	1209	100



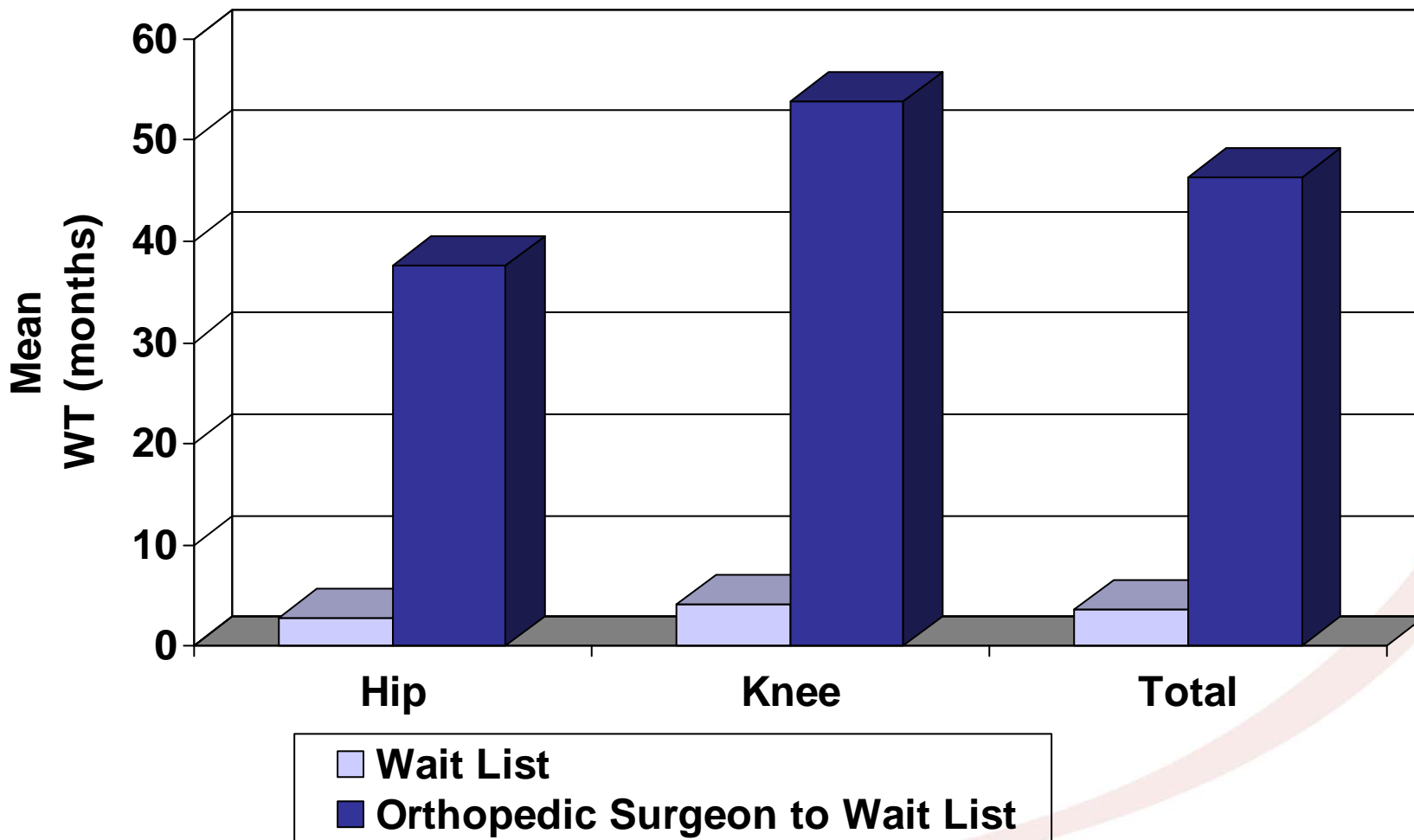
# Demographics



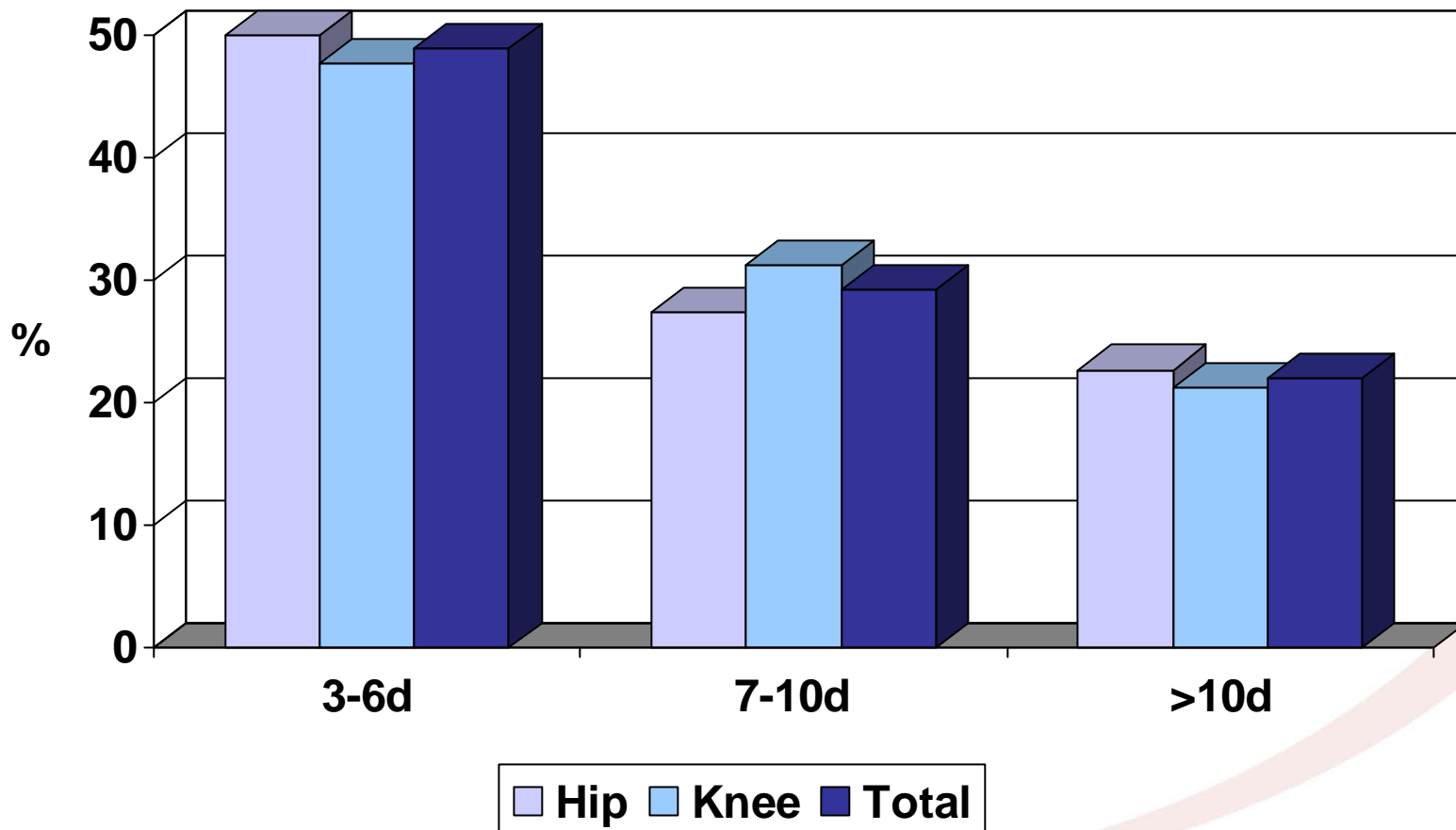
# Results-Demographics



# Wait Time



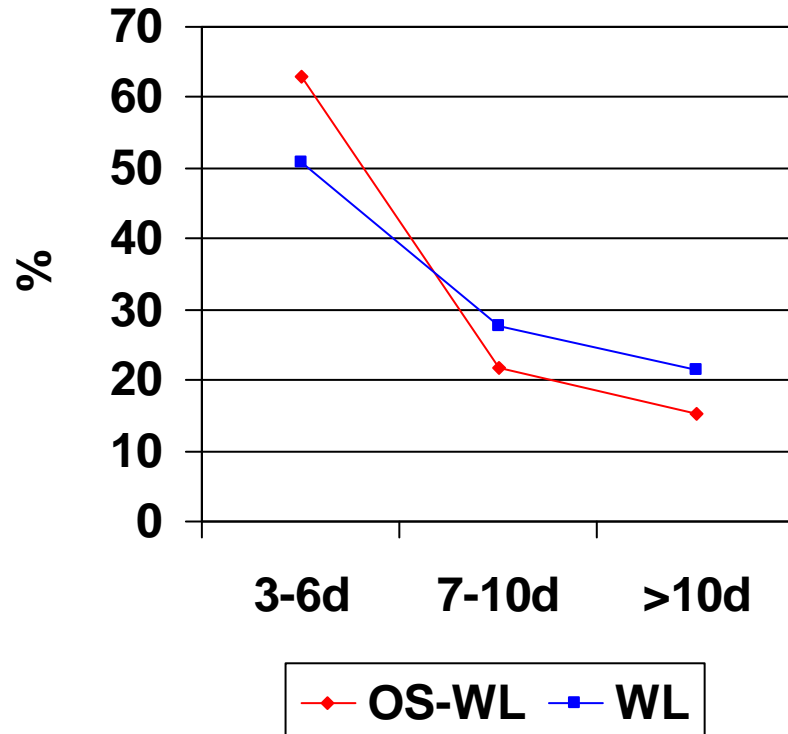
# Length of Stay-Replacement Type



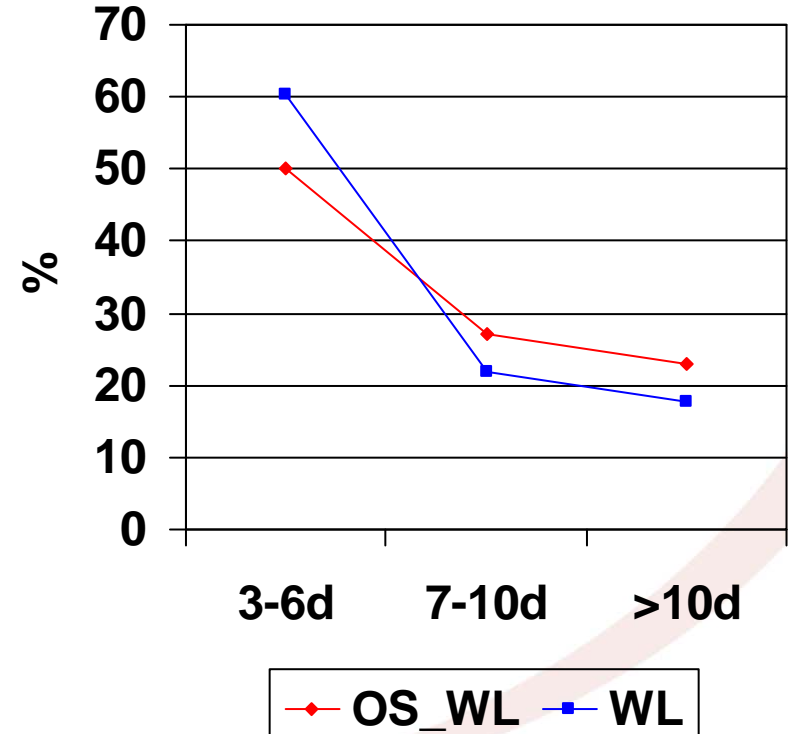


# Length of Stay

## Short Wait Times



## Long Wait Times



# Discussion

- The true wait time patients experience involves more than just the time on the wait list.
- Relationship between wait time and length of stay
  - More research needed to investigate this more fully



# Limitations and Future Work

- True wait time begins when referred to specialist
- Wait time can be affected by comorbidities.
  - Patient that develops a condition while they are waiting may have to wait longer due to this condition.
- Time spent waiting for diagnostics impacts on true wait time
- LOS can also be affected by many things

# Implications

- Further work must be done to control for such things as age, comorbidity, gender, etc. and how this impacts on LOS
- Other measures of health service utilization should also be investigated to get a more detailed picture of the patients while they are waiting.

# Acknowledgements

- Supervisor: Dr. Rick Audas
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- Centre for Health Information
  - Research and Evaluation Department



## Thank you

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