

*EMR-Enabled
Continuous Improvement:
Comparative Meta-Analysis for
Highest Safety and Outcomes*



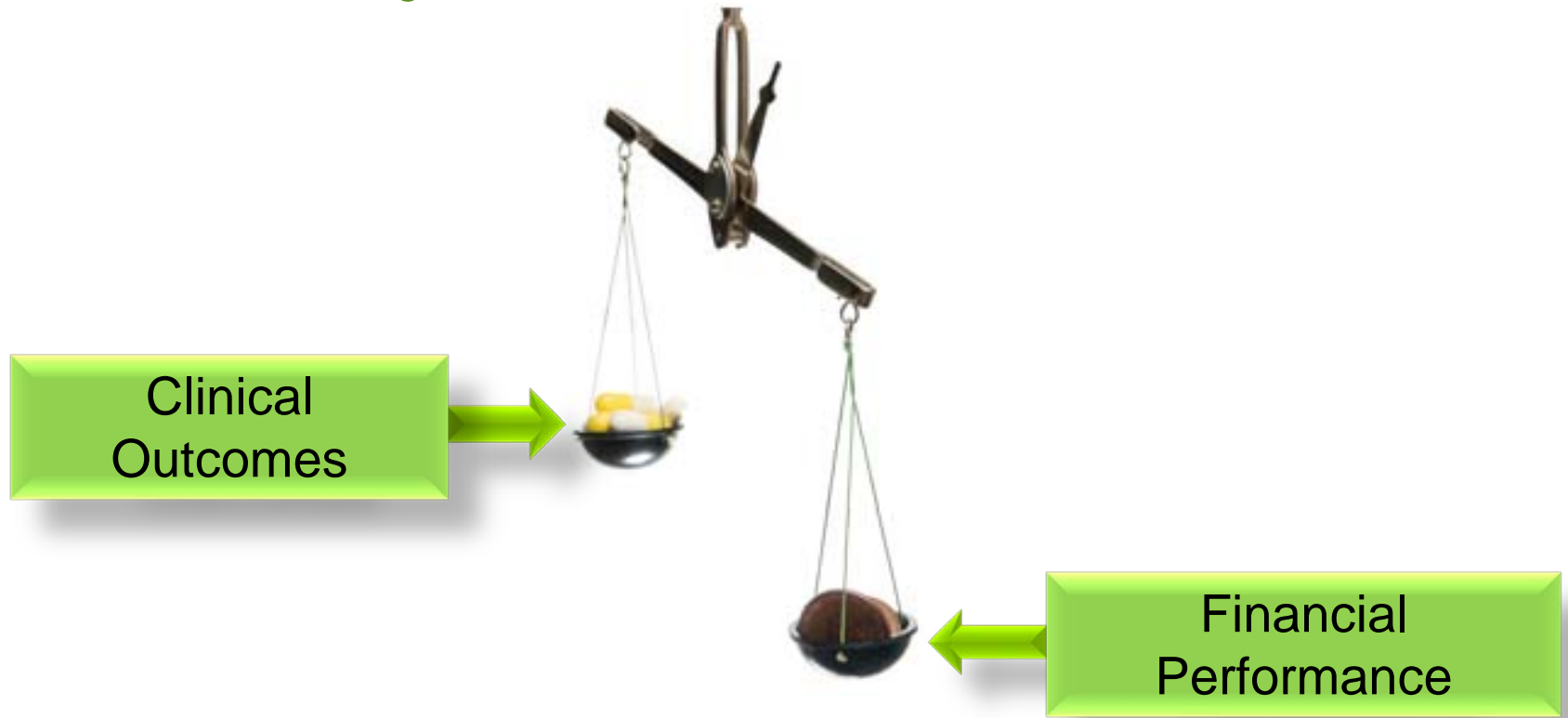
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Delicate Balance in Needs and Objectives ...



History of the Continuous Improvement Imperative

- “To Err is Human” – Need made Urgent
- Footholds
 - Deming, Juran, PDCA, Kaizen
 - Intermountain Healthcare
 - Inst for Healthcare Improvement (QMN, IHI)
 - Baldrige National Quality & Performance Award
- Culture & Healthcare-wide
 - 6-Sigma, Lean

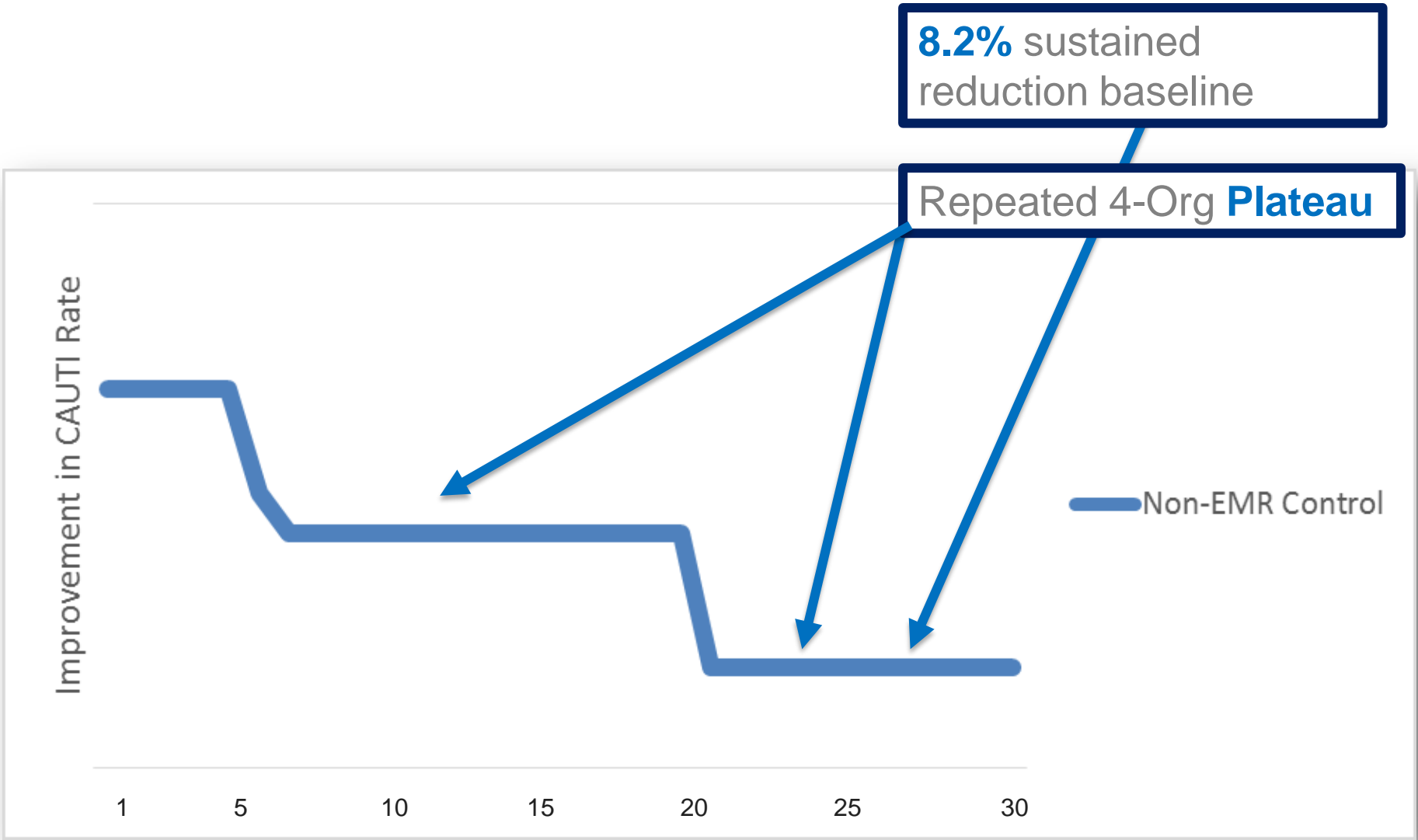
Does an EMR Make any Beneficial Difference?

- 33 CIO Colleague associates/friends
- Interchangeably sized and missioned organisations
- Fully independent undertakings
- Same set of questions
 - Which EPR in place, or none (paper control)
 - Which continuous improvement approach in place?
 - Which challenges selected for improvement in last 2-3 years? – **CAUTI universal**
- **16 Retained in Cohort(s)**
 - Starting from statistical equality
 - 6 months pre and 36 months post? 30 uniform

Four Groups, Four Orgs each: (as labeled by contributors)



- Non-EMR Control – Paper-based
- Compliance-based – More rigid, more prescriptive, not locally programmable, limited access to data, limited integration/interoperability, no provision for local team adaptations
- More Clinical-based – Strong clinical history, limited local programmability, improved access to data, improved community integration/interoperability, limited provision for local team adaptations
- Locally Programmable/Adaptable – Strong clinical history and full local programmability, adaptability, access to data, community integration/interoperability, and local team adaptations



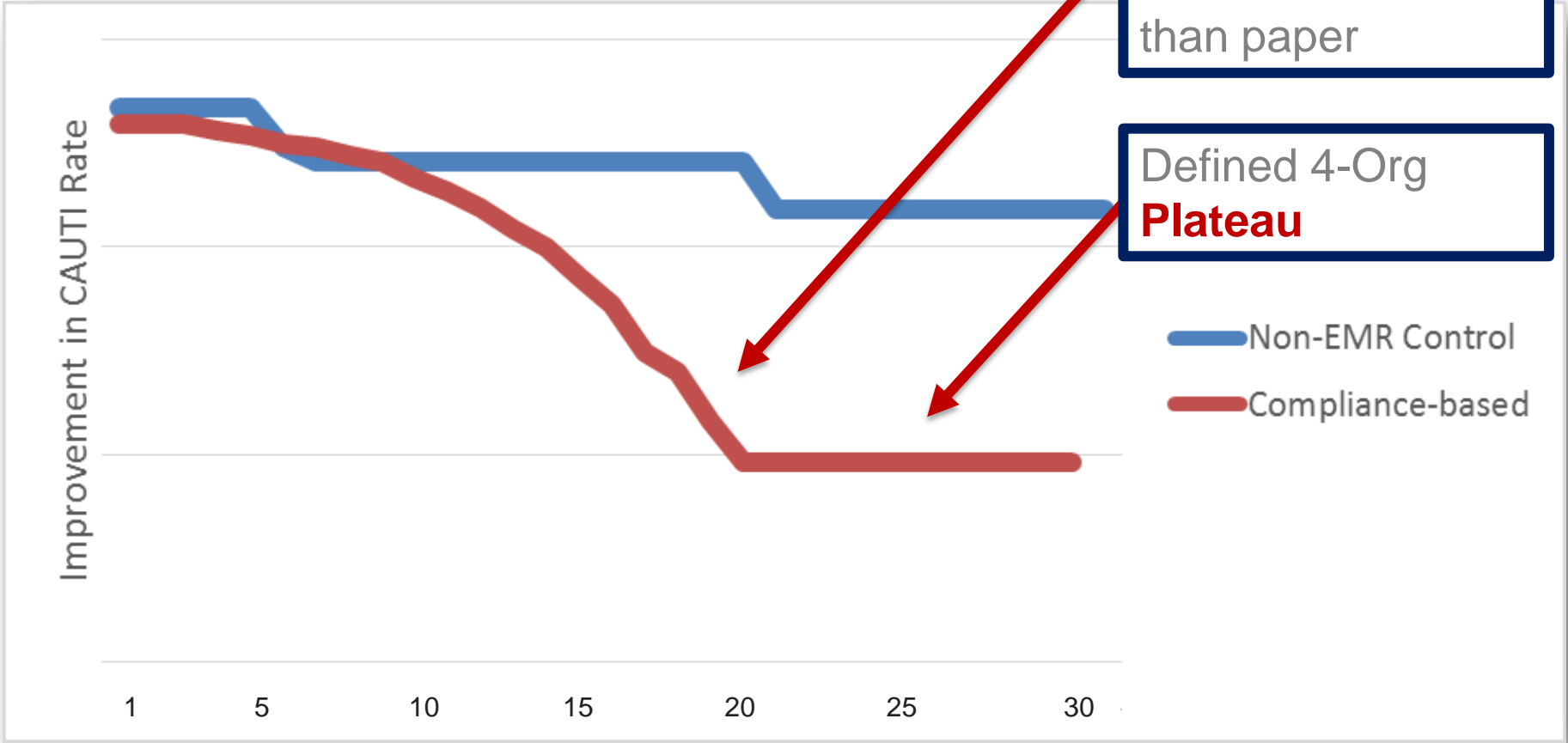
Improvement in CAUTI Rate

1 5 10 15 20 25 30

29.1% reduction from baseline
3.5 times more than paper

Defined 4-Org
Plateau

— Non-EMR Control
— Compliance-based



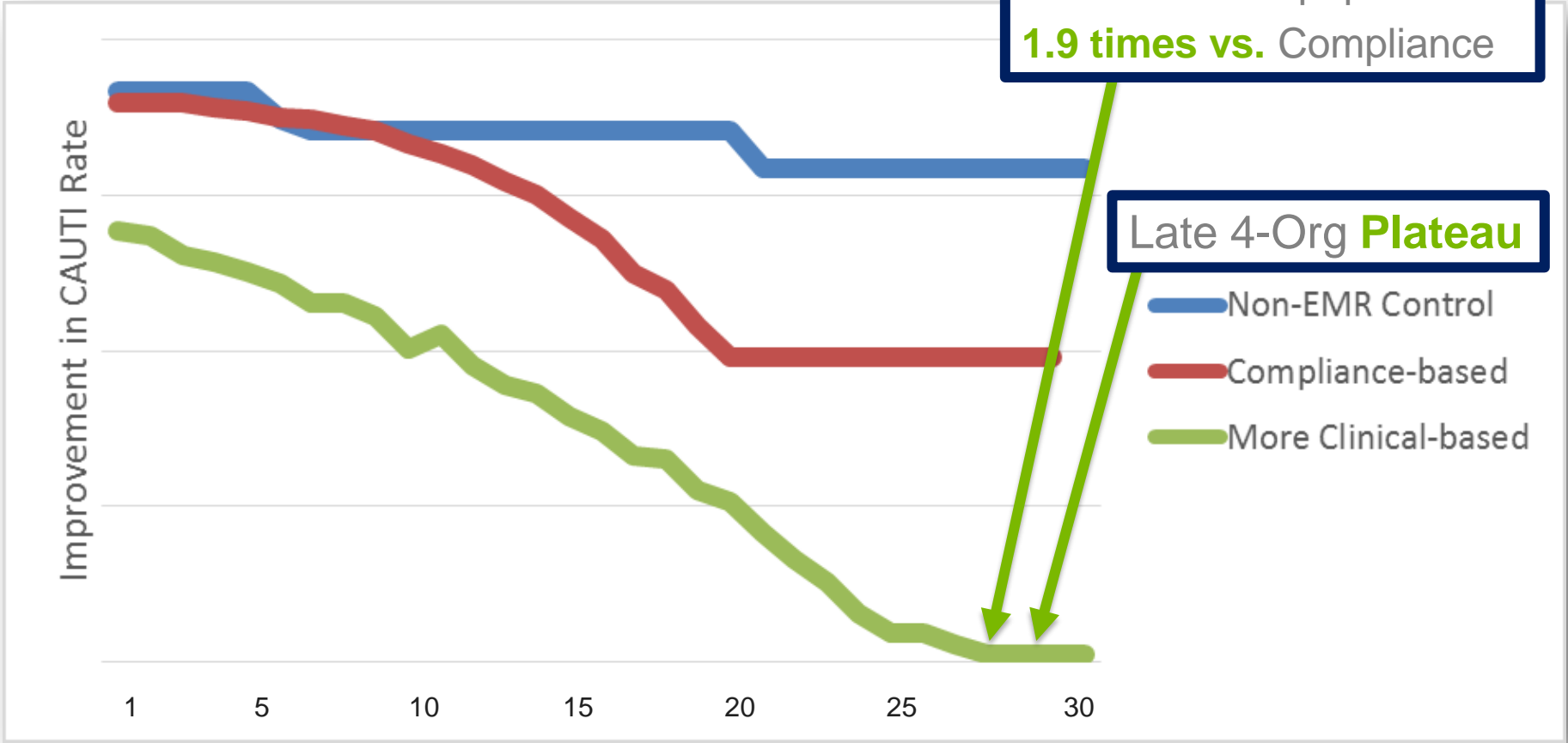
Improvement in CAUTI Rate

1 5 10 15 20 25 30

56.4% reduction from baseline
6.9 times vs. paper
1.9 times vs. Compliance

Late 4-Org **Plateau**

- Non-EMR Control
- Compliance-based
- More Clinical-based



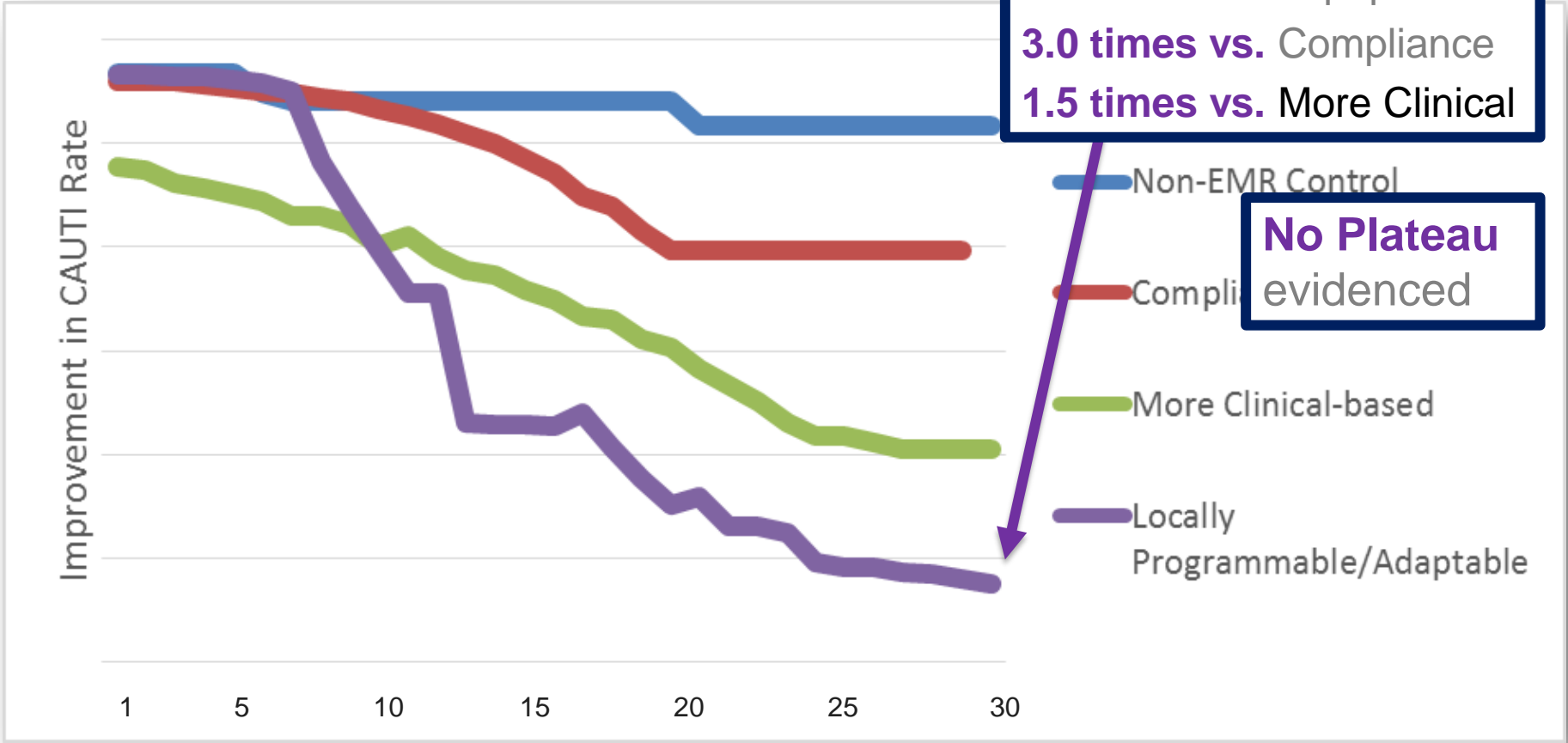
Improvement in CAUTI Rate

1 5 10 15 20 25 30

87.3% reduction from baseline
10.6 times vs. paper
3.0 times vs. Compliance
1.5 times vs. More Clinical

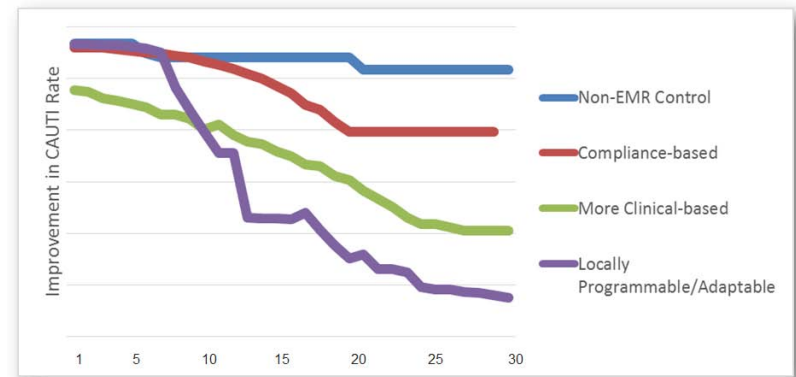
No Plateau
evidenced

- Non-EMR Control
- Compliance
- More Clinical-based
- Locally Programmable/Adaptable

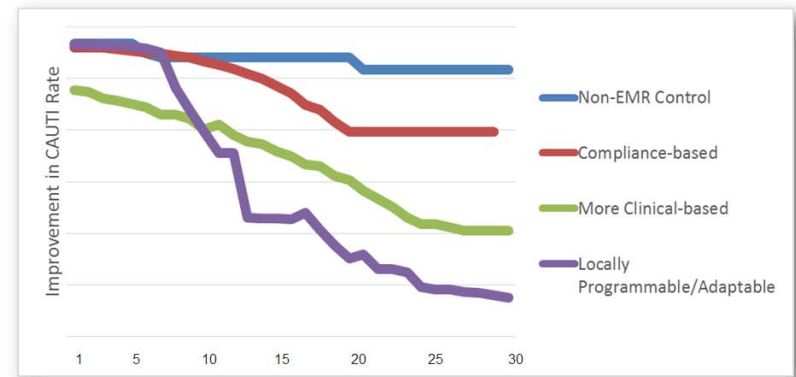


Summary of Comparatives:

- **Non-EMR Control.**
 - 8.2% vs. baseline
 - Then repeated plateaus
- **Compliance-focused EMR.**
 - 29.1% vs. baseline
 - 3.5 times Paper gains
 - Then defined plateau
- **More Clinical-based EMR.**
 - 56.4% vs. baseline
 - 6.9 times Paper gains
 - 1.9 times Compliance-focused
 - Late plateau

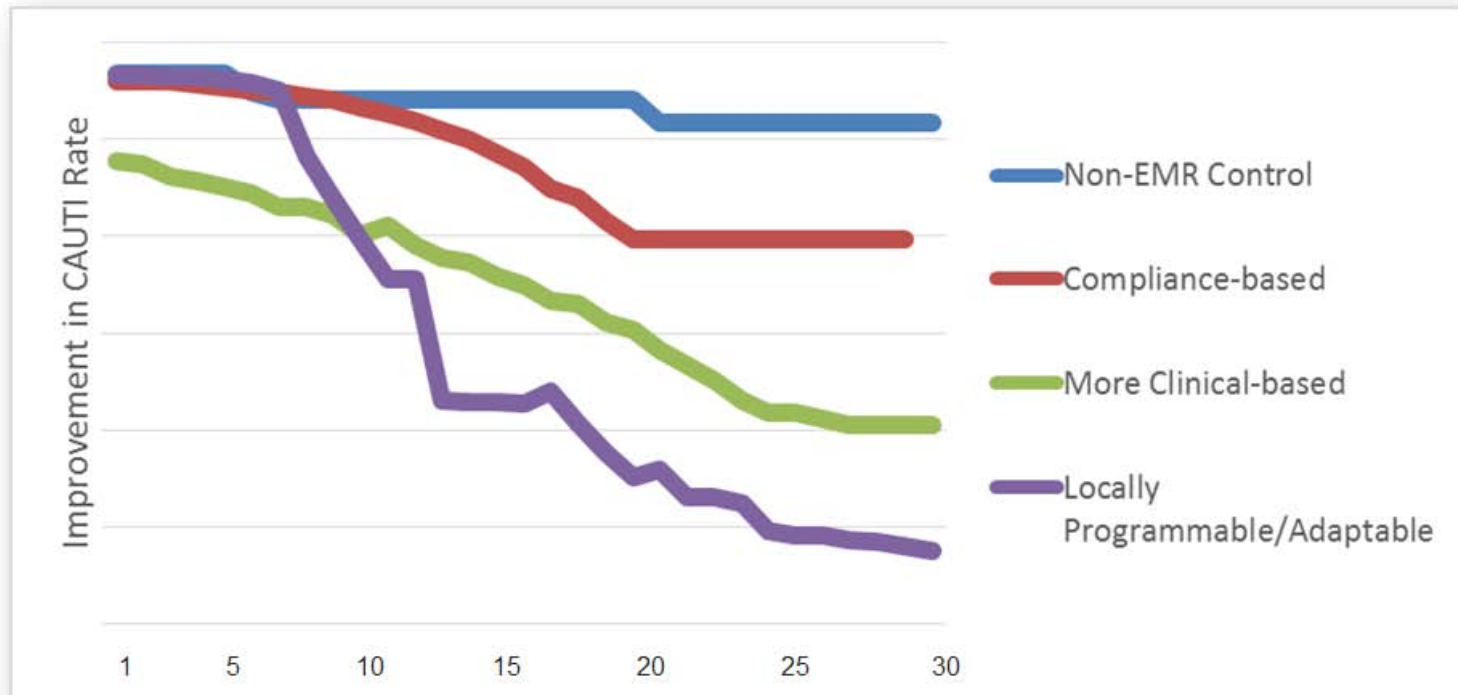


Summary of Comparatives:



- Locally programmable/adaptable EMR.
 - **87.3%** vs. baseline
 - **10.6** times Paper gains
 - **3.0** times Compliance-focused
 - **1.5** times More Clinical
 - **No plateau, continued improvement projected**

Conclusions?



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