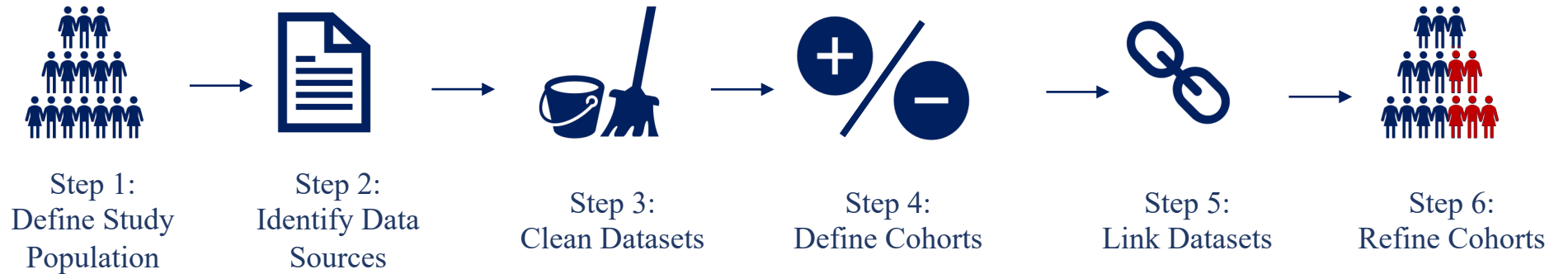


Background

- Significant training gaps exist for general surgery residents entering independent practice
- Truest barometer of surgical trainee competence is patient outcomes of those trainees after they graduate and become independent surgeons
- Relationship between trainee performance and early career surgeon outcomes is difficult to study, as these data are managed separately
- Analyzing evolving performance of trainees as they become early career surgeons requires data to be linked from multiple sources
- No standardized method to accomplish these data linkages have been described

Methods: Framework for Big Data Linkage



Example: Linking American Board of Surgery Records to Medicare Patient Claims

TRAINEES

Non-fellowship trained general surgeons within 5 years of graduation from residency

ABS records
AMA Masterfile
NPES

Supplement ABS records with additional resources to improve NPI data completeness

Non-fellowship trained general surgeons within 5 years of graduation from residency

Link provider and patient cohorts using NPI number

Filter to early career general surgeons

PATIENTS

Adult patients undergoing common general surgeries

Medicare patient claims

Merge each year of Medicare files

Medicare patients undergoing common general surgeries

Aims

1. Describe our approach to link multiple national datasets
2. Provide an example linking surgical trainee performance to early career surgeon outcomes

Results

CLEAN DATA
38% → 60%
improvement in ABS records with complete NPI data when supplemented with additional data resources

LINK DATA
96%
linkage rate between Medicare claims and ABS records

REFINE COHORTS
9.5%
procedures in linked data performed by early career general surgeons



Takeaways

RESEARCH

- Enable investigation of relationship between trainee performance and patient outcomes

POLICY

- Unlock opportunity to achieve the highest levels of evidence in GME policy reform

