



## Elimination of 24-hour continuous medical resident duty in Quebec:

A comparative quality of life survey of Quebec versus Canadian General Surgery residents on the duty hour restrictions

Presenter: Dr. Fadi Hamadani

Supervisor: Dr. Paola Fata



# McGill

# CONFLICT OF INTEREST DECLARATION

I, FADI HAMADANI declare that in the past 3 years:

I have been a member of an Advisory Board or equivalent with the following companies\*: NONE

I have been a member of the following speakers' bureau: NONE

I have done speaking engagements for the following companies\*: NONE

I have received payment or funding from the following companies\*  
(includes gifts, grants, honoraria, and 'in kind' compensation): NONE

I have done consulting work for the following companies\*: NONE

I have held a patent for a product referred to in the program or that is marketed by a commercial organization: NONE

I or my family hold individual shares in the following companies\*: NONE

I have participated in a clinical trial for the following companies\*: NONE

\*pharmaceutical, medical device, or communications companies

# Canada was ahead of the game in terms of duty hours



- ACGME regulates resident duty hours (2003)
- Large body of literature assessing impact of regulation on resident fatigue, medical errors, and patient care
- Surgical education literature focus on surgical case volume, interactions between residents and staff



# Surgical literature divided

## SUPPORTIVE

- Better resident quality of life
- Increased resident safety
- Less fatigue-related errors (no difference in morbidity or mortality of patients)

## CRITICAL

- Less operative case volume
- Poorer performance on certification exams
- Decline in ability to make acute care surgical decisions
- Worse quality of life for staff

*Pellegrini CA, Britt LD, Hoyt DB. Sleep deprivation and elective surgery. N Engl J Med. 2010;363:2672–2673.*



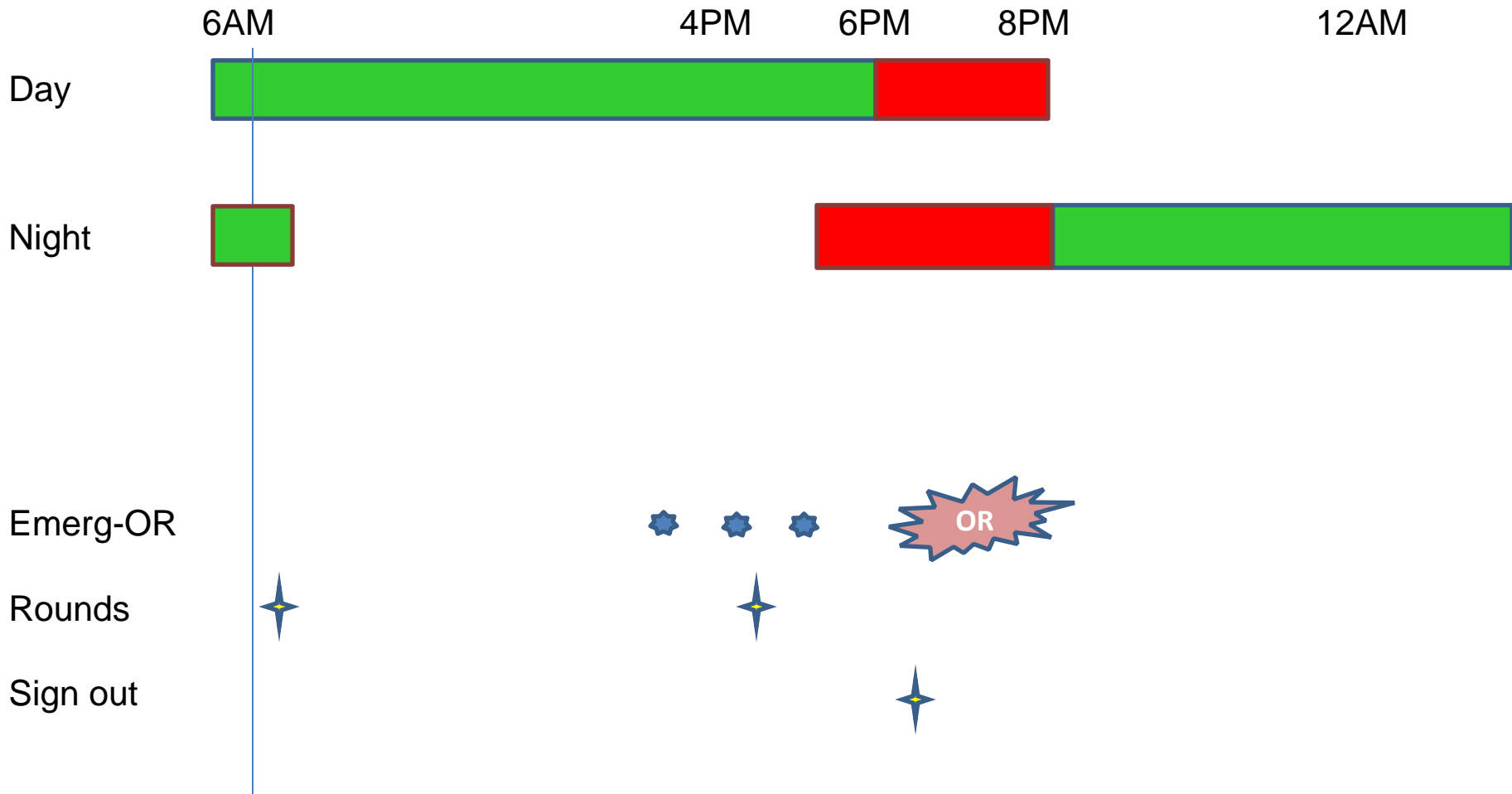
## Quebec abolishes 24-hour continuous duty

- **June, 2011** – Quebec arbitration ruling limits **consecutive 24-hour call** in all Quebec hospitals for residents only
- 2 options to organize the duty schedule within the new restrictions

# Option 1: Split the 24-hour period into 2 12-hour shifts



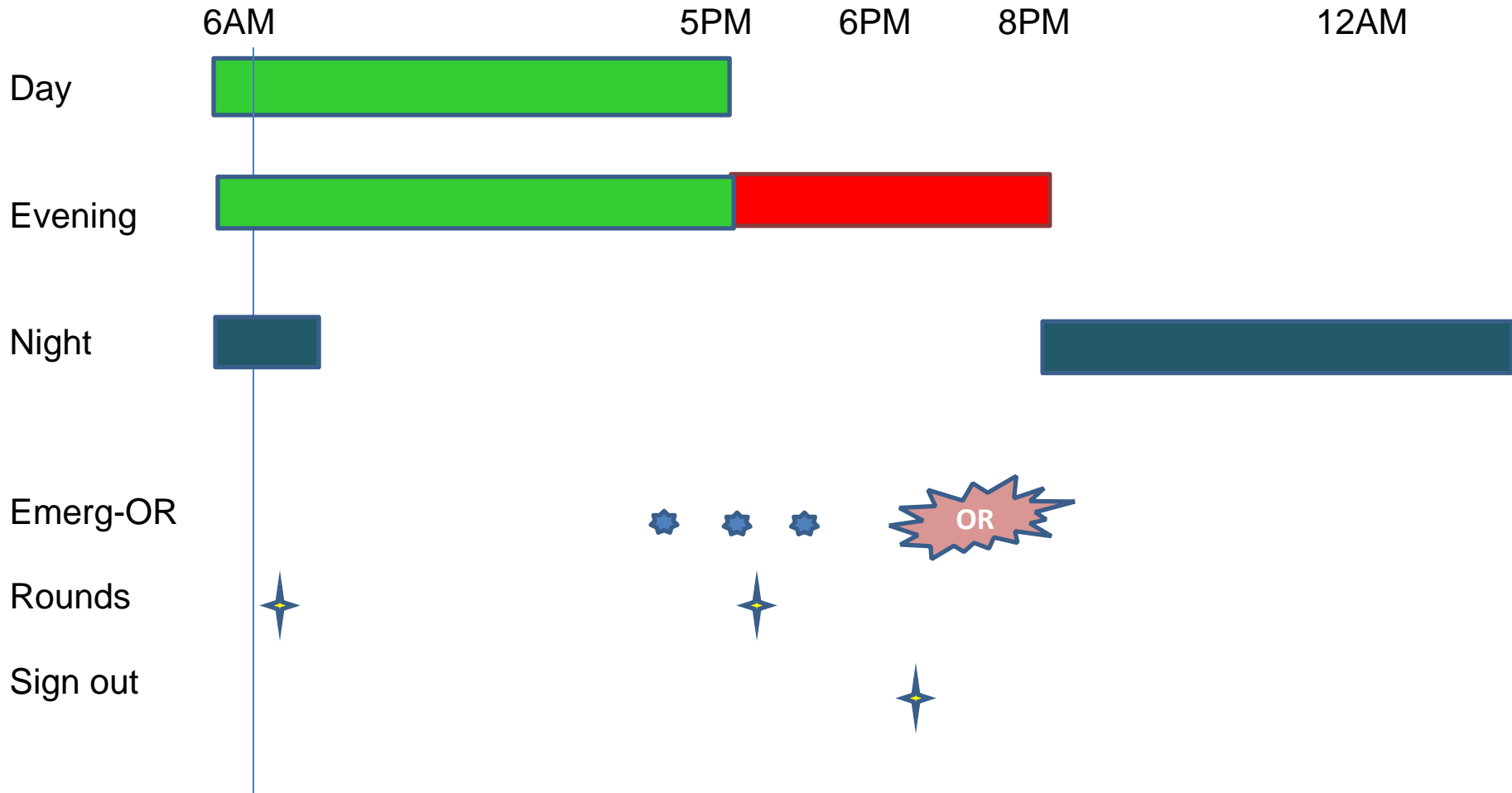
Weekdays and Weekends




# Option 2: Have an interspersed 3-hour night floater (like Internal Medicine)



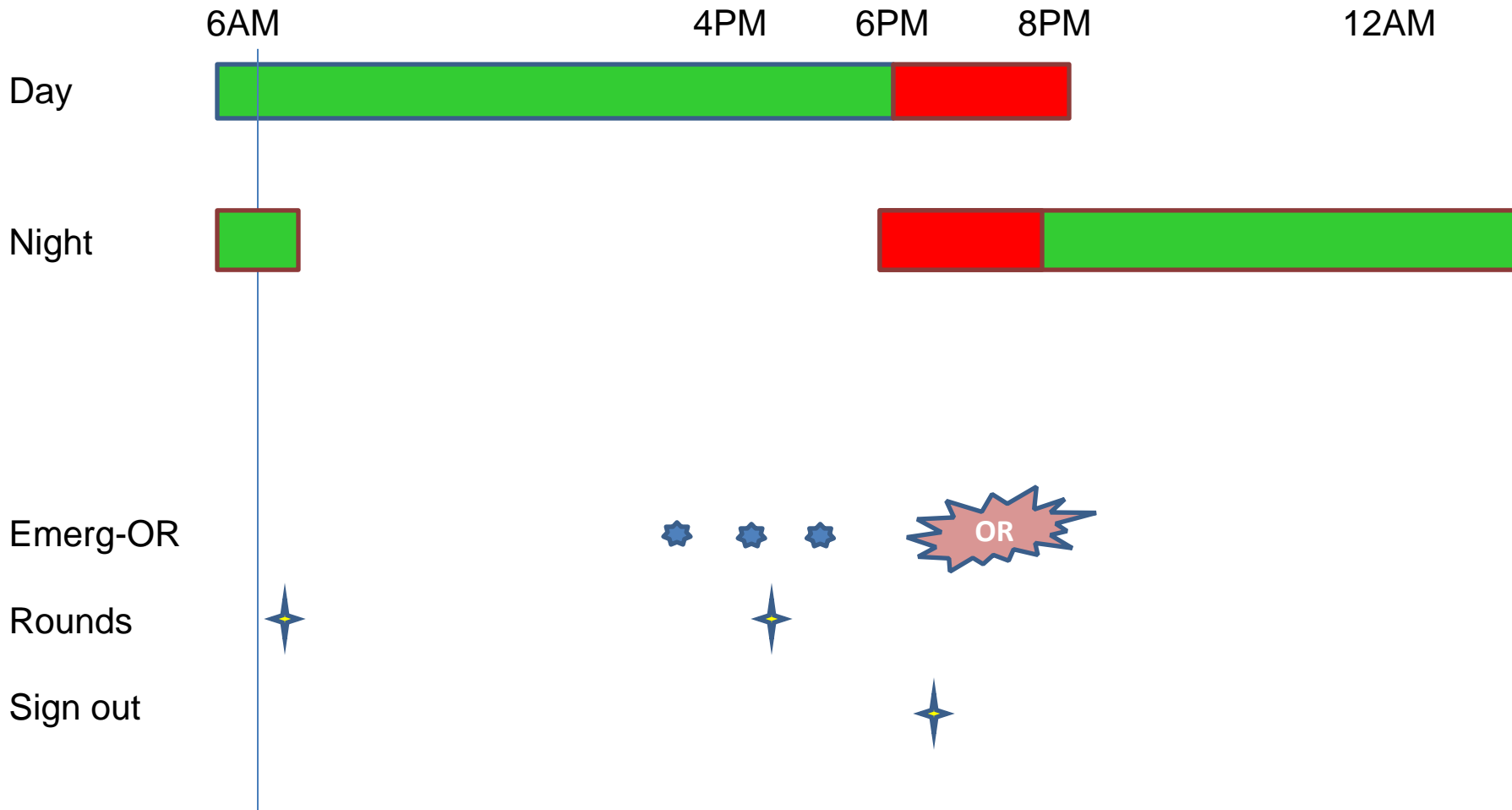
## U de M weekday



 = usually a resident from the day team (working a 6 am – 8 pm shift). During the 5-8 pm portion of shift covers all services

# U de M weekend schedule

## U de M weekend







## Methods

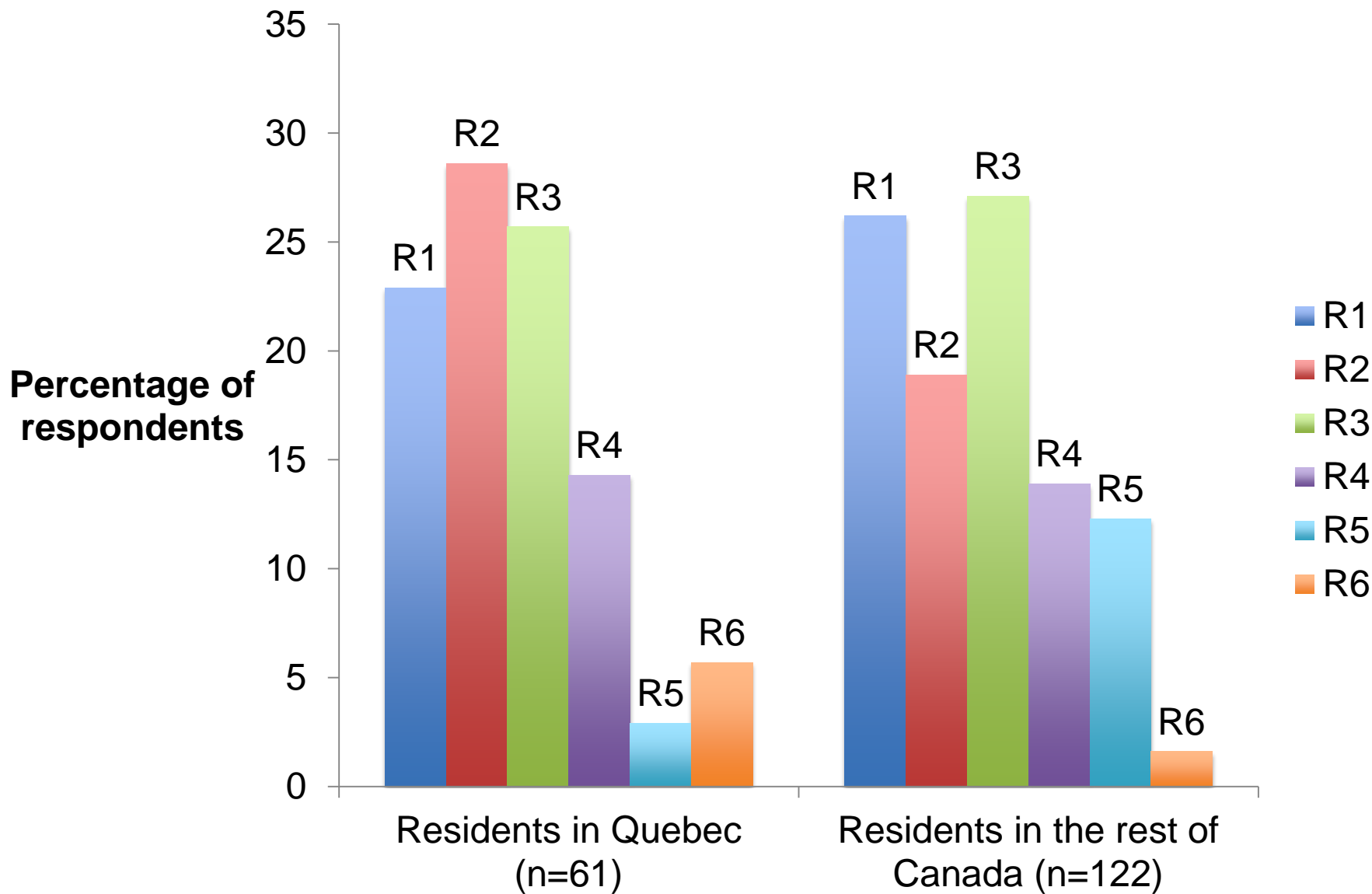
# Quality of life questionnaire

*Integrated educational quality  
assessment tool distributed to  
all Canadian General Surgery  
residents to complete*

## Assessing 4 major domains

- Sleep assessment;
- Perception of work hours and effect on future competency;
- Relationship to attending surgeons;
- Perception of ability to provide safe and continuous care to patients

# Percentage of respondents by year of training



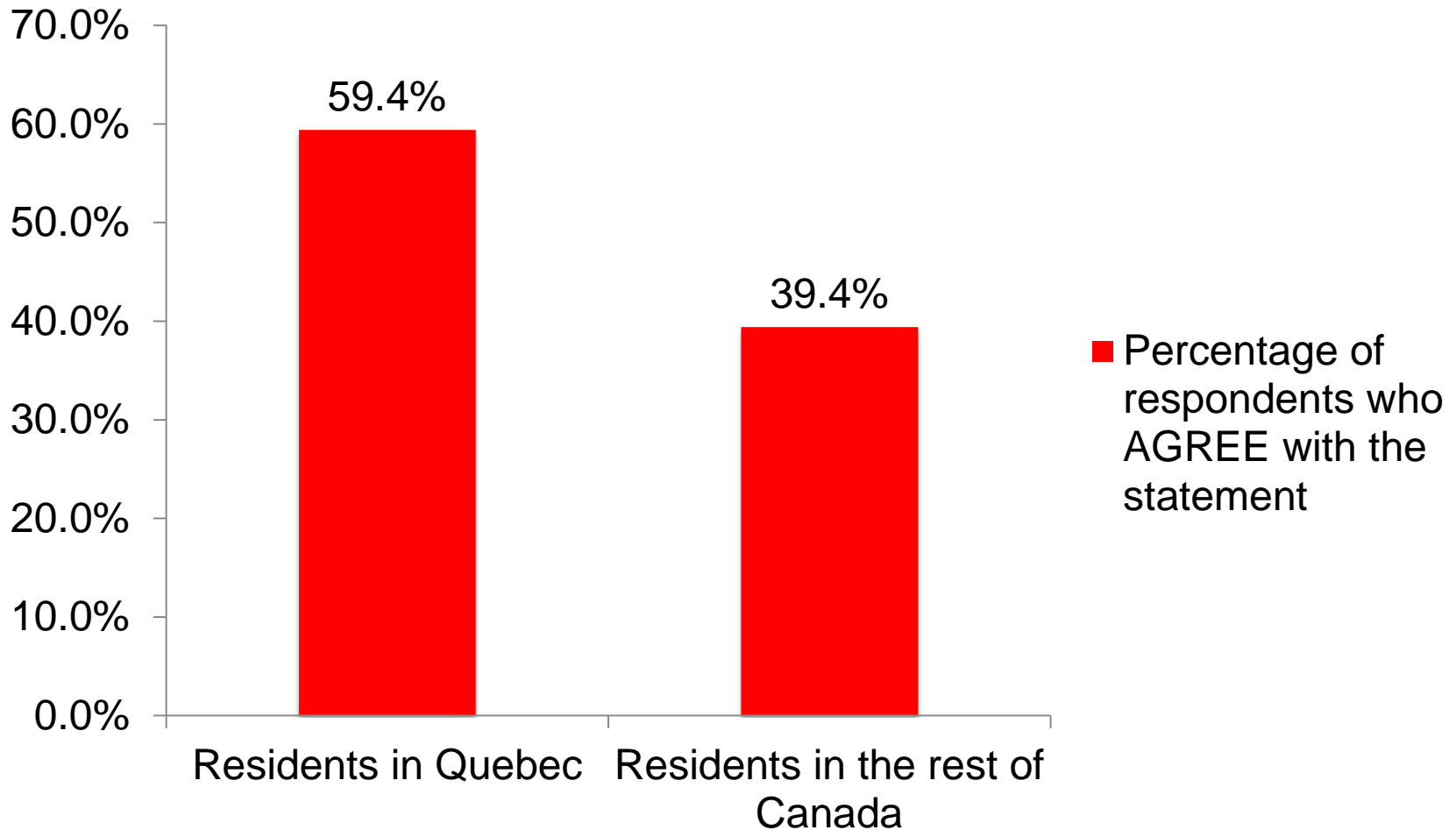
<b>Programs in Quebec</b>	<b>Number of respondents</b>	<b>Programs in the rest of Canada</b>	<b>Number of respondents</b>
<b>McGill University</b>	<b>34</b>	<b>Ottawa</b>	<b>22</b>
		<b>UBC</b>	<b>13</b>
		<b>Calgary</b>	<b>9</b>
<b>U de Montreal</b>	<b>17</b>	<b>Alberta</b>	<b>18</b>
<b>U Sherbrooke</b>	<b>7</b>	<b>Saskatchewan</b>	<b>5</b>
<b>U Laval</b>	<b>3</b>	<b>Western University</b>	<b>20</b>
		<b>McMaster</b>	<b>4</b>
		<b>Manitoba</b>	<b>8</b>
		<b>Toronto</b>	<b>13</b>
		<b>Dalhousie</b>	<b>1</b>
		<b>Memorial</b>	<b>4</b>
		<b>Queens</b>	<b>5</b>

# Sleeping less since duty hour restrictions - Quebec

Quebec		Rest of Canada
Prior to duty hour restrictions	After duty hour restrictions	6.5 +/- 1.9 hours per night
6.7 +/- 1.4 hours per night	5.7 +/- 1.3 hours per night	

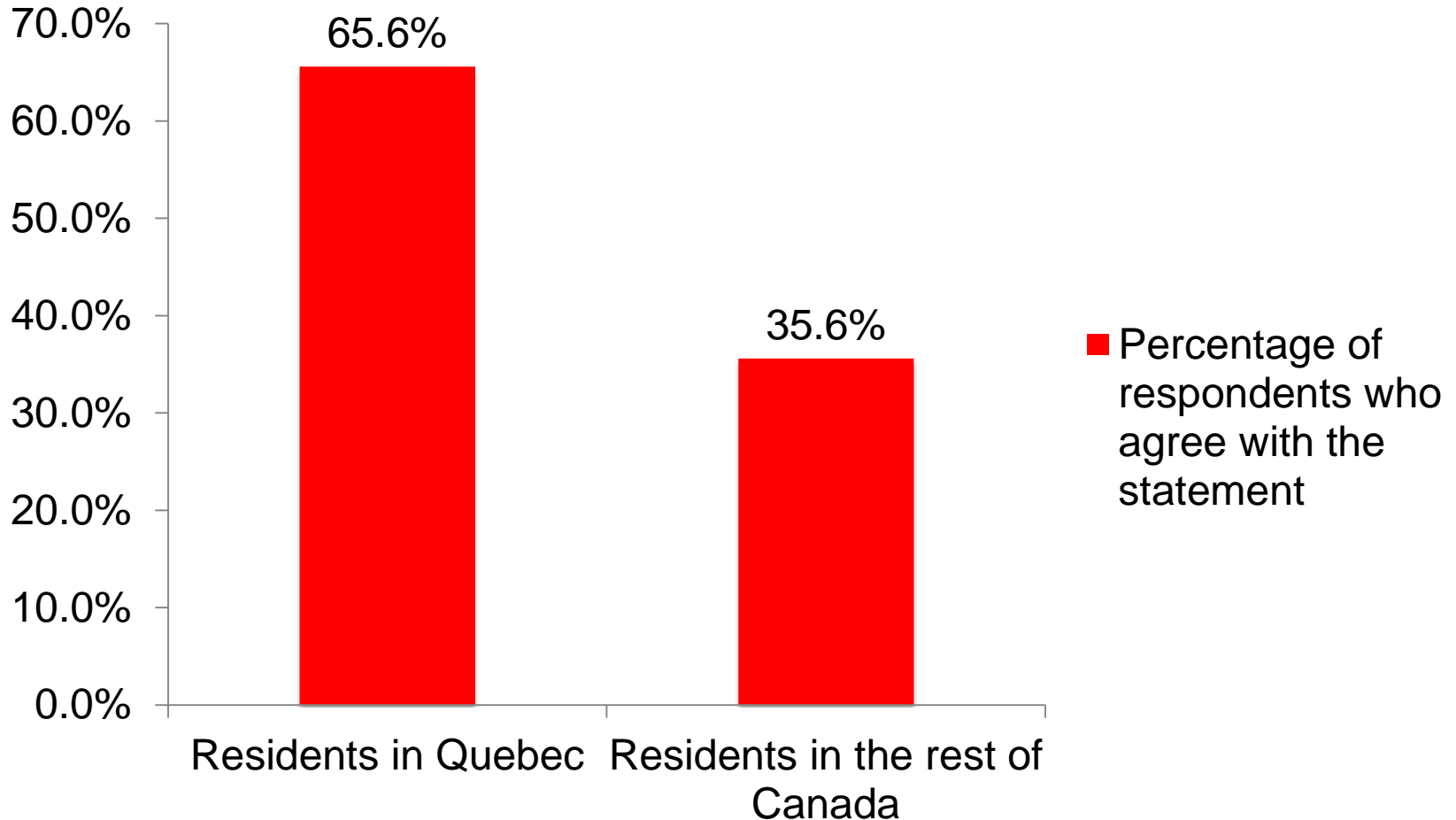
Average quality of sleep rated less in the Quebec cohort

## Percentage of respondents who AGREE with the statement



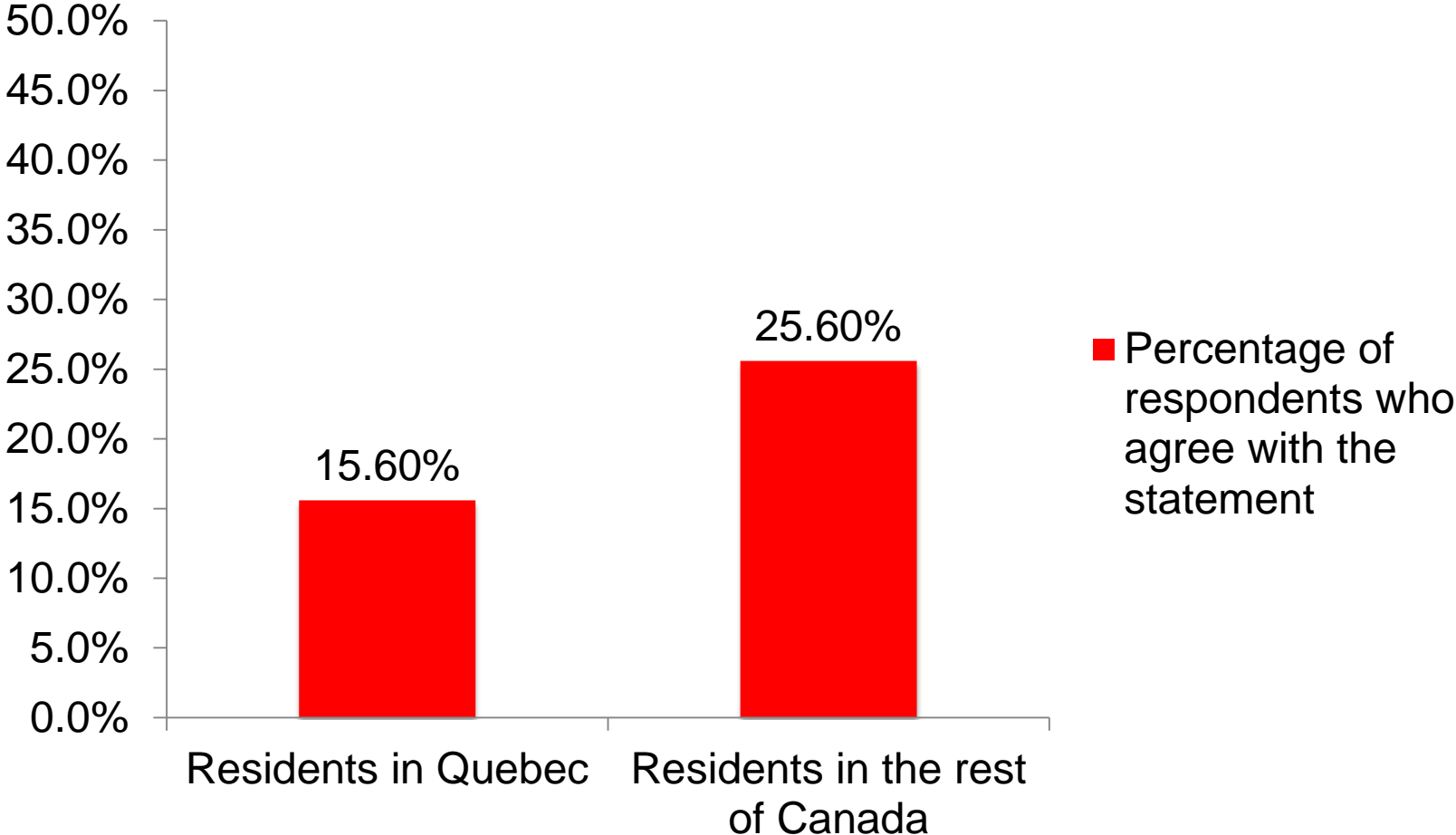
**I FEEL OVERWORKED**

## Percentage of respondents who agree with the statement



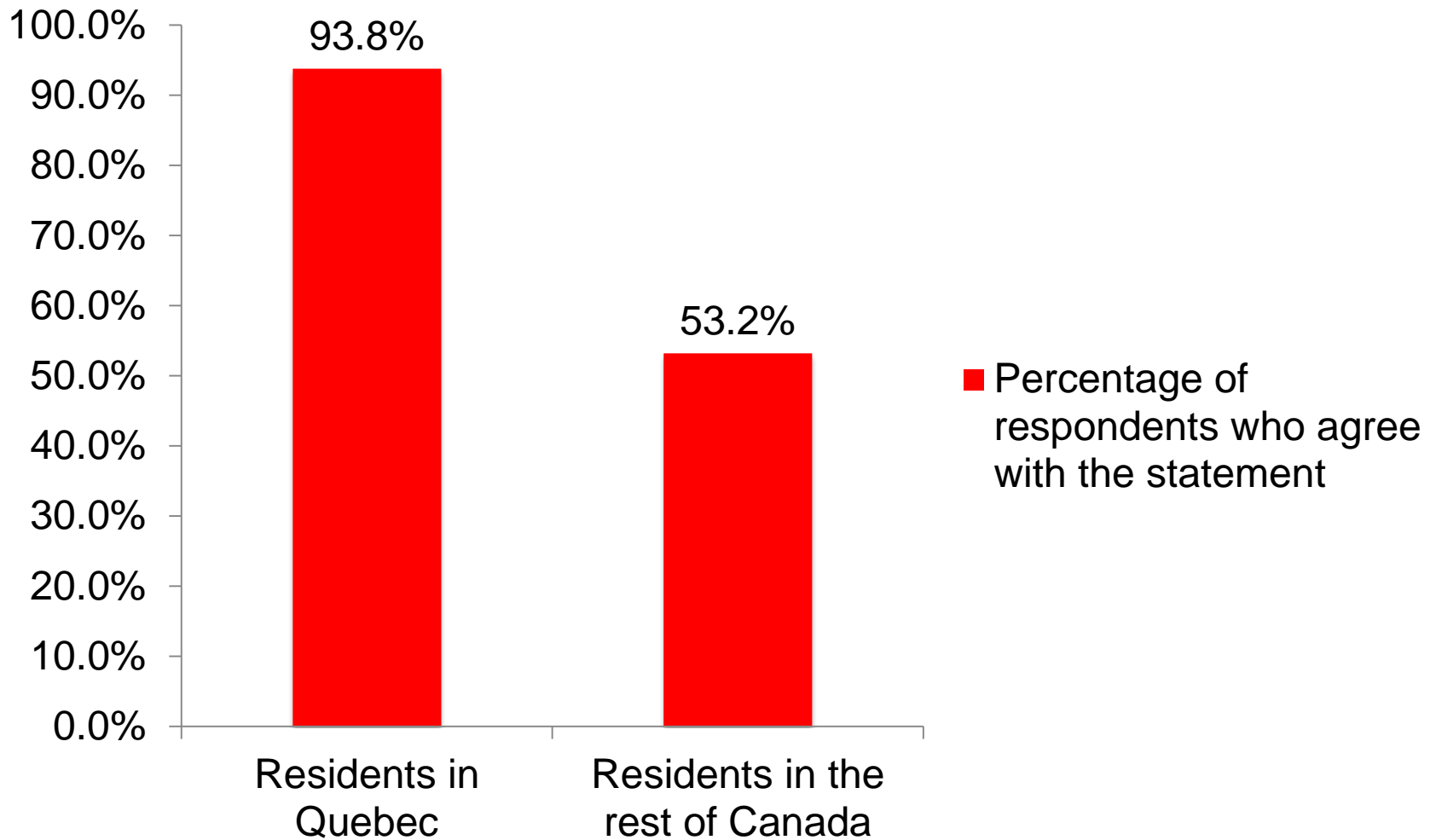
**I FEEL PRESSURED TO WORK MORE**

# Percentage of respondents who agree with the statement



**IF I COULD EXTEND MY RESIDENCY I WOULD**

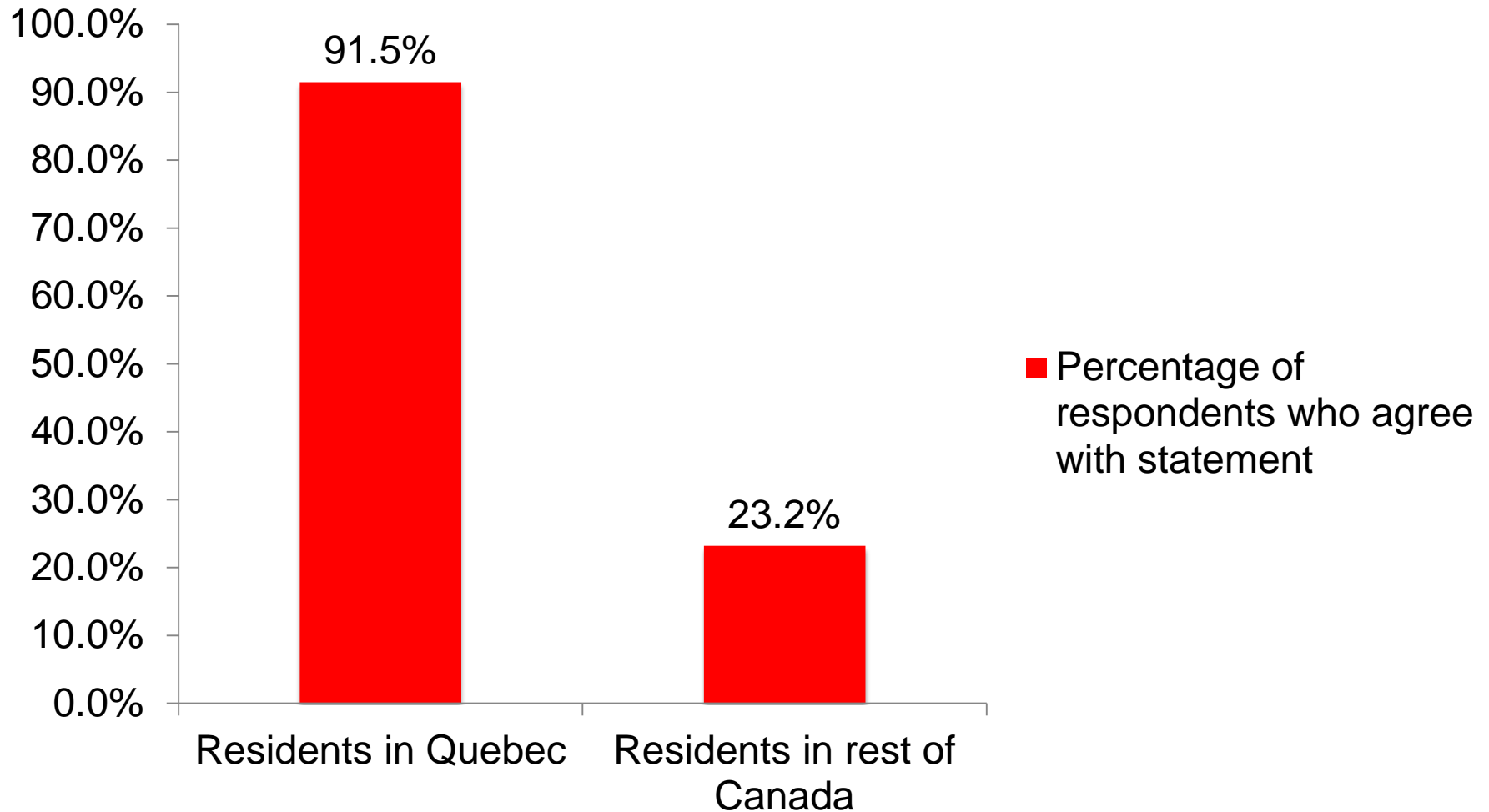
## Percentage of respondents who agree with the statement



**WITH THE CURRENT DUTY MODEL, I AM SLEEP DEPRIVED**

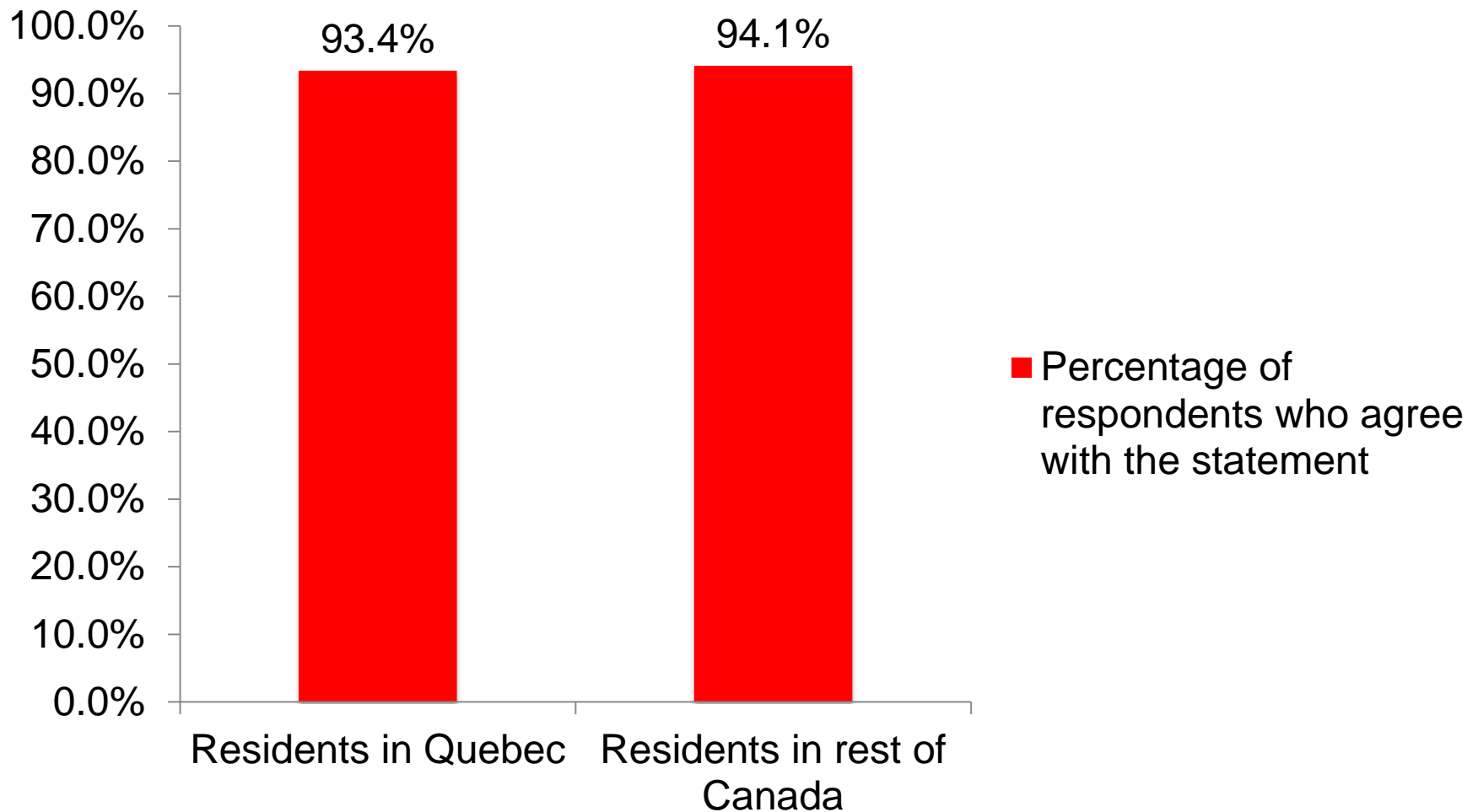


## Percentage of respondents who agree with statement



**UNDER THE CURRENT DUTY MODEL, PATIENT CARE IS FRAGMENTED**

## Percentage of respondents who agree with the statement



**1 IN 4, 24 HOUR CALL MODEL HAD (QUEBEC)/HAS (CANADA) A POSITIVE IMPACT ON MY QUALITY OF LIFE AND TRAINING**

# Results from McGill very similar to the other Quebec General Surgery programs

Statement/Measure	McGill (n=34)	U de M (n=17)	U de Sherbrooke (n=7)	Laval U (n=3)
Hours slept before restrictions	<u>6.7</u> +/- 1.4 hours	<u>7.2</u> +/- 2.1 hours	<u>6.2</u> +/- 1.7 hours	<u>6.1</u> +/- 2.1 hours
Hours slept after restrictions	<u>5.7</u> +/- 1.3 hours	<u>5.5</u> +/- 1.6 hours	<u>6.1</u> +/- 1.6 hours	<u>6.3</u> +/- 2.3 hours
Weekly hours worked before restrictions	<u>71.6</u> hours	<u>72.7</u> hours	<u>71.4</u> hours	<u>72.9</u> hours
Weekly hours worked after restrictions	<u>72.4</u> hours	<u>73.4</u> hours	<u>70.2</u> hours	<u>71.5</u> hours

# Resident perceptions on the impact of this change

- *Less OR time, less learning opportunity from staff, less interaction with patients and families*
- *Restricting our involvement in patient care, disrupting our relationship with staff as it imposes who is doing what on the team and how much time we spend on our patients and in the OR*
- *Also creating a negative environment among residents as we are becoming rigid and not flexible with the rules implemented*

# Resident perceptions on the impact of this change

- *It will ultimately lengthen training either officially by extending residency or because we're uncomfortable and will all be requiring further postgraduate training via fellowships*
- *More competition in order to get maximal surgical exposure, more stress and fatigue to keep up with patient care despite the shift work*

# What about patient care?

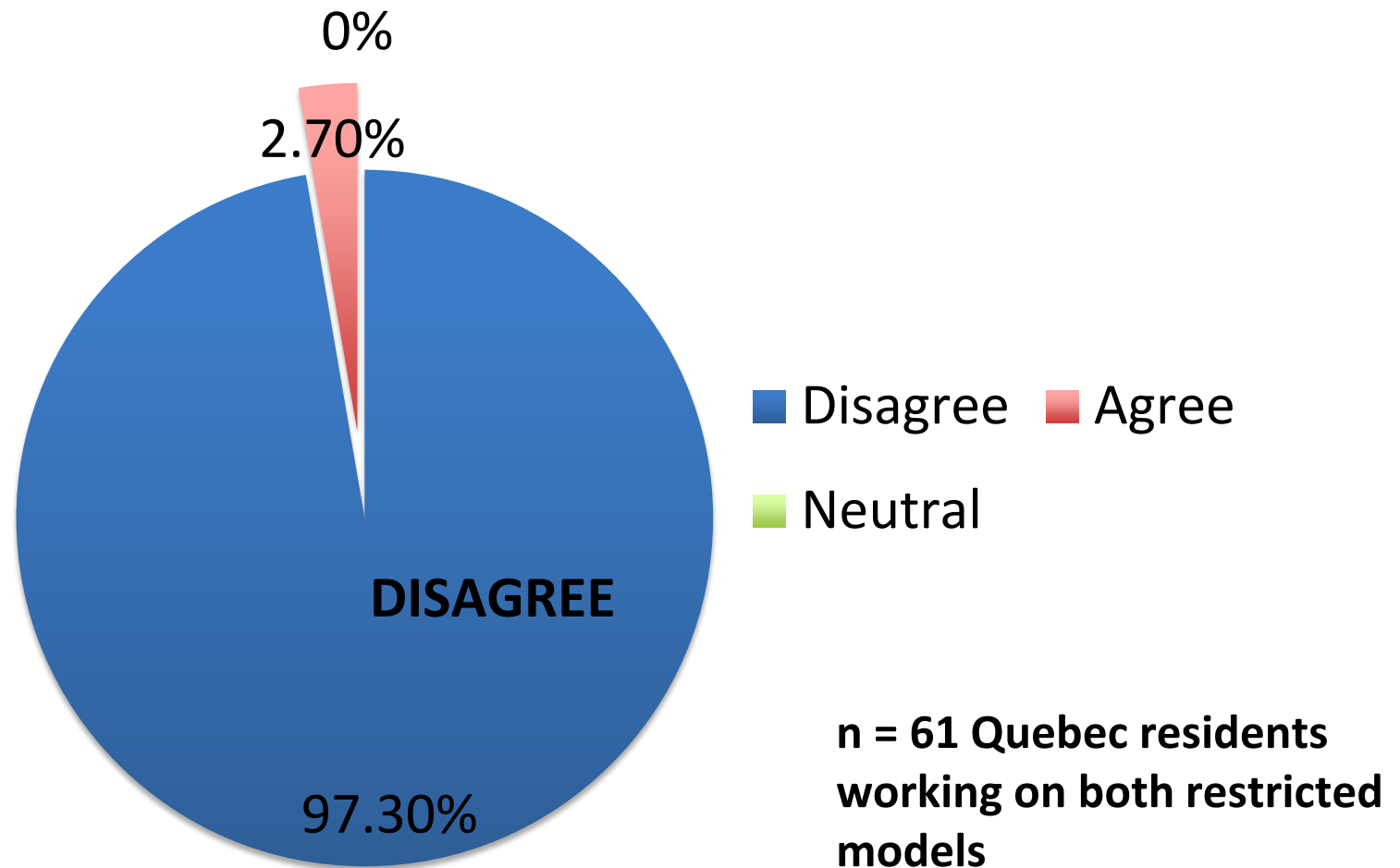
- Let's assess 2 things:

-Resident's perception of ability to provide continuous patient care

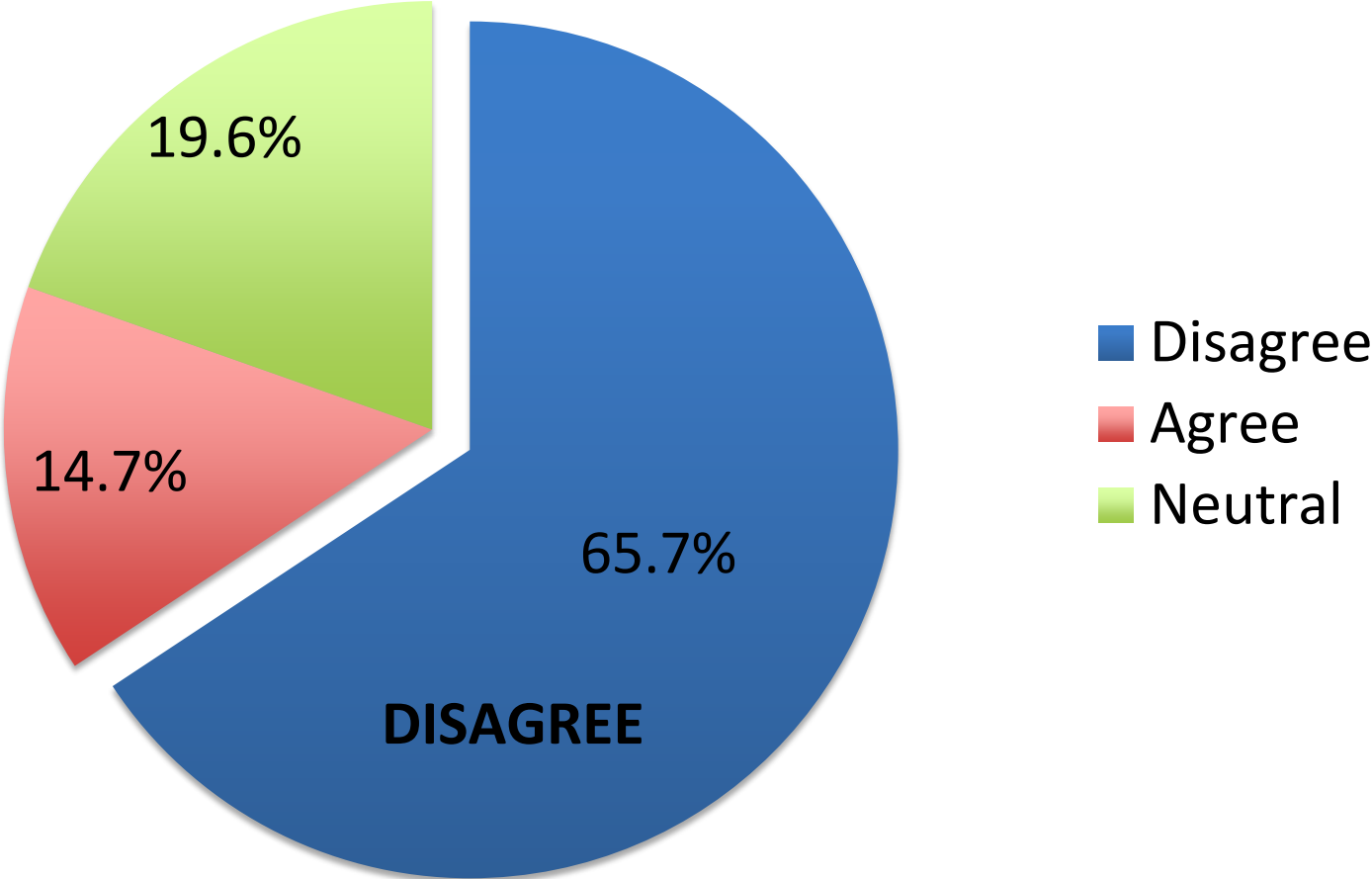
-Sign-outs have been identified as crucial for identifying sick patients and ensuring continuity of care

# McGill, UdeM, Sherbrooke, and Laval residents who participated in the survey feel this...

**I am able to know my patients well**



**With the current duty schedule, patient safety is improved**



**n = 61 Quebec residents  
working on both restricted  
models**

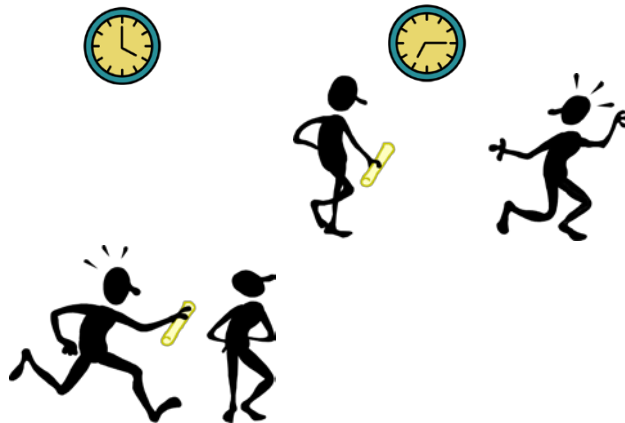


# There has been an increase in sign-outs

- They are not like this:



- But more like this...





## **Resident perceptions on the impact of this change**

- **Detrimental to sleep**
- **Working same hours, but in a more fragmented fashion**
- **Increase in sign-outs with potential effects on patient care**



## ACKNOWLEDGEMENTS

MOHAMMED SHAHEEN  
SINZIANA DUMITRA  
ALEXANDRE SAUVE

# How can we improve!?

Weekends (16hrs)

