QSE Analysis

By Beth Luman

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Robert Maina, Bernard Nkrumah

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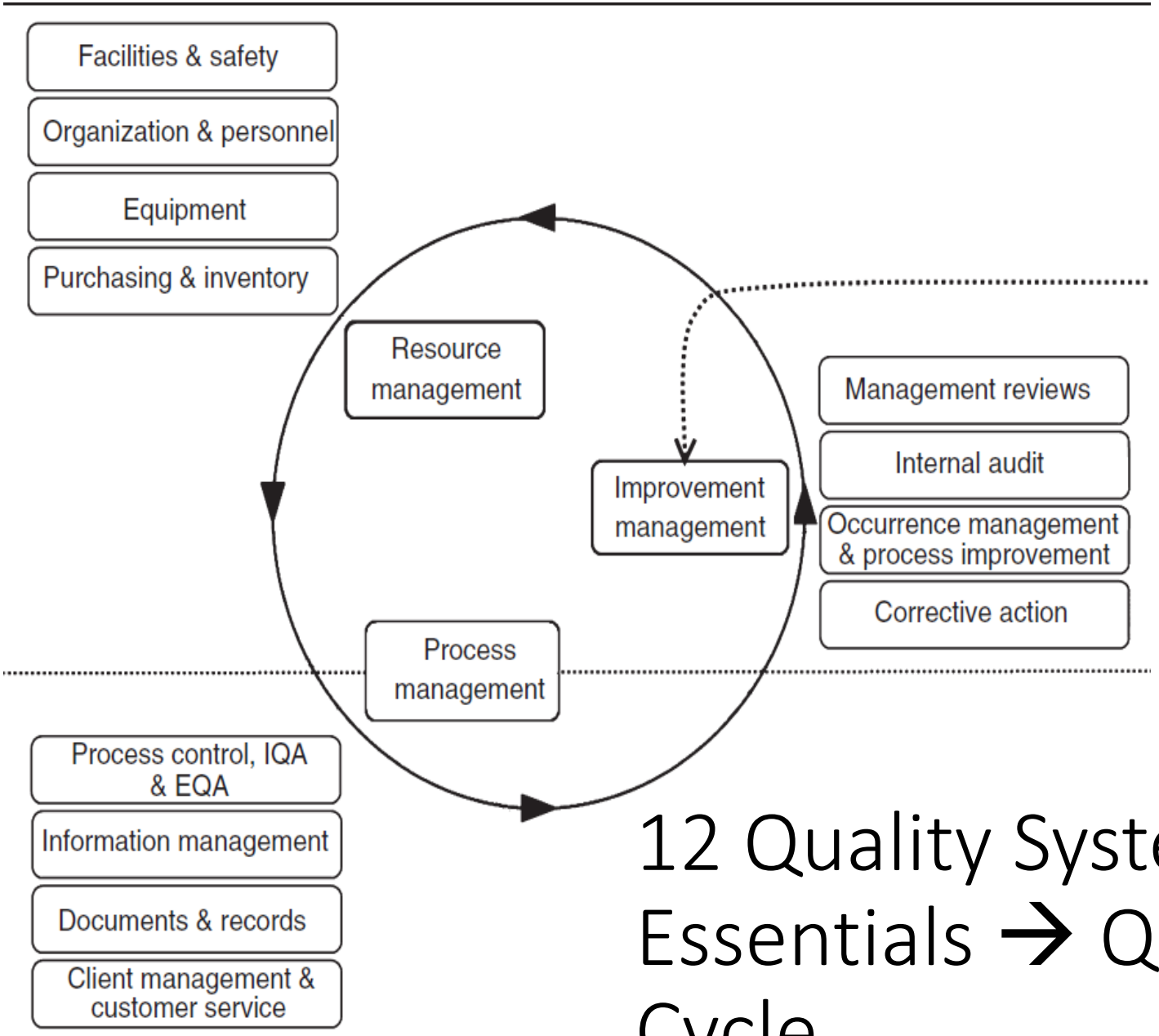
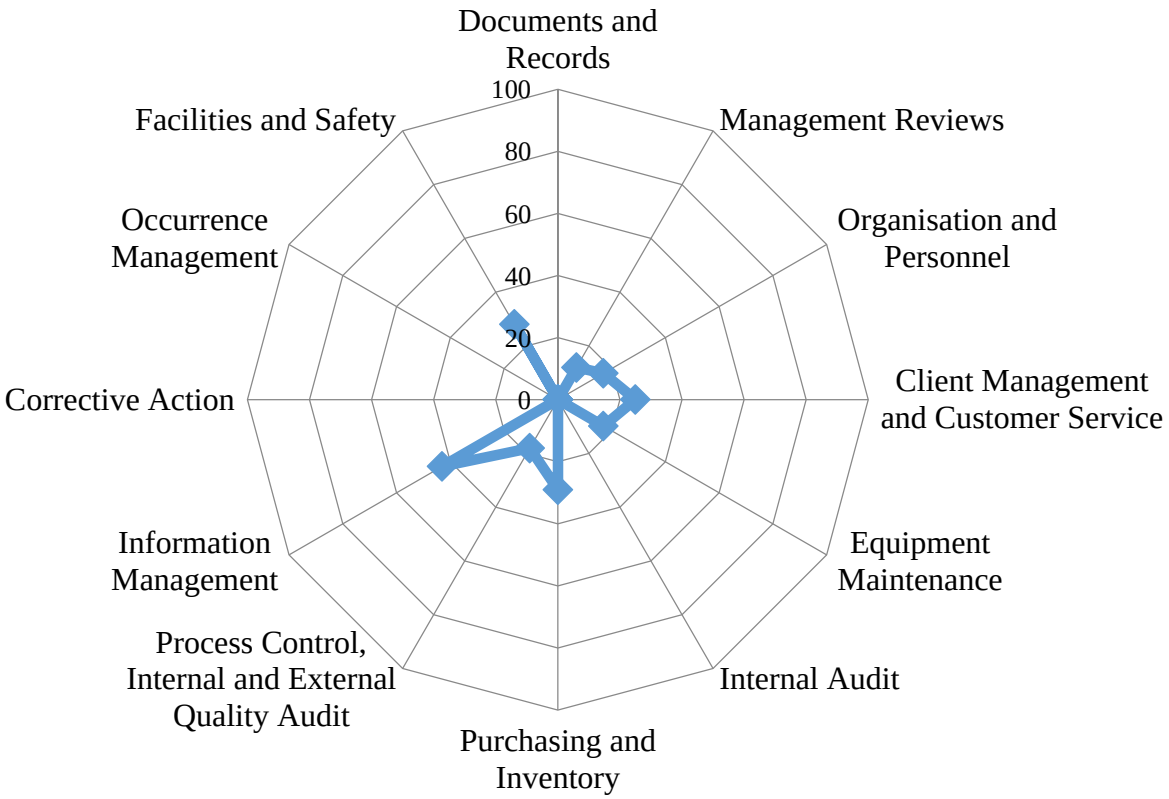
12 Quality System Essentials

- SLIPTA checklist

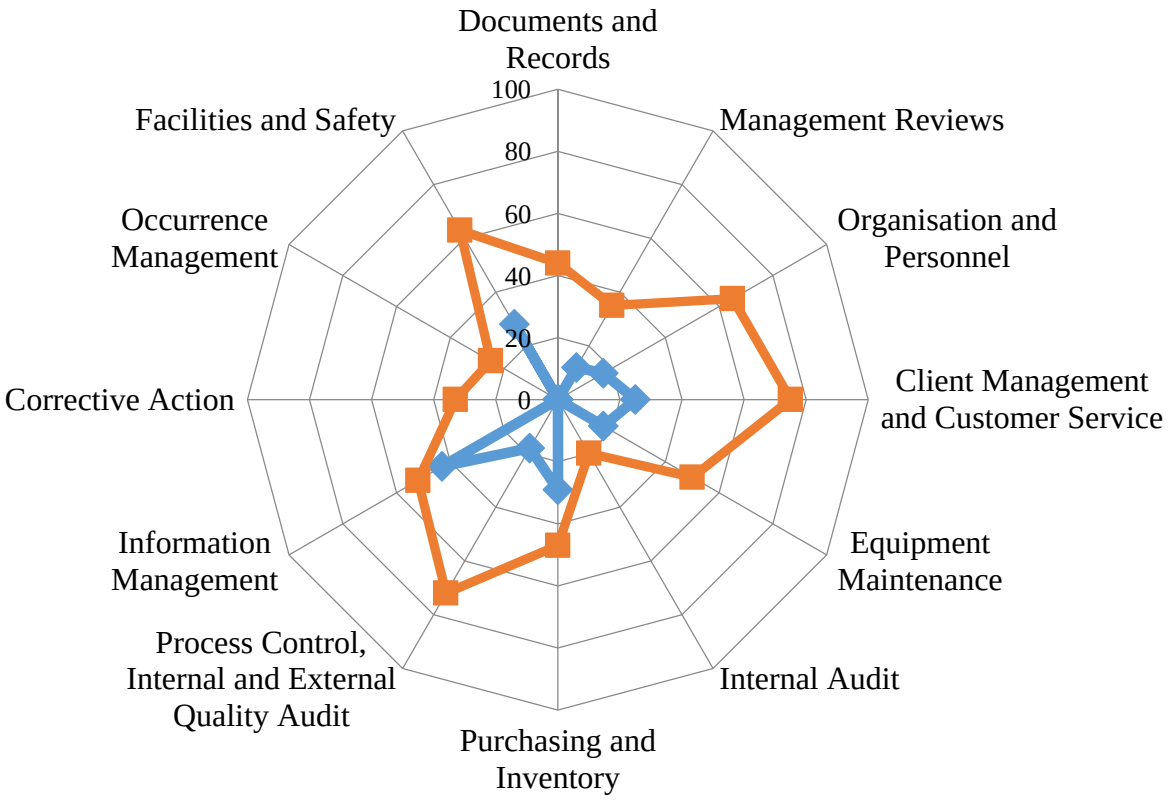


12 Quality System Essentials → Quality Cycle



12 Quality System Essentials → SLIPTA Score

Bernard Nkrumah et al.



12 Quality System Essentials → SLMTA Improvement

Bernard Nkrumah et al.

What are the areas that laboratories struggle with? What are the areas that they do well with?
Which areas do they improve through SLMTA?

- QSE's not systematically compiled on a global scale
- Literature Review
  - 126 labs in 12 countries
  - Meta-analysis
- Results
  - Lots of variability
    - For the 5 QSE's that at least 1 lab scored 0% at exit, some other lab scored 100%
  - Lots of similarities

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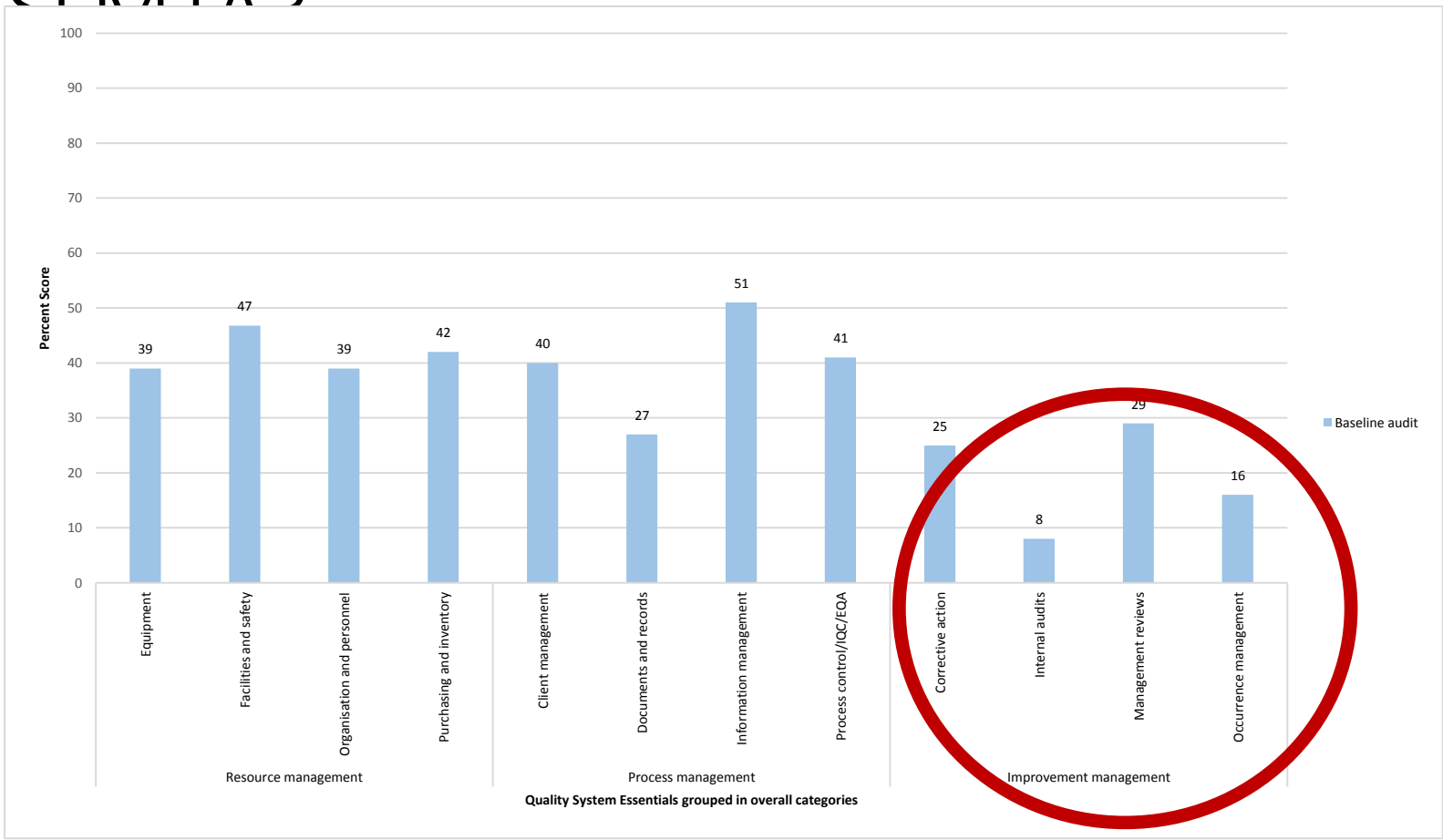

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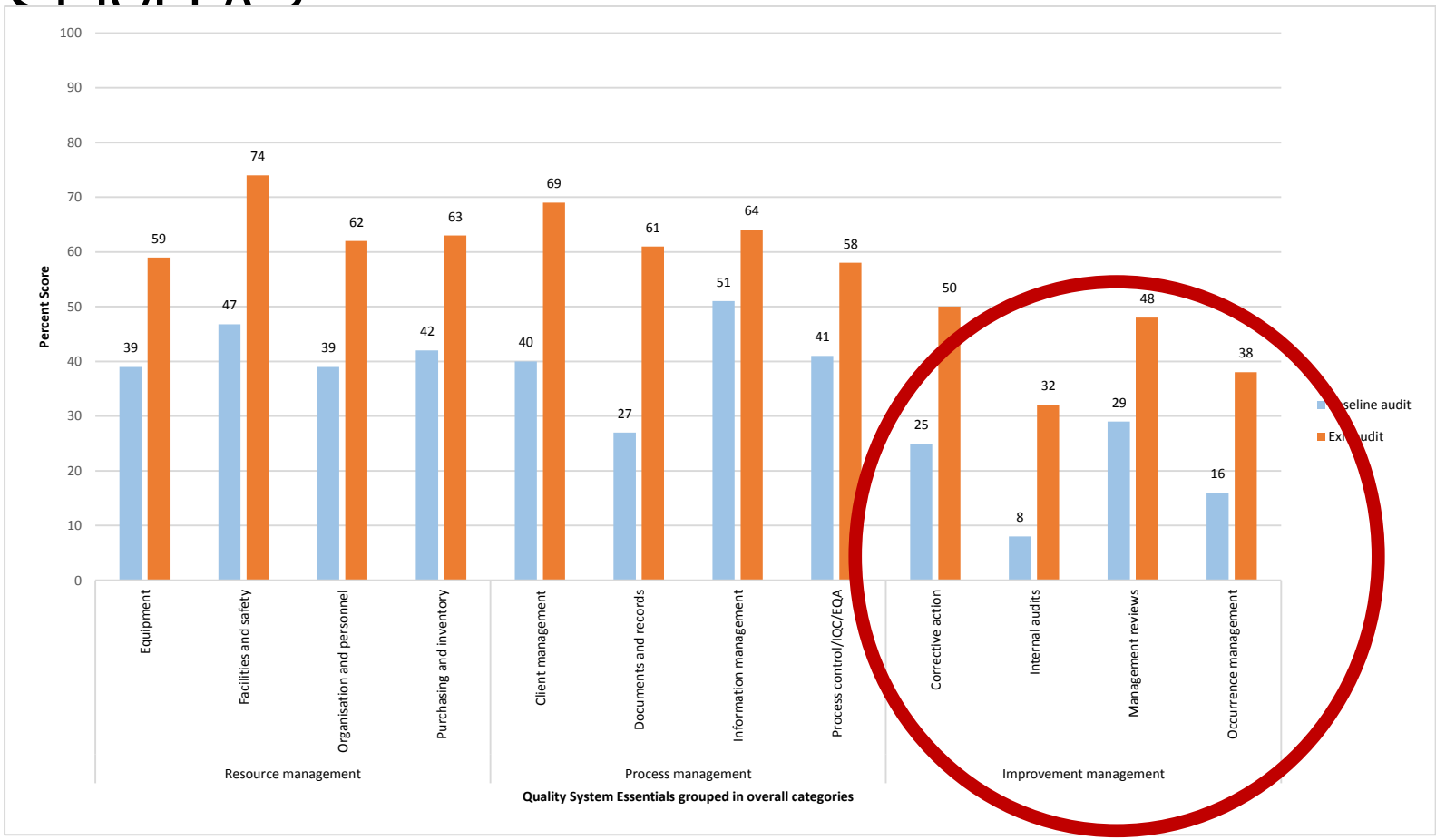


What are the **MOST CRITICAL** improvements for laboratories to make?

- What is your goal?
  - *Increase my score*
  - *To make other improvements easier*
  - *To give quick success and boost morale*
  - *To increase respectability -- patients and providers*
  - *Reduce errors*
  - *Reduce healthcare costs*
  - *Improve patient outcomes*

Option 1…

- 3 experts decide which projects should be done

Option 2…

- 100 labs that have implemented SLMTA
- Ask implementers which improvement projects they thought were the most productive

Option 3…

- 20 potential improvement projects
- Select 200 labs and randomly assign each project to 10 labs
- Analyze all of these potential goals
- Repeat for combinations of improvement projects

Option 4…

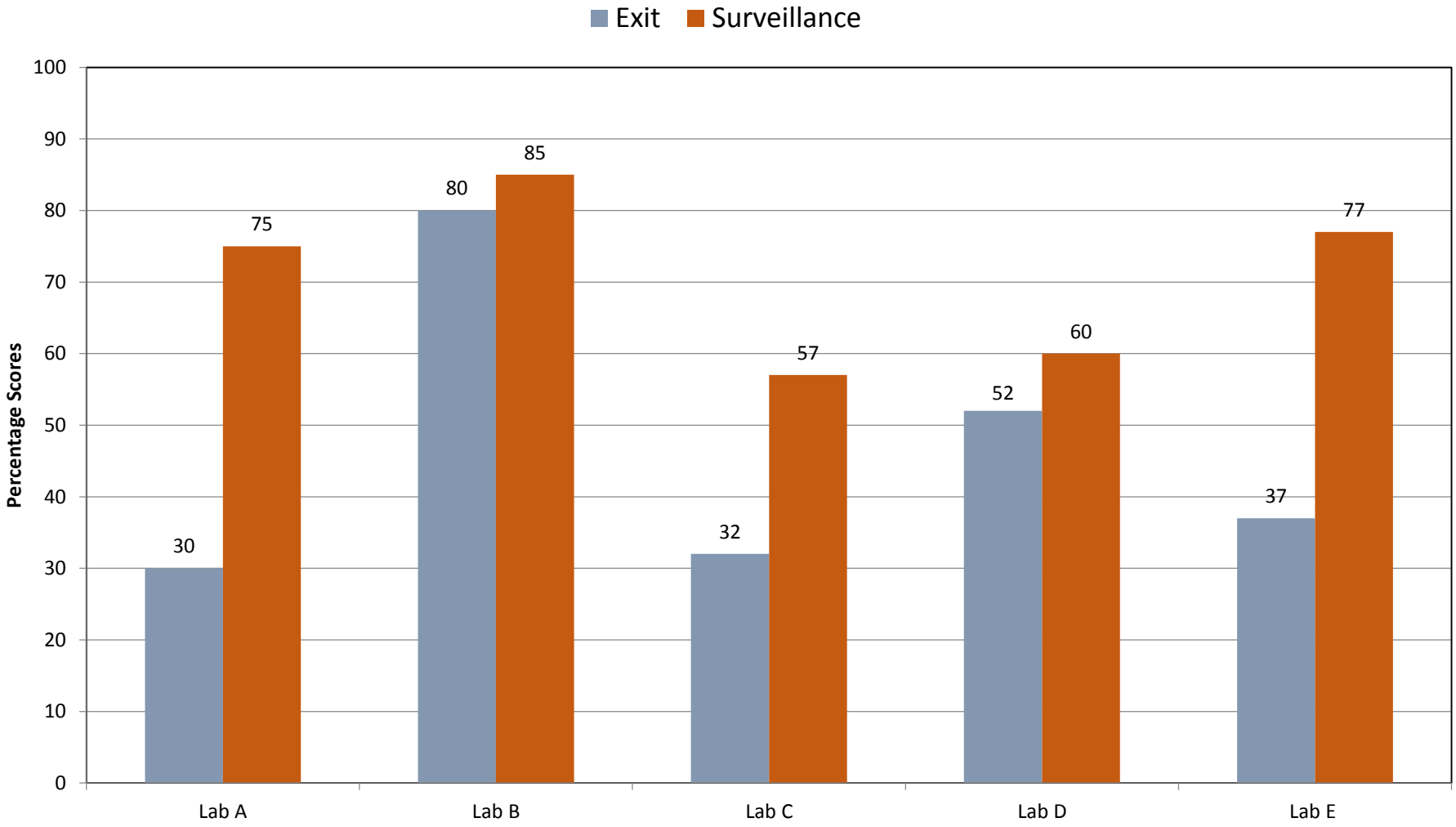
- Examine labs that improved more and those that improved less
- Which QSE's best explain the difference
    - *GOAL: Increase my score*

Option 4…

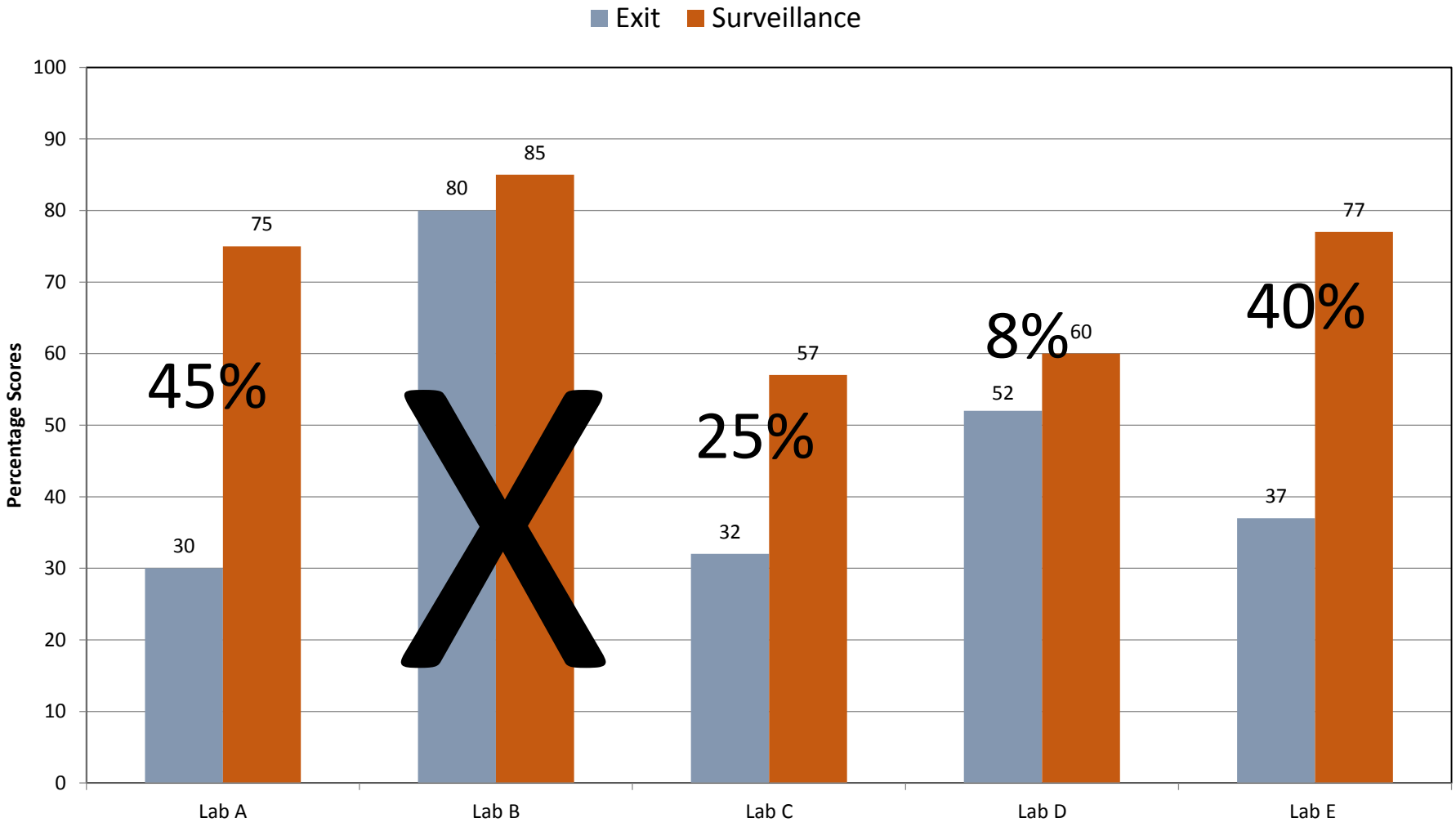
Which QSE's were associated with the biggest improvement in overall score?

- Sort labs by SLIPTA score improvement
- Compare most improved to least improved
  - What was the change in score for each QSE?
  - What was the *difference* in change of score for each QSE among the most improved vs. least improved?
- Does this explain all of the difference between most improved and least improved?
  - What was the change in scores *excluding* the critical QSE?
  - How might this QSE explain the differences?

Example 1: Maina et al



Example 1: Maina et al



Example 1: Maina et. al.

A+E	exit	surv	improvement	diff improvement between ae and cd	
Documents & Records	32	80	48	8	
Management Reviews	21	53	32	51	
Organization & Personnel	45	75	30	30	
Client Management & Customer Service	25	81	56	6	
Equipment	30	[illegible]	38	27	
Internal Audit	0	60	60	50	
Purchasing & Inventory	48	[illegible]	40	10	
Process Ctrl &IQC/EQA	36	77	41	8	
Information management	25	78	53	45	
Corrective Action	4	58	54	77	
Occurrence/Incidence Management & Process Improvement	13	54	42	48	
Facility & Safety	50	92	42	26	
	30	78	48		total without internal audit and corrective action
C+D					
Documents & Records	26	66	40		
Management Reviews	48	29	-19		
Organization & Personnel	55	55	0		
Client Management & Customer Service	19	69	50		
Equipment	45	57	12		
Internal Audit	0	10	10		
Purchasing & Inventory	47	[illegible]	30		
Process Ctrl &IQC/EQA	42	74	32		
Information management	40	47	8		
Corrective Action	35	13	-23		
Occurrence/Incidence Management & Process Improvement	14	8	-6		
Facility & Safety	69	85	16		
	42	57	15		total without internal audit and corrective action

Example 1: Maina et. al.

Progressing beyond SLMTA: Are internal audits and corrective action the key drivers of quality improvement?

Afr J Lab Med 2014.

Example 2: Lit Review

Example 2: Lit Review

- Meta-analysis results suggest that the corrective action QSE may be the most predictive of overall improvement
- Laboratories in the top quartile of overall improvement outperformed those in the bottom quartile by 62 percentage points for the corrective action QSE, compared to a median of 40 percentage points for the other QSEs.
- CLSI defines corrective action as an ‘action to eliminate the (root) cause of a detected nonconformity or other undesirable situation’.
- In the SLIPTA checklist, corrective action is assessed through four questions about how the laboratory deals with occurrence reports, nonconformities and discordant results.
- ISO confirms the importance of corrective action, saying that ‘the corrective and preventive actions system is the most critical element for an efficient quality system’.

Considerations

- This is a simple analysis
- Other possible analyses with multivariate models
- Observational vs. experimental
  - Confounding factors

Most importantly…

- This only examines one of the many goals – *increase my score*
- Ultimate goal – *improve patient outcomes*