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Identification of risk factors associated with performance problems and remediation failure

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Disclosure

We do not have any affiliation (financial or otherwise) with a commercial organization that may have a direct or indirect connection to the content of our presentation.

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Background

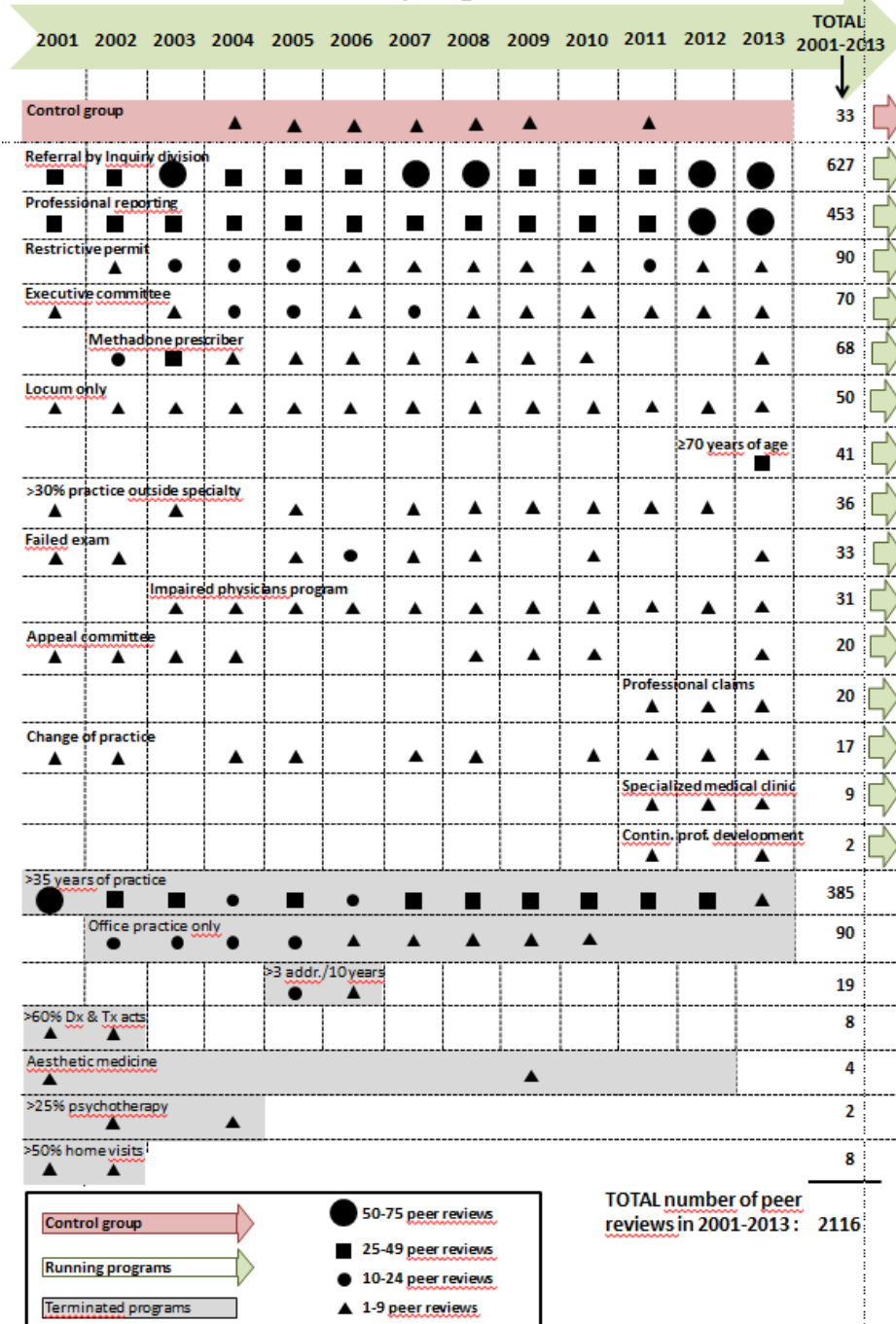
- ❑ **1974:** Adoption of the *Professional Code*
 - ➔ The *Collège des médecins du Québec (CMQ)* is now required to monitor the practice of physicians
- ❑ **1975:** To fulfill this responsibility in accordance with its mission, the Board of Directors of the Collège establishes the Professional Inspection Committee
- ❑ **1996:** A study* on a random sample of 100 family physicians reveals that 95% had an adequate quality of practice

*Goulet et al. (2002), "Performance assessment: Family physicians in Montreal meet the mark!", *Can.Fam.Physician*, vol.48, pp.1337-1344

Background

- ❑ **1997:** Inspection and CPD are consolidated into the Practice Enhancement Division of the Collège des médecins
- ❑ **1997:** the *Practice Enhancement Division* develops inspection programs based on indicators of quality of care
- ❑ **40 programs** have been developed over the years (15 still active)  **3** main programs : referral from Inquiry Division, professional reporting and ≥ 35 years of practice

Peer review programs timeline



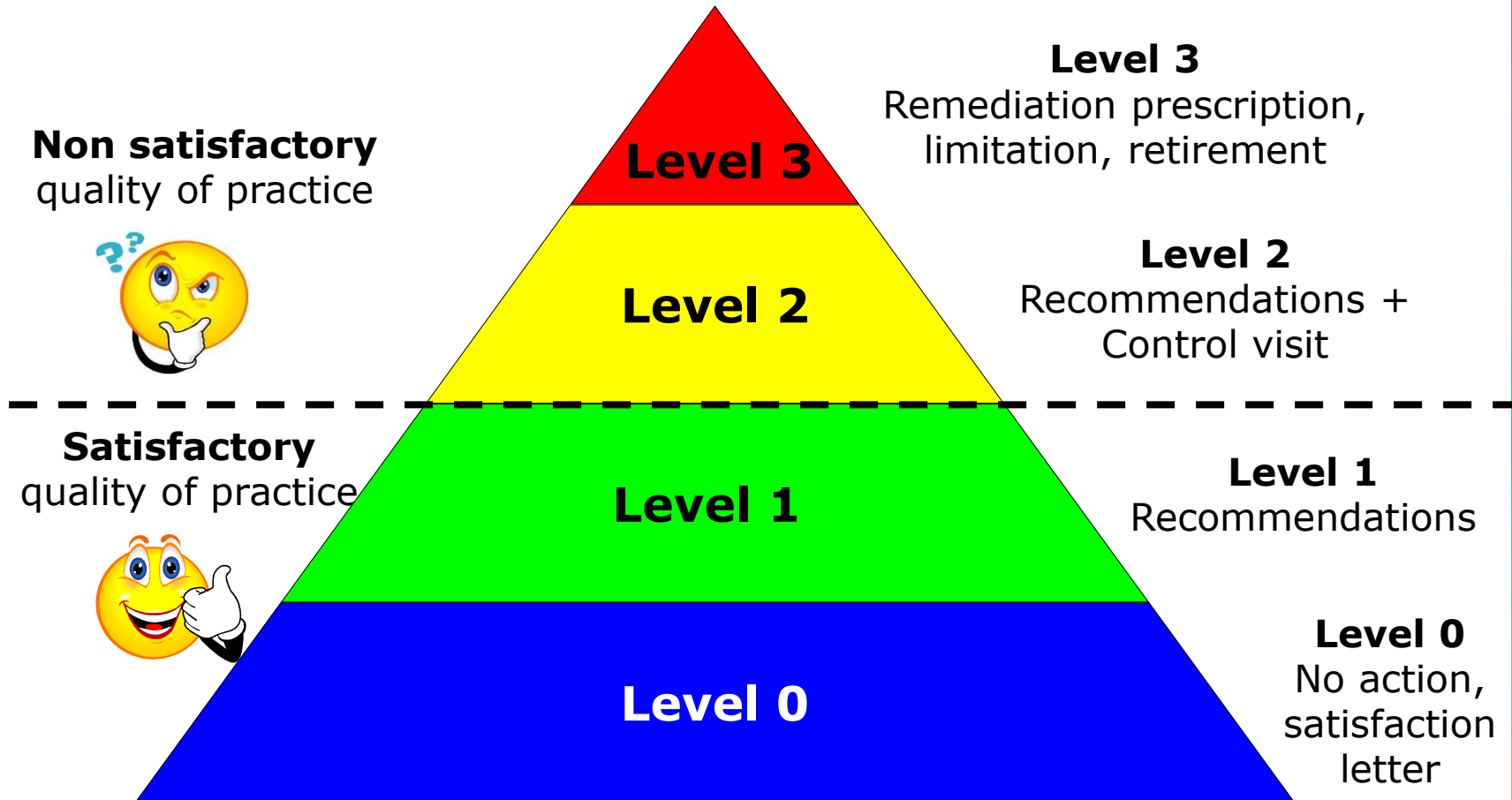
TOTAL number of peer reviews in 2001-2013: 2116

The peer review process in Quebec

- ❑ The process of evaluation is non voluntary and usually carried out by a full-time inspector, working alone or with a peer assessor
 - Chart-stimulated recall interview
 - Structured oral interview
 - Direct observation

- ❑ After an inspection visit, recommendations are made by the Professional Inspection Committee

Four levels of intervention following an inspection visit



Objectives

- ❑ Evaluate the efficiency of inspection programs in the identification of physicians with performance problems
- ❑ Identify risk factors associated with clinical performance problems
- ❑ Measure the association between risk factors and:
 1. Severity of remediation
 2. Outcome of remediation

Methods

- ❑ Analysis of N=2,020 inspection visits conducted between 2001 and 2013
- ❑ Logistic regression to compare each inspection program with a random selection of physicians
- ❑ Logistic regression to identify risk factors for non satisfactory performance

Methods

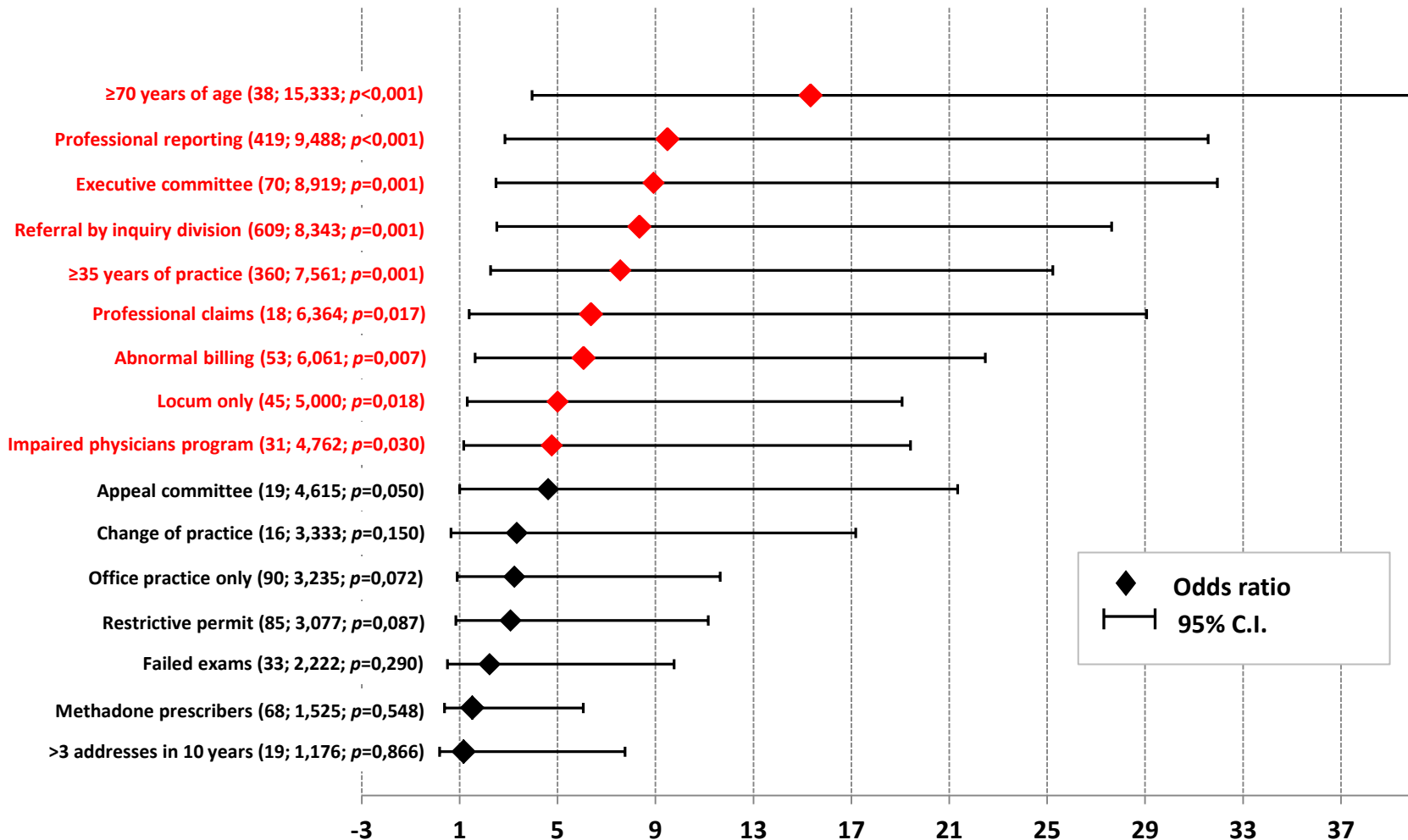
- ❑ Chi-square test of association between number of risk factors and:
 1. Severity of remediation
 2. Outcome of remediation
- ❑ In all analyses, the level of intervention of the inspection visit (satisfactory or non satisfactory) is used as the measure of performance of the physician

Results

- The inspection programs are efficient in the identification of physicians with performance problems
 - 9 programs are more effective than random selection

Efficiency of inspection programs

Relative efficiency of inspection programs compared to random selection
(*n*; odds ratio; *p* value)

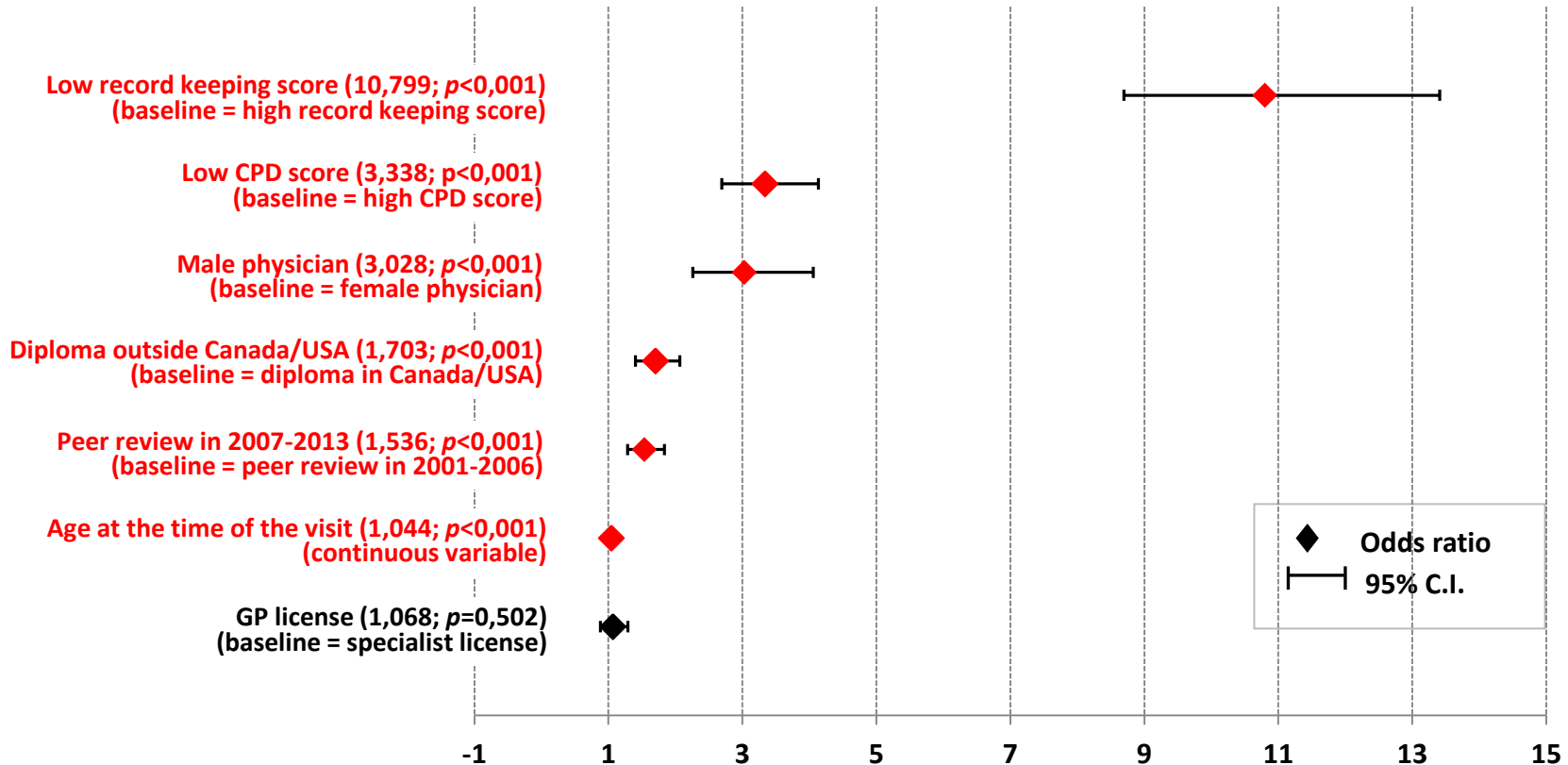


Results

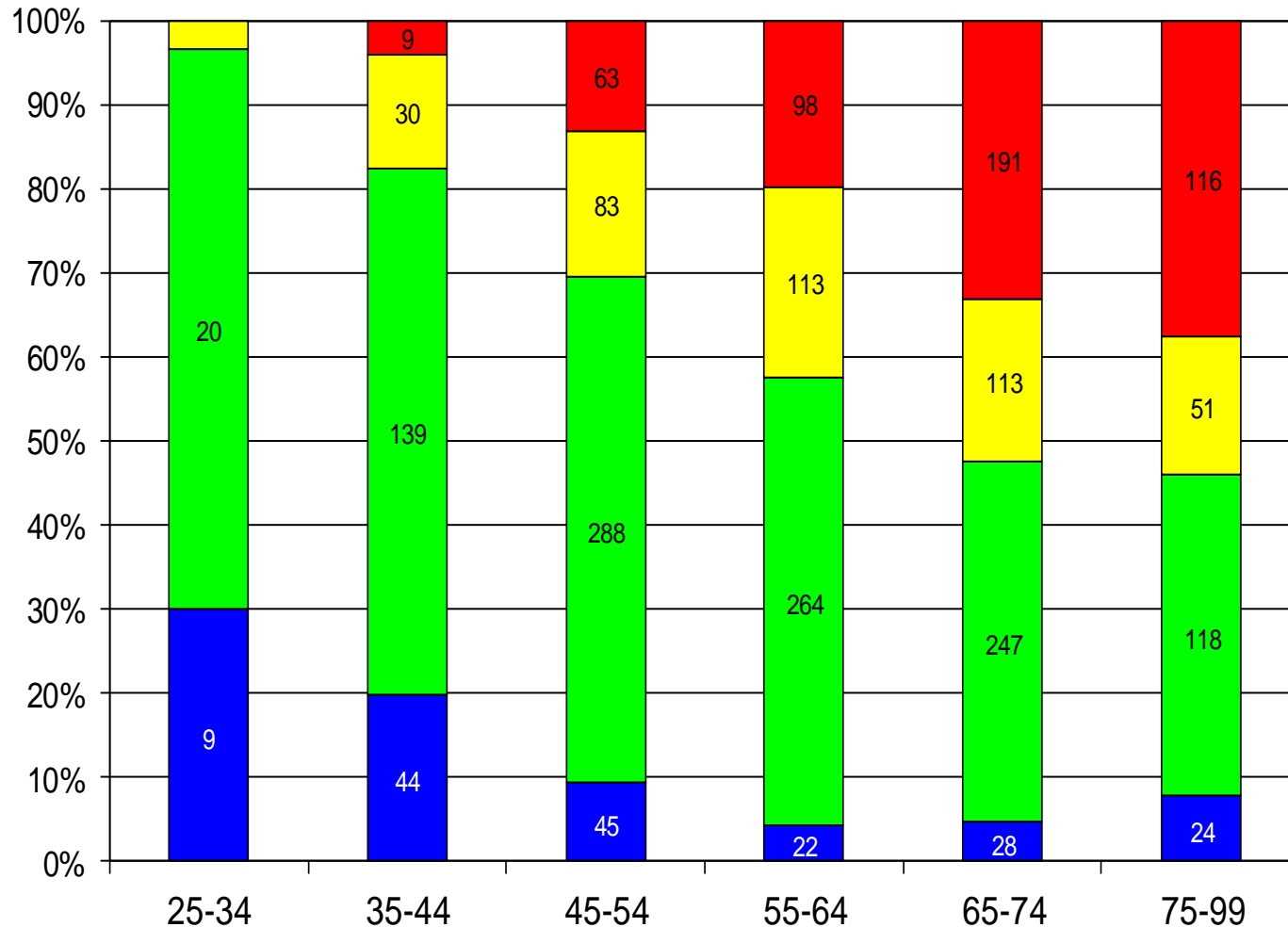
- ❑ Some risk factors are associated with clinical performance problems

Risk factors

Simple logistic regression model Independent variables and confounding variables (odds ratio; *p* value)



Intervention level vs. age

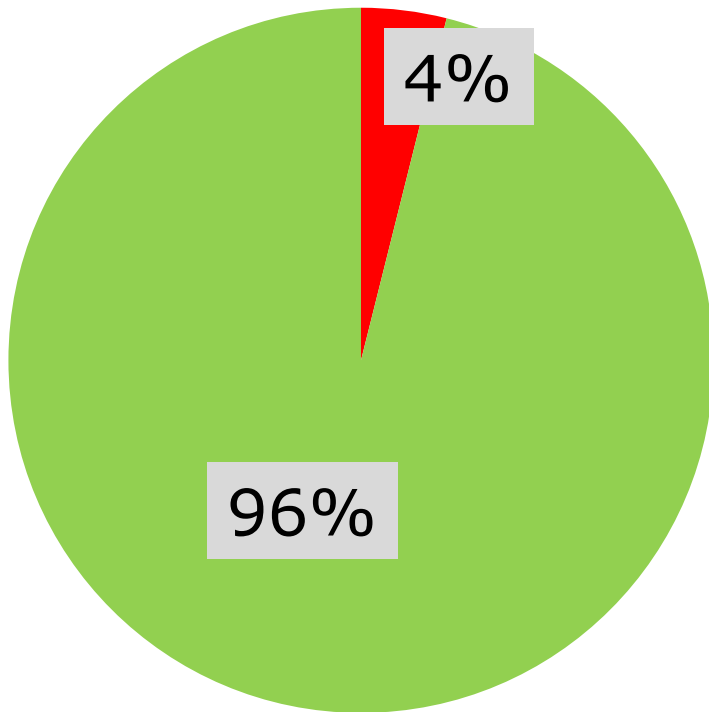


Final regression model

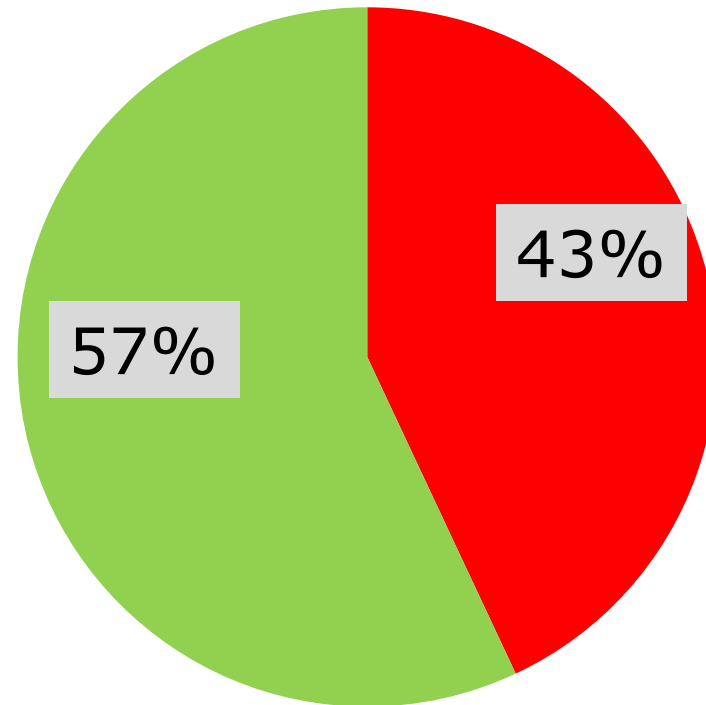
Variable	β	e^{β} (odds ratio)	p	95% C.I. for e^{β}	
Low record keeping score	2,230	9,299	0,000	7,393	11,697
Low CPD score	0,854	2,350	0,000	1,827	3,023
Diploma outside Canada/USA	0,648	1,911	0,000	1,499	2,436
Male physician	0,588	1,801	0,001	1,253	2,589
Age	0,020	1,020	0,000	1,010	1,030
Constant	-3,945	0,019	0,000		
Peer review in 2007-2013	0,356	1,428	0,002	1,139	1,789

Quality of the model

Physicians with none of the model's risk factors (n=128)



Physicians with one of the model's risk factors (n=1892)

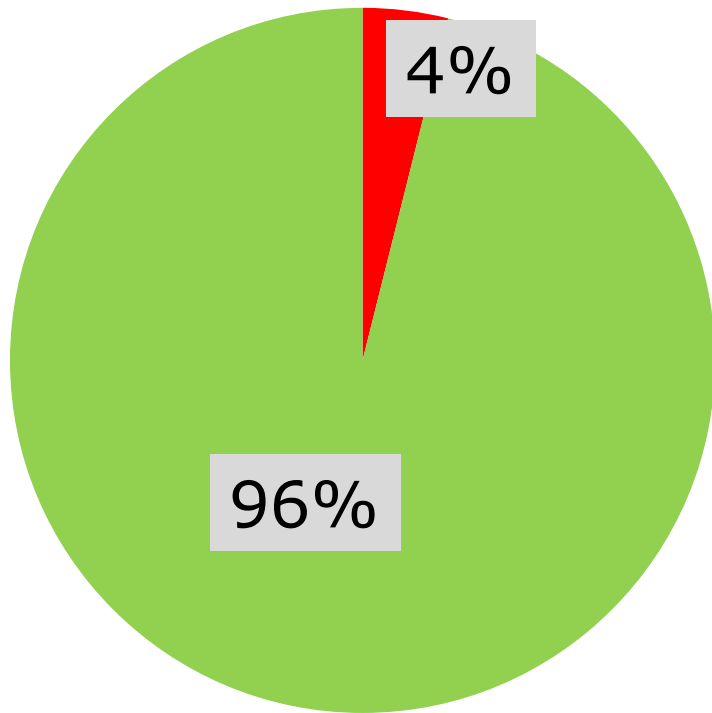


Intervention level

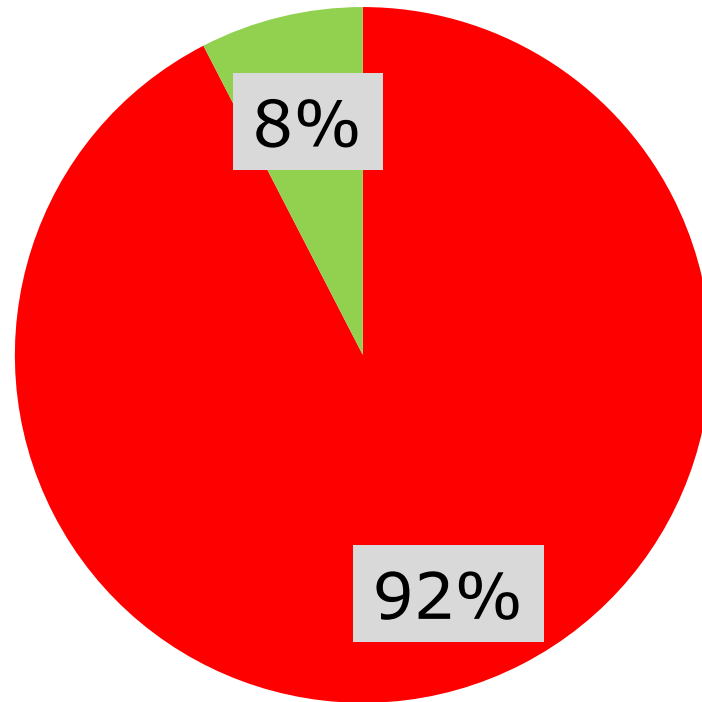


Quality of the model

Physicians with none of the model's risk factors (n=128)



Physicians with all of the model's risk factors (n=66)



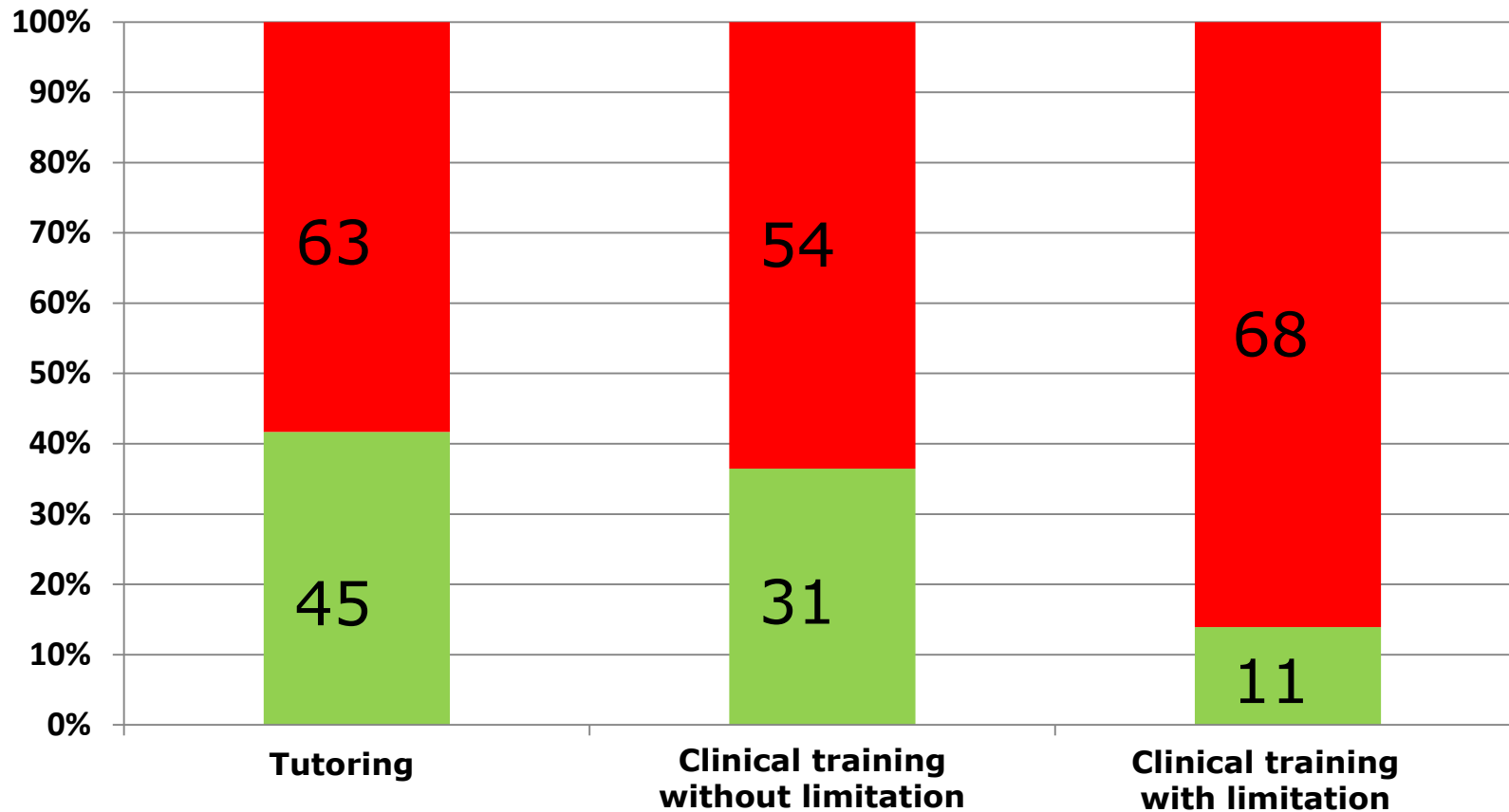
Intervention level



Results

- The analysis of *Remediation activities resulting from peer assessments* (n=290;2001-2012) reveals an association between risk factors for unsatisfactory performance and:
 1. Severity of remediation
 2. Outcome of remediation

Distribution of remediation activities according to the number of risk factors



Number of Risk Factors ■ 0, 1, 2 ■ 3, 4, 5

Tutoring vs. Clinical training without limitation:

$p = 0.55300$

Tutoring vs. Clinical training with limitation:

$p = 0.00004$

Clinical training without limitation vs. with limitation:

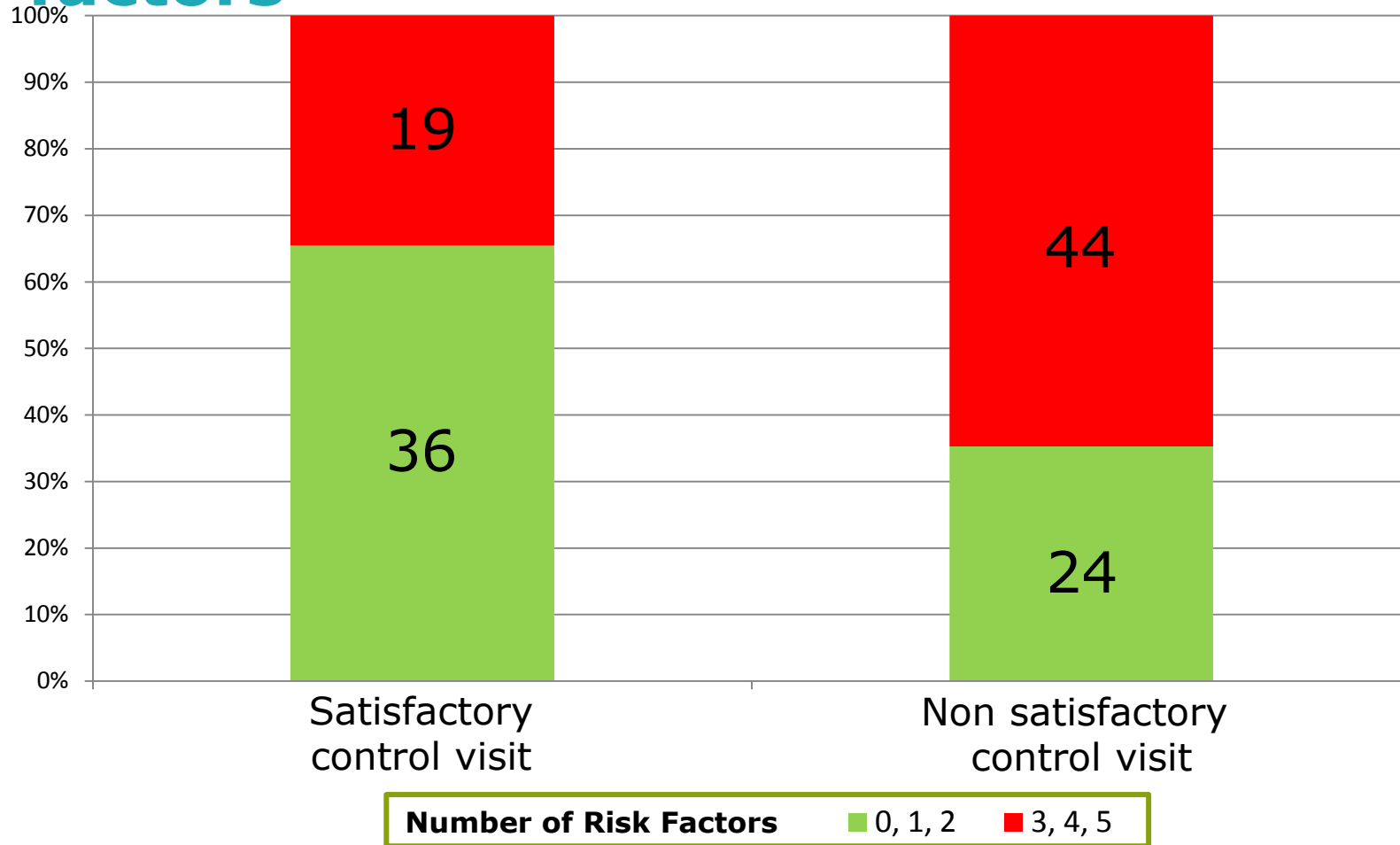
$p = 0.00117$

Failure of remediation (%) according to the type of remediation and the number of risk factors

Number of risk factors	Type of remediation		
	Tutoring	Training without limitation	Training with limitation
0	0%	0%	0%
1	0%	0%	33%
2	5%	31%	88%
3	22%	48%	76%
4	40%	68%	72%
5	20%	88%	79%

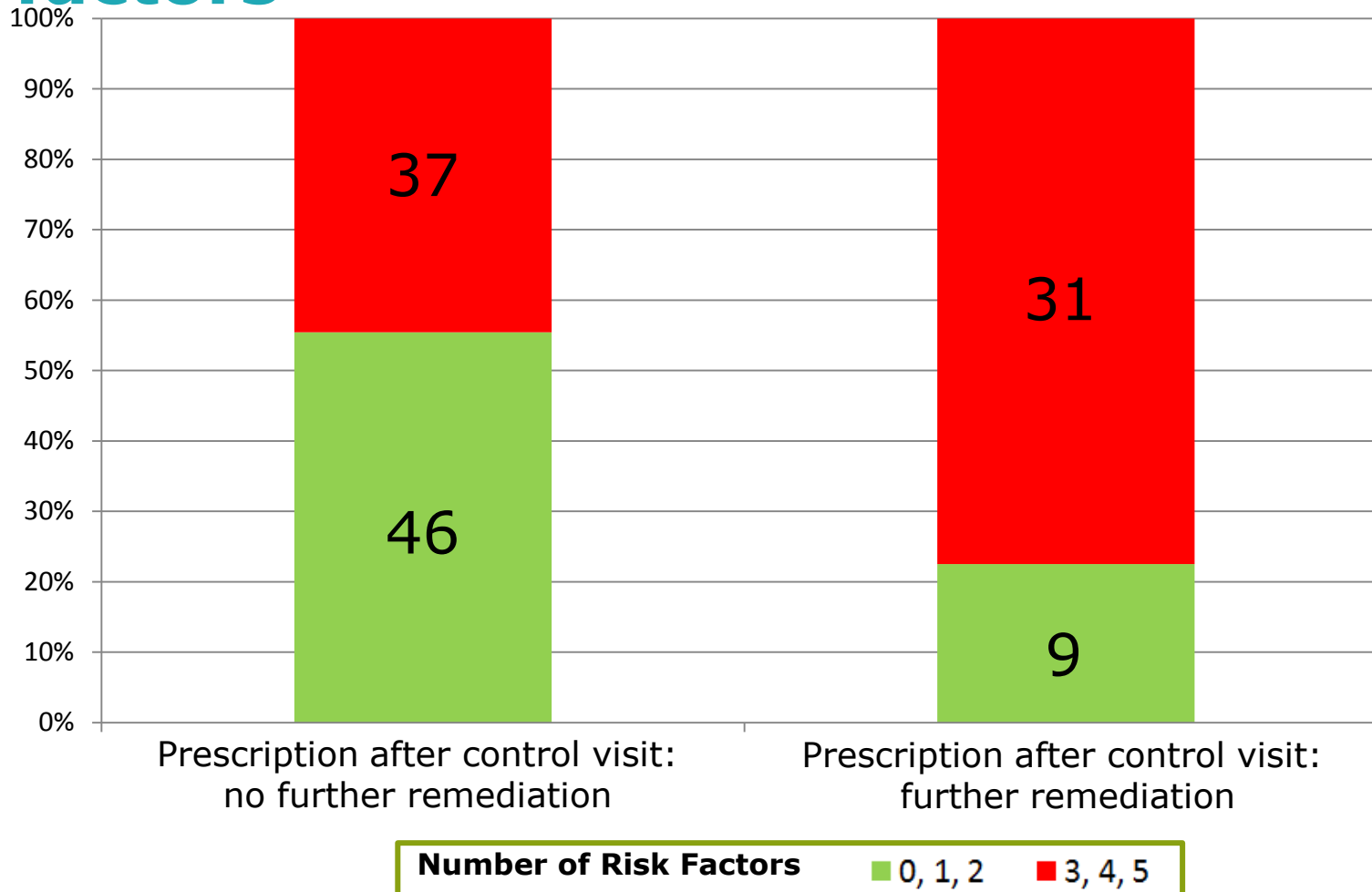


Outcome of the control visit after remediation according to the number of risk factors



$p = 0.00110$

Outcome of the control visit after remediation according to the number of risk factors



$p = 0.00088$

Conclusion

- ❑ Targeting inspection visits on the basis of screening programs is an efficient way of identifying physicians at risk with regard to quality of care
- ❑ Some risk factors for poor quality of care were identified: low record keeping score, low CPD score, diploma outside Canada/USA, male physician, age

Conclusion

- ❑ The number of risk factors is related to:
 - The intensity of remedial activities (from tutorial/clinical training without limitation to clinical training with limitation)
 - The outcome of the remedial activities
 - The outcome of the control visit



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