

# Too Frequent Low-Dose Methotrexate Prescriptions Quality Control and Quality Assurance

Sascha Karlen

Research Centre for Medical Informatics



UniversitätsSpital  
Zürich

**Methotrexate 1x / Mo**  
every **M**onday or every **m**orning?

# Content

- introduction
- questions under study
- method
- definitions
- result
- discussion
- conclusions

## Introduction

**Methotrexate 1x / Mo**  
every **Monday** or every **morning**?

### ■ treatment of many medical conditions

- cancer
- autoimmune diseases

### ■ scheduling and doses varies widely

- cyclical protocols (cancer chemotherapy)
- weekly administration (autoimmune diseases)

### ■ high-risk drug

- life-threatening conditions
- new or prolonged hospitalizations

## Question under study

**Methotrexate 1x / Mo**  
every **Monday** or every **morning**?

### ■ Do we have a quality problem?

- erroneous too frequent MTX\* prescriptions
- erroneous too frequent MTX administrations

\*(Methotrexate = MTX)

### ■ How can we assure quality?

- quality assurance program
- MTX alert

University Hospital Zurich (USZ)

Hospital Simmental-Thun-Saanenland AG (STS)

## Question under study

**Methotrexate 1x / Mo**  
every **Monday** or every **morning**?

### ■ Do we have a quality problem?

- **MTX prescription errors?**
- **MTX medication errors?**

\*(Methotrexate = MTX)

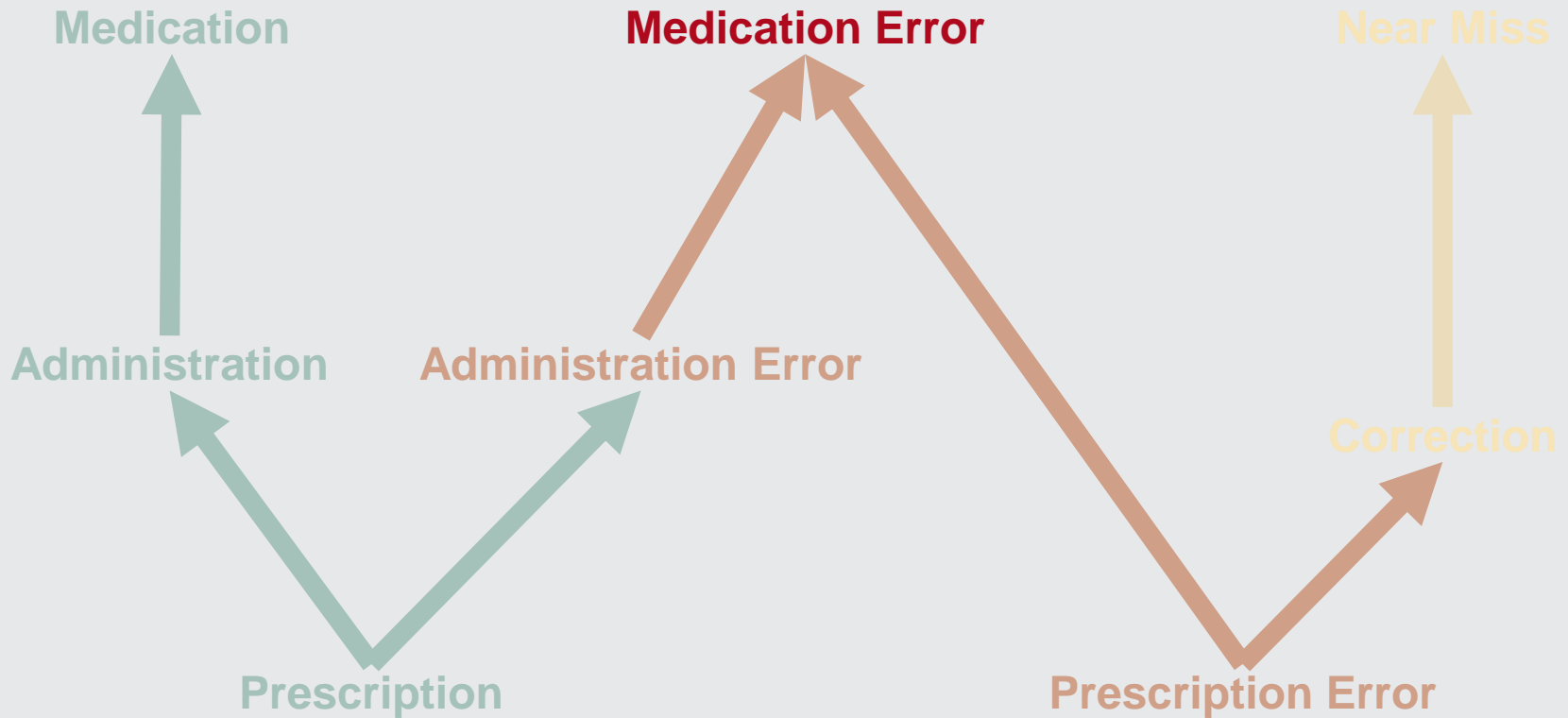
### ■ How can we assure quality?

- quality assurance program
- MTX alert

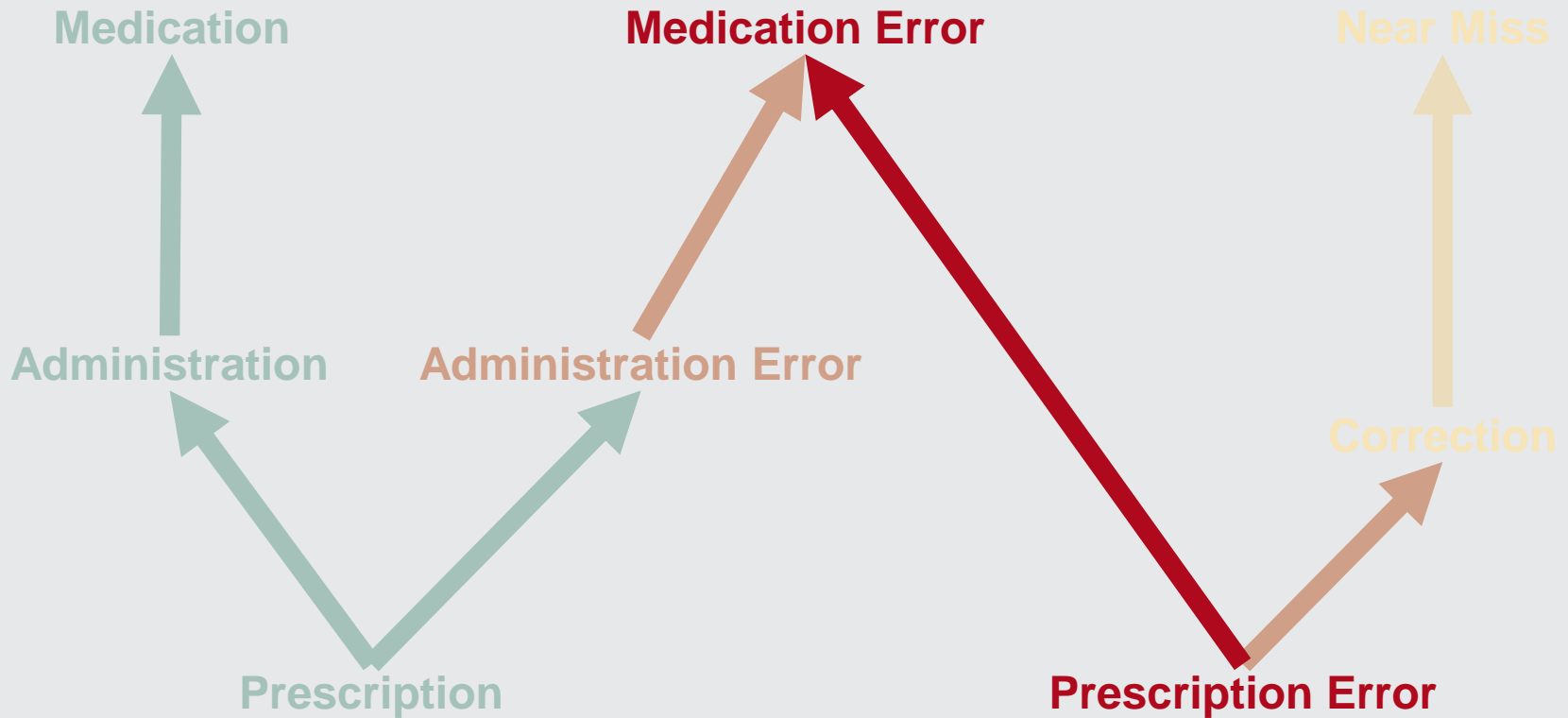
University Hospital Zurich (USZ)

Hospital Simmental-Thun-Saanenland AG (STS)

# Definitions

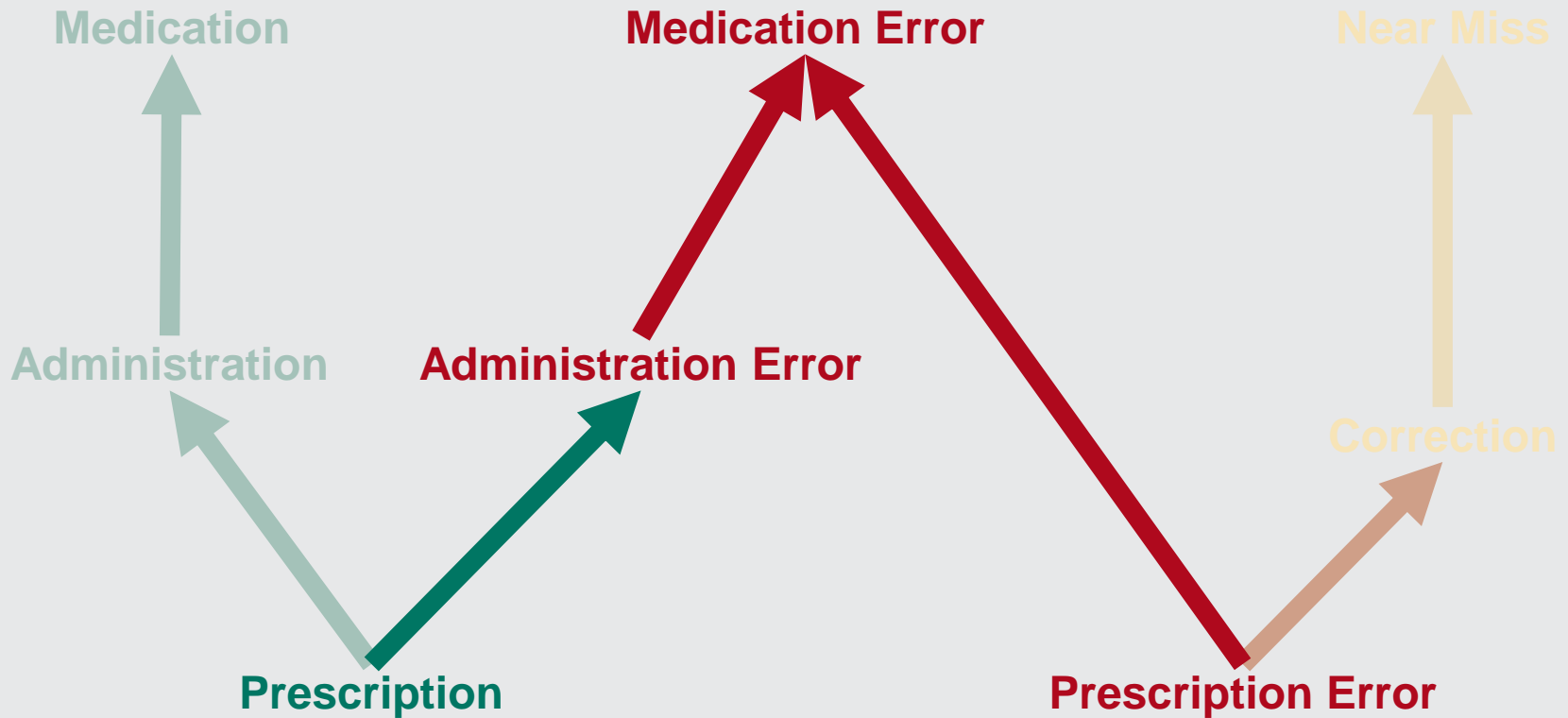


# Definitions

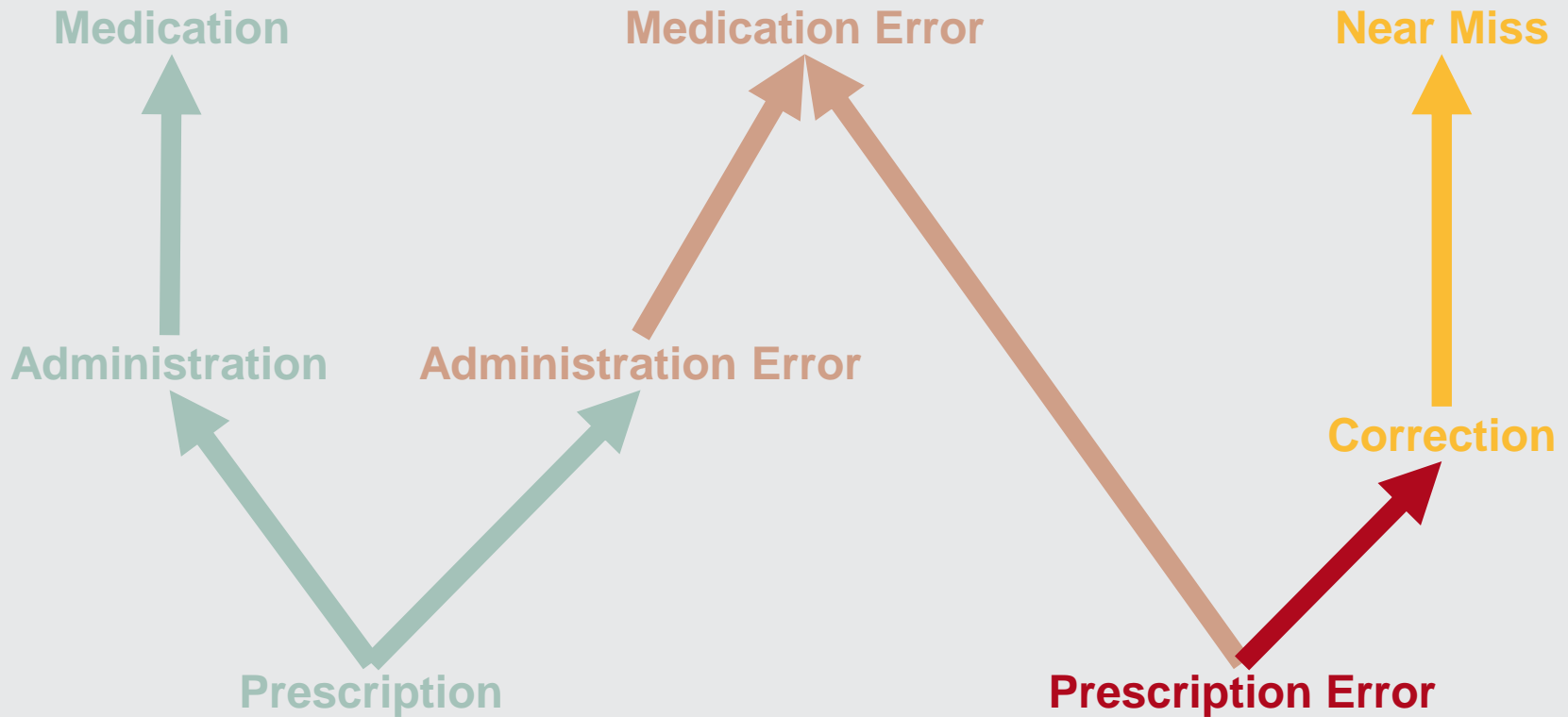




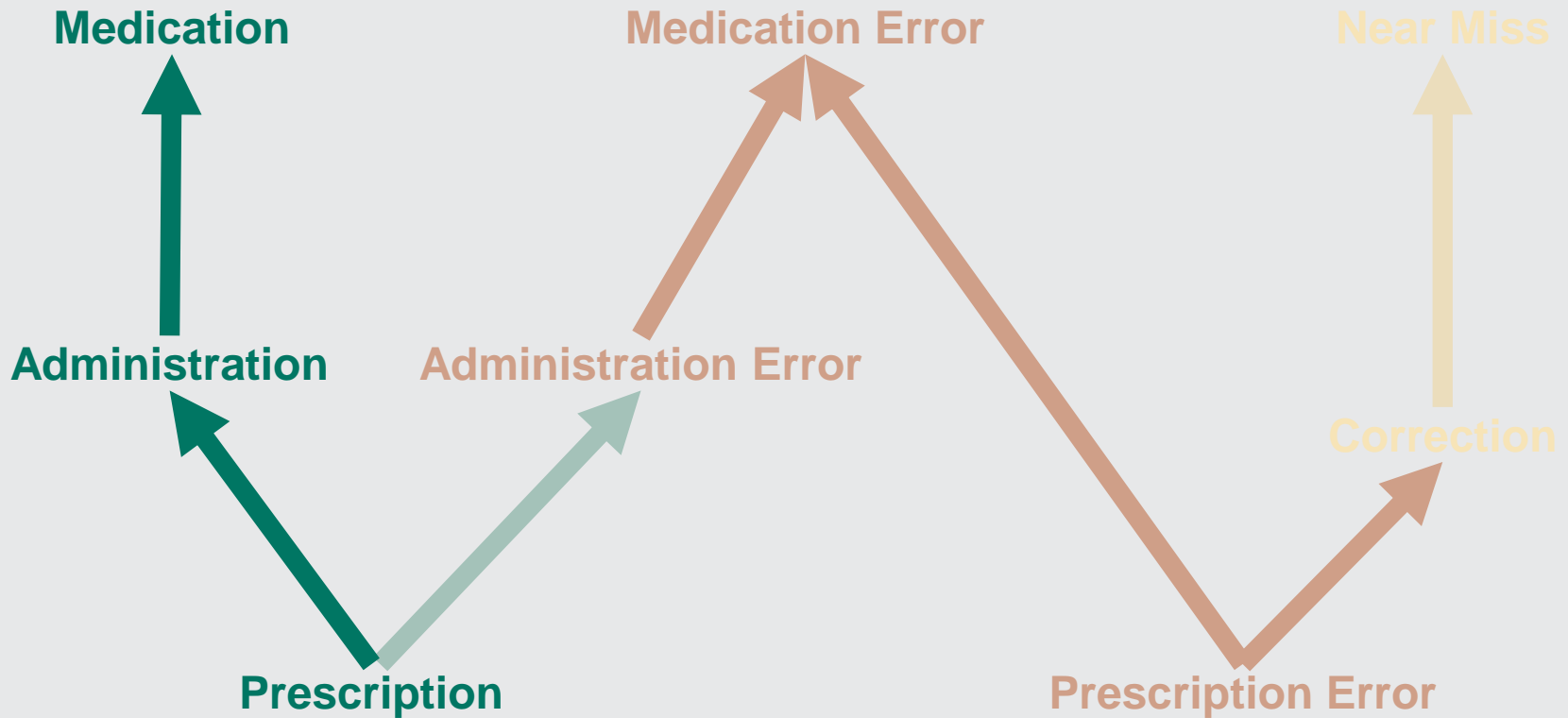
# Definitions



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## Method (Quality Control)

### ■ two hospitals

- Tertiary Care University Hospital Zurich (USZ)
- Secondary Care Hospital Simmental-Thun-Saanenland AG (STS)

### ■ retrospective analysis

- 55 month (December 2009 - June 2014)
- all non oncological MTX prescriptions
- inpatients only

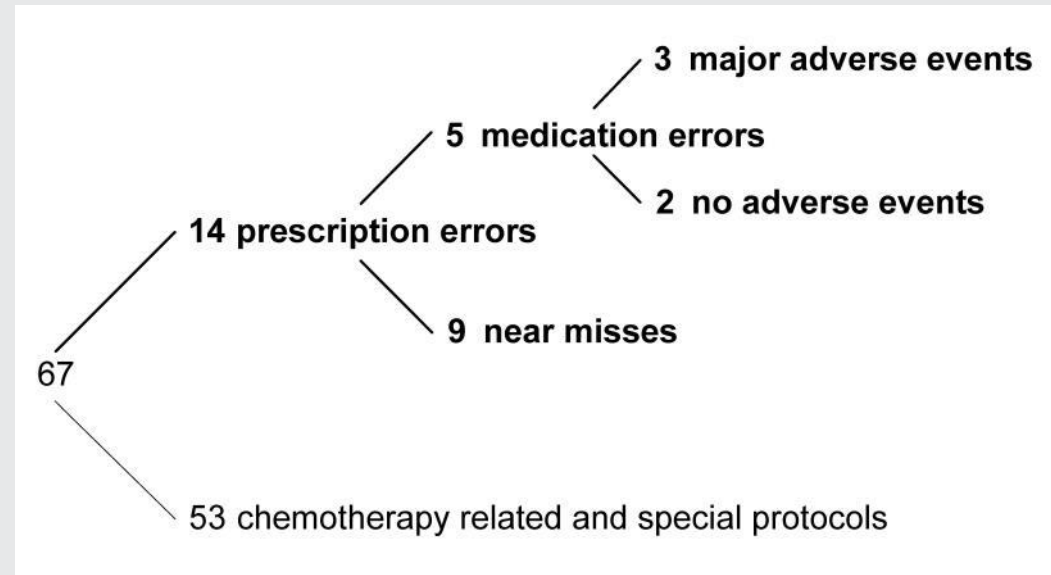
## Result (Quality Control)

### ■ USZ

- 55 months (12.2009 – 06.2014)
- 888 inpatients
- **14 prescription errors**
  - 9 near misses
  - 3 major adverse events
  - 2 no adverse events

### ■ STS

- 20 months (12.2009 – 07.2011)
- 79 inpatients
- **2 prescription errors -> 2 near misses**



## Method (Quality Assurance)

### ■ USZ

- quality assurance program starting January 1<sup>st</sup> 2015
  - daily list of all new MTX prescriptions
  - check by clinical pharmacologists
  - phone call to the attending physician (if necessary)

### ■ STS

- automated MTX alert starting August 12<sup>th</sup> 2011
  - for non-oncological MTX prescriptions
  - interruptive
  - informative: MTX, as a rule, is ordered once a week

## Result (Quality Assurance)

### ■ USZ

- 8 months (since January 2015)
- 571 MTX prescriptions
- 2 prescription errors -> 2 interceptions by clinical pharmacologist

### ■ STS

- 35 months (August 2011 – June 2014)
- 123 inpatients
- 1 prescription error -> 1 near miss

# Discussion

**USZ****Quality Control**

1.6%  
(14 errors / 888 inpatients)

**Quality Assurance**

↓ 2 interceptions  
~ 638 prescriptions

**STS**

2.5%  
(2 errors / 279 inpatients)

↓ 0.8%  
(1 error / 123 inpatients)

\*sample too little for statistical significant conclusions



# Conclusion

- **any incidence** of erroneous MTX prescriptions are considered **unacceptable**
- a **different quality assurance measure** was implemented in each hospital
- both approaches may have **an impact on patient safety**

an apple a day  
keeps the doctor away

Thank you

[sascha.karlen@usz.ch](mailto:sascha.karlen@usz.ch)

