ABMSCONFERENCE

2017

Board certification, MOC, and surgical complications

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ABMS Visiting Scholar, 2016-2017

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ACHIEVING IMPROVEMENT THROUGH ASSESSMENT AND LEARNING. **TOGETHER.**

Disclosures

- I’m currently an associate at McKinsey & Company and a recent graduate from the Johns Hopkins School of Medicine

- This presentation does not reflect the opinions of these organizations

We evaluated the impact of board certification and maintenance of certification (MOC) on complications after surgery in Medicare patients

Background

- **Patients value board certification and MOC**
- Physicians have raised concerns about the **time and value of MOC**
- **Little research has examined the impact of board certification programs on patient outcomes**, especially in surgery

Research questions

- What is the association between board certification and MOC and **outcomes important to patients**?
- How can these programs be leveraged to **improve the quality of healthcare**?

We analyzed the surgical outcomes of 1.9 million Medicare patients from 2009-2013

Data sets included in our analysis

Surgeon outcomes (ProPublica's Surgeon Scorecard)

Procedures
- **14,598** surgeons
- **8 procedures in 4 specialties**
- 1.9 million patients

Complication rates
- **Inpatient mortality** or **preventable 30-day readmission**
- Surgeons classified as **outliers (highest 10%)** and **exemplars (lowest 10%)**

Surgeon volume
- Ranked by tertiles, **minimum 10 cases**

NPI #

1. **Certification status** (ABMS)
   - Board certification
   - MOC
2. **Surgeon characteristics** (CMS)
   - Years in practice
   - Primary hospital affiliation
3. **Hospital characteristics** (AHA)
   - Academic status
   - Urban/rural setting
   - For-profit status
   - Size

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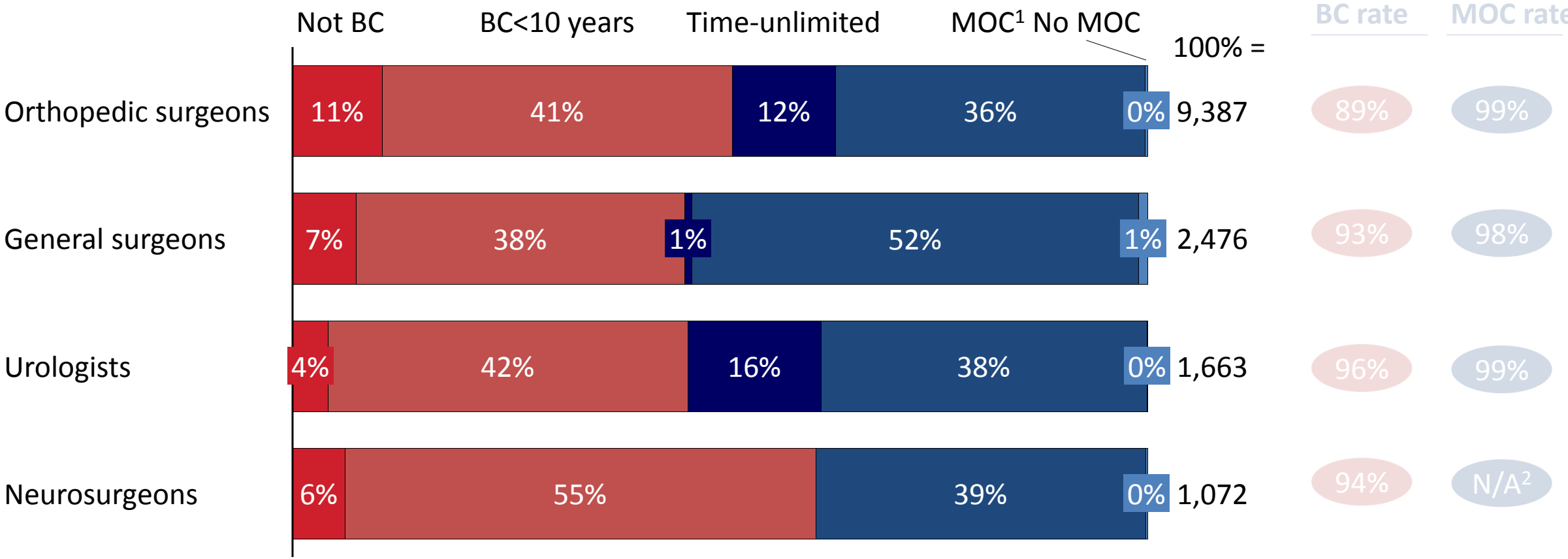
91% of surgeons were board certified; 99% of eligible surgeons participated in MOC

Board certification status of included surgeons (N=14,598)

% surgeons in each group



1 Among surgeons board certified for at least 10 years; defined as having MOC fulfilled at any point during 2009-2013

2 ABNS only started issuing time-limited certificates in 1999, so as of 2009, surgeons were still beginning MOC

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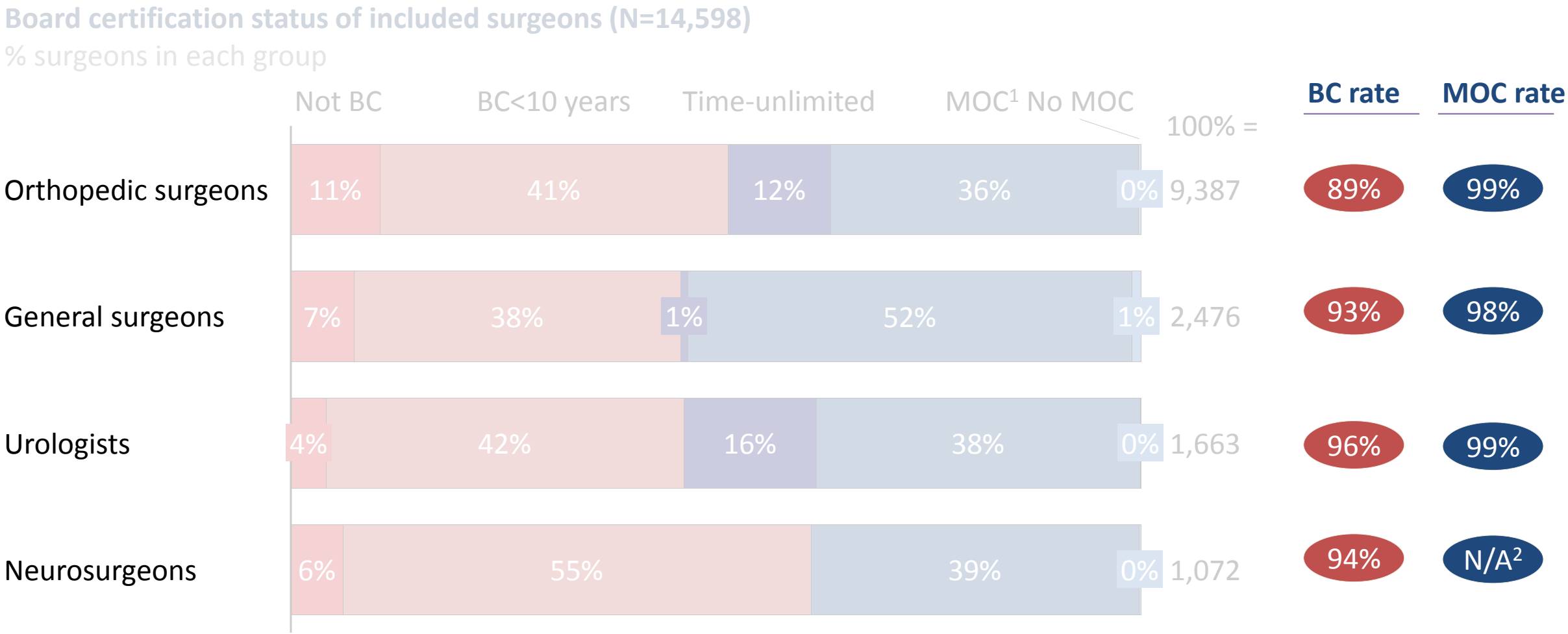

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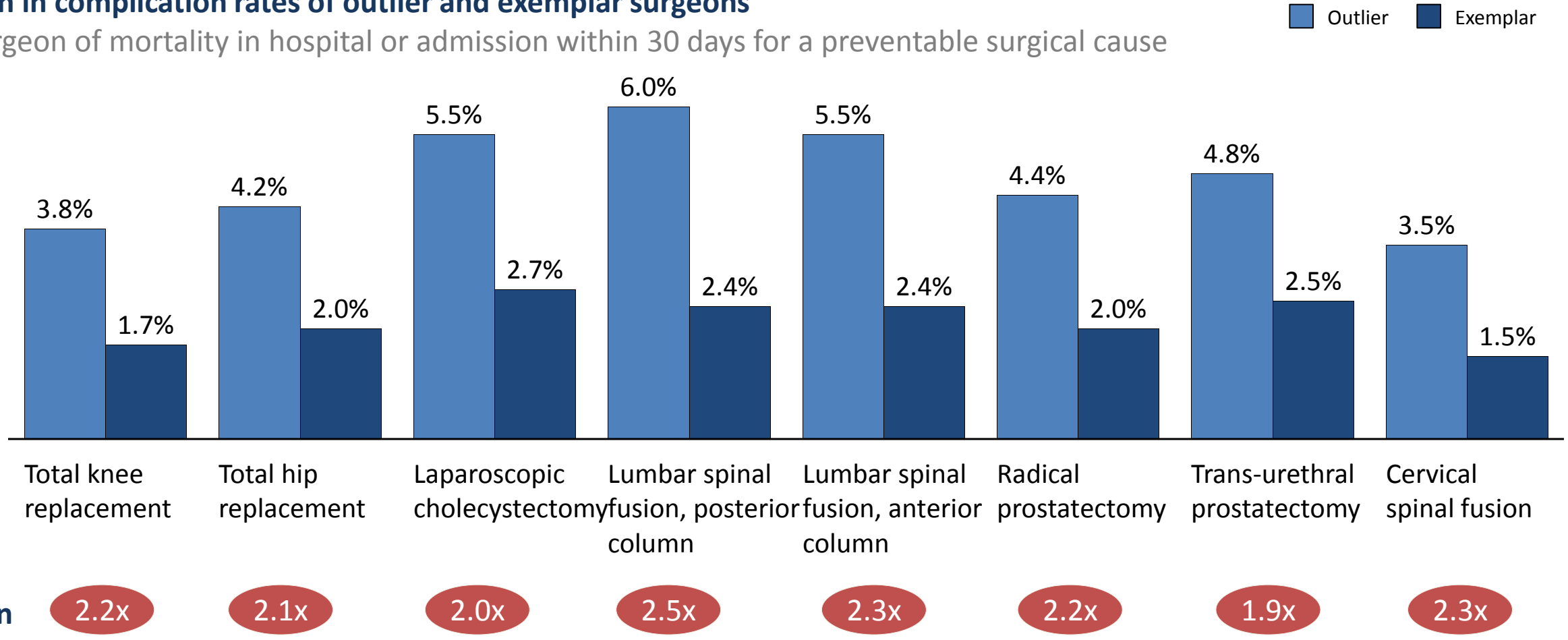
Up to 2.5 fold differences in complication rates by surgeon

Variation in complication rates of outlier and exemplar surgeons

% by surgeon of mortality in hospital or admission within 30 days for a preventable surgical cause



Board certified surgeons 21% were less likely to be outliers

Association between board certification and likelihood of being an exemplar or outlier

Multivariable regression odds ratios[1] (95% confidence interval)

P<0.05 Not significant

	Orthopedic surgeons	Urologists	General surgeons	Neuro-surgeons	*Total*
Exemplar	**1.24** (0.95-1.61)	**0.94** (0.25-3.55)	**1.21** (0.76-1.95)	**0.71** (0.25-1.98)	**1.09** (0.88-1.34)
Outlier	**0.77** (0.63-0.94)	**0.57** (0.26-1.25)	**0.60** (0.36-0.99)	**1.10** (0.48-2.52)	**0.79** (0.66-0.94)

Key findings

- **No association between board certification and exemplar status**
- Board certified surgeons were **21% less likely to be outliers**
- **Non-board certified surgeons** performed **14% of all procedures**

1 Multivariable models were adjusted for surgeon volume, years in practice, hospital size and academic status, hospital profit status, rurality, and region within the US

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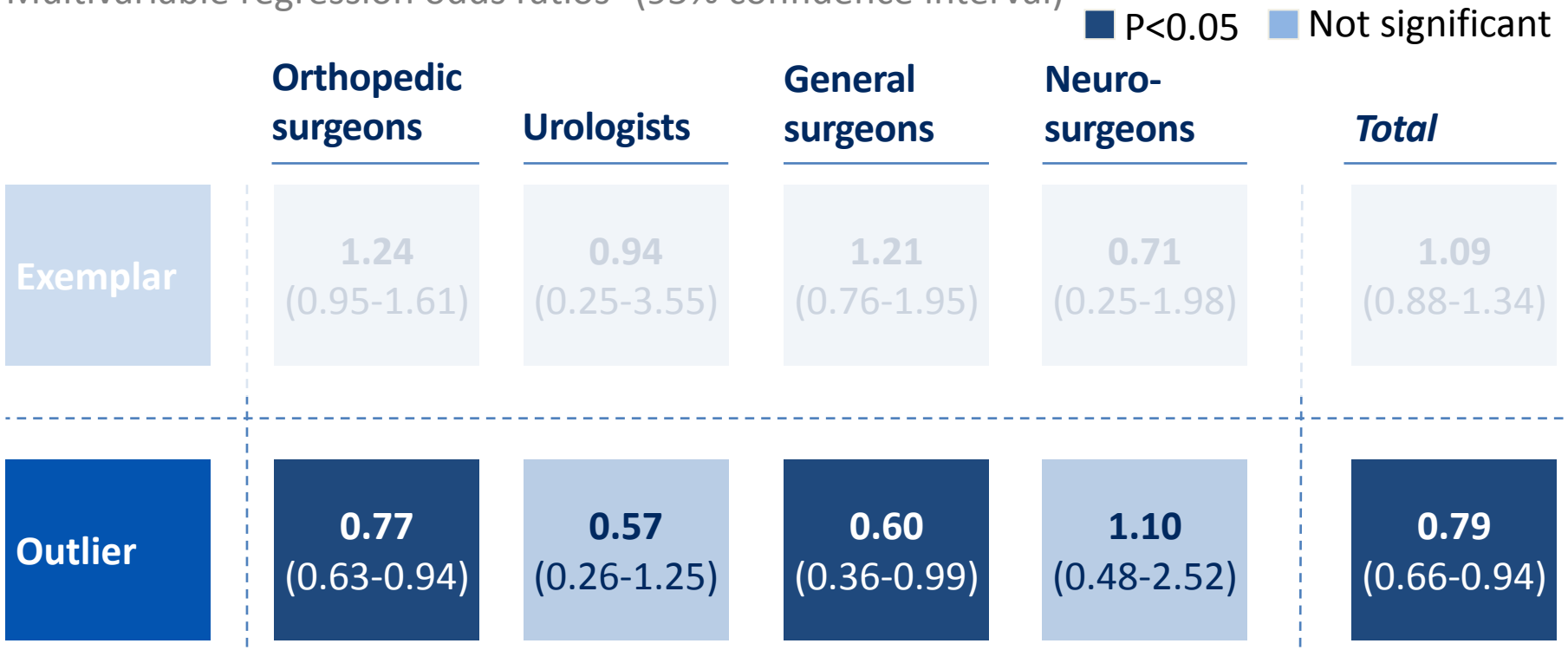

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No measurable association between MOC participation and complication rates after accounting for other surgeon factors[1]

Association between MOC and likelihood of being an outlier or exemplar

Regression odds ratios[1] (95% confidence interval)

P<0.05 Not significant

	Orthopedic surgeons		Urologists		Combined	
	Univariable	Multivariable	Univariable	Multivariable	Univariable	Multivariable
Exemplar	**1.41** (1.12-1.76)	**1.05** (0.75-1.46)	**2.08** (0.99-4.36)	**0.71** (0.22-2.29)	**1.39** (1.13-1.72)	**1.05** (0.75-1.46)
Outlier	0.94 (0.73-1.18)	1.17 (0.84-1.62)	0.85 (0.55-1.30)	1.39 (0.75-2.55)	1.06 (0.87-1.30)	1.23 (0.92-1.64)

Possible explanations

- Lack of **direct skills assessment in MOC**
- Inadequate **adjustment for experience**
- Use of **time-unlimited as a control group**

Sensitivity analyses

- 5% cut-off for outlier and exemplar
- Volume of 50 cases minimum
- Linear regression

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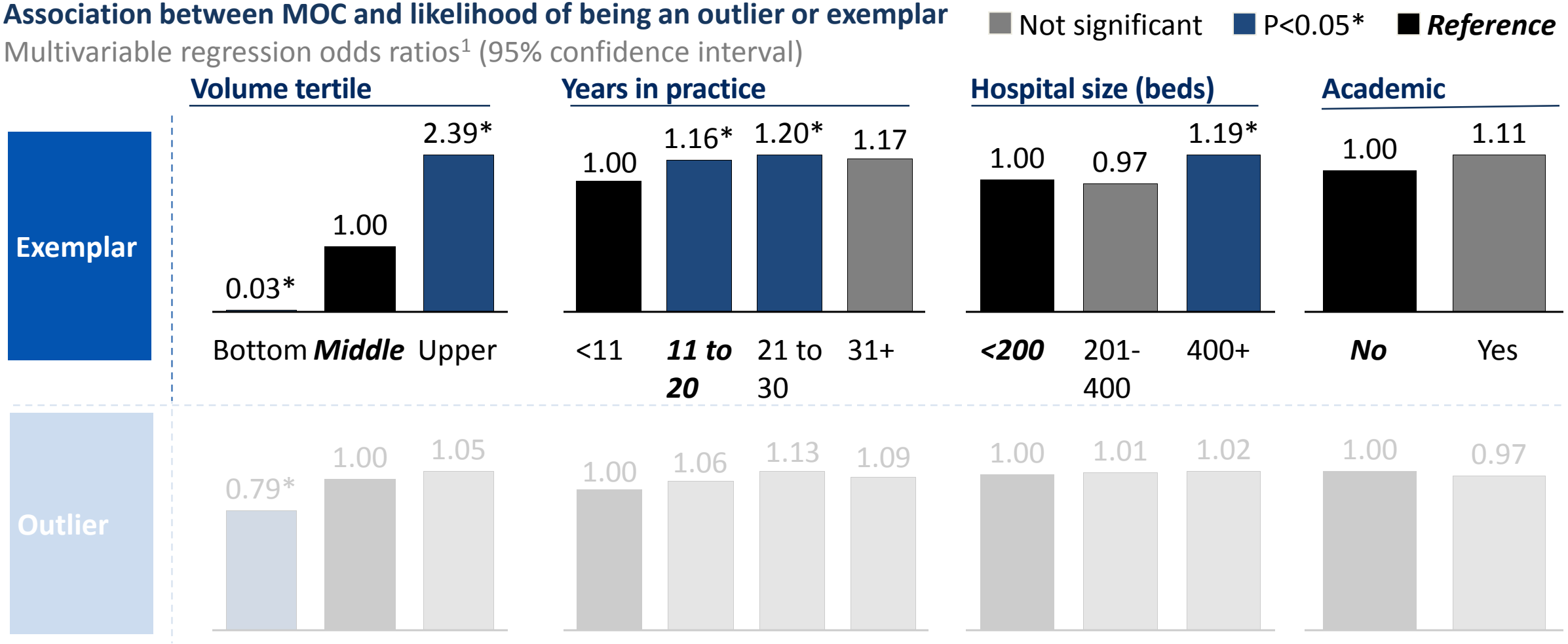

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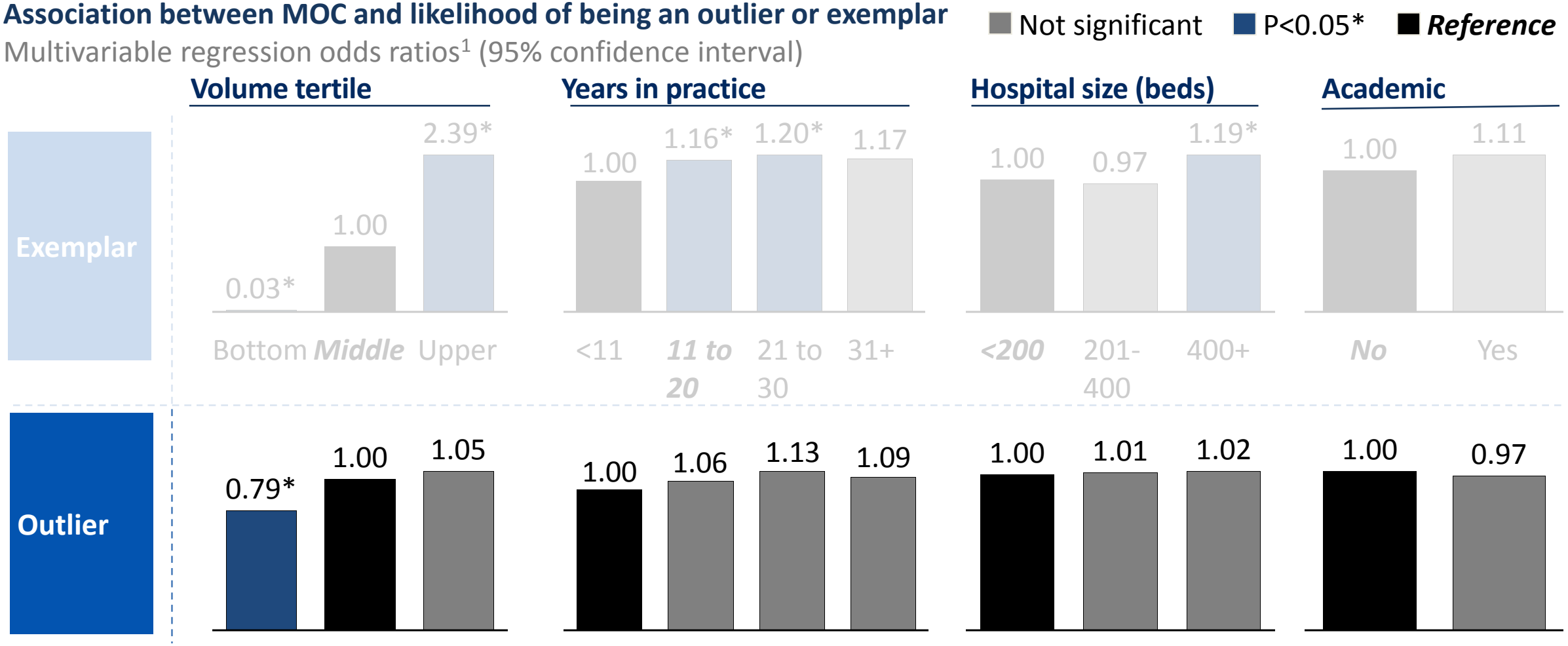

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We propose several opportunities to leverage board certification for quality improvement

Leveraging analytics

- Board certification is a **marker of quality** that can help **identify outlier surgeons**
- **Analysis of patient outcomes** may can **complement more formal case review (e.g. ABOS)**
- Further work is needed to build **analytic capabilities**, e.g. use of registries (NSQIP) while noting the **limitations of these data sets**

Quality improvement opportunities

- **Peer review and video coaching** are potential opportunities to **improve outcomes** among surgeons identified to have higher complication rates

Evaluation of ABMS programs

- Boards can coordinate the development of **actionable quality metrics** as well as **recertification questions linked to key drivers of complications**
- **Continuing evaluation of BC and MOC programs** is needed to increase their impact in **improving the quality and value of healthcare**

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- **ABMS:** David Price, Suzanne Resnick, Tom Granatir, Mira Irons

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Questions?