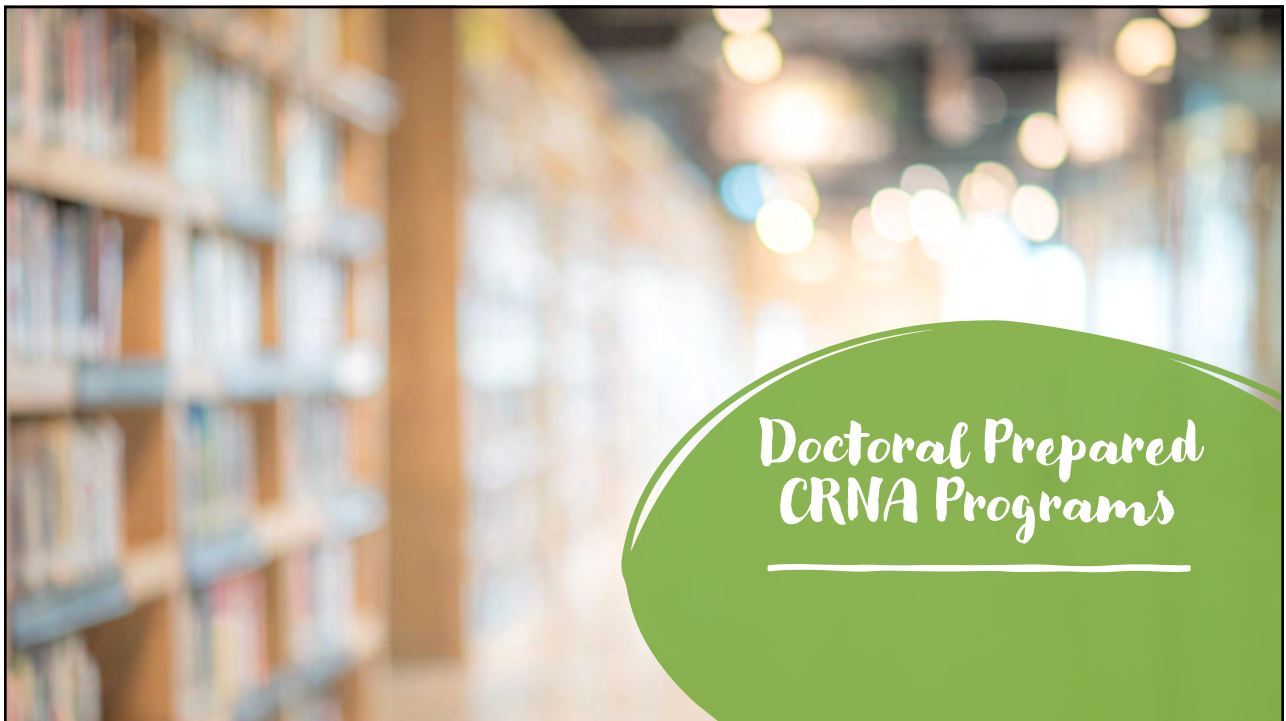


1



2

Type of Research Opportunities



QUALITY IMPROVEMENT PROJECT



CASE STUDIES

3

Objectives



New publication

- 

After completing the session, learners will be able to verbalize the common pitfalls in designing QI projects
- 

After completing the session, learners will be able to describe the two key elements of writing a case study
- 

After completing the session, learners will be able to demonstrate understanding of how to write a scientific manuscript.

4

Successful Stories of QI

Michigan Study Published in NEJM

- 100 Michigan ICUs
- Adherence to 5 basic evidence-based steps such as hand-washing
- Reduction in catheter-related bloodstream infections

5



**Does Your Project Have Something to Offer or
Addressing a Pressing Problem?**

6

Great QI Resource

SQUIRE 2.0

Notes to Authors

- The SQUIRE guidelines provide a framework for reporting new knowledge about how to improve healthcare.
- The SQUIRE guidelines are intended for reports that describe *system* level work to improve the quality, safety, and value of healthcare, and used methods to establish that observed outcomes were due to the *intervention(s)*.
- A range of approaches exists for improving healthcare. SQUIRE may be adapted for reporting any of these.
- Authors should consider every SQUIRE item, but it may be inappropriate or unnecessary to include every SQUIRE element in a particular manuscript.
- The SQUIRE Glossary contains definitions of many of the key words in SQUIRE.
- The *Explanation and Elaboration* document provides specific examples of well-written SQUIRE items, and an in-depth explanation of each item.
- Please cite SQUIRE when it is used to write a manuscript.

Title and Abstract

1. Title	Indicate that the manuscript concerns an <i>initiative</i> to improve healthcare (broadly defined to include the quality, safety, effectiveness, patient-centeredness, timeliness, cost, efficiency, and equity of healthcare)
2. Abstract	<p>a. Provide adequate information to aid in searching and indexing</p> <p>b. Summarize all key information from various sections of the text using the abstract format of the intended publication or a structured summary such as: background, local <i>problem</i>, methods, interventions, results, conclusions</p>

Introduction *Why did you start?*

7

Study Design: Quality Improvement

1. Measurable outcomes:

Primary outcome

Secondary outcome

2. Statistical Significance:

Sample size: power analysis

Statistical test

8

Examples

- Reduce unnecessary blood transfusion in spine surgery
 - Hypothesis: after implementing the protocol, blood transfusion rate is significantly reduced.
 - Primary outcome: Upon implementing the protocol, the number of units of blood products in the spine surgery is reduced compared to the same type of spine surgery.
 - Secondary outcome: shorter hospital stay, reduced infection rate

9

Pitfalls

- Example 1: Measurable outcomes:
 - QI: Teach anesthesia providers a regional block
 - Opioid reduction in this type of surgery
- Example 2: Measurable outcomes:
 - QI: Teach noise reduction in the OR
 - Pre and post survey test



10

Statistics


Variables:

- Reduction of blood transfusion in spine surgery:
- Multi-variables: different type of patients, surgeries, surgeons.
- Multi-variable analysis

Inclusion and exclusion criteria:

- Spine surgery: does it apply to all spine surgeries?

11

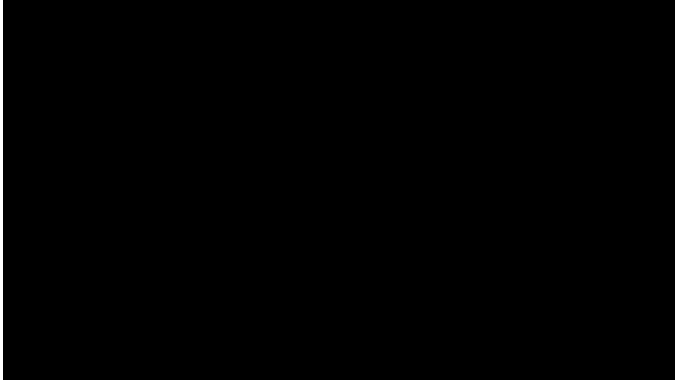


Summary

Manuscript Section	Elements	Common Pitfalls
Introduction	<ul style="list-style-type: none"> • Importance and relevance of QI problem beyond authors' site • Gap between what we currently know and what we need to know to achieve desired QI outcomes • Project aims 	<ul style="list-style-type: none"> • Too long • <u>Too much on review of importance and too little on evidence gap.</u> • <u>Specific project aim not clearly articulated</u>
Methods	<ul style="list-style-type: none"> • Context of the project • Theory connecting QI problem, context, and proposed intervention strategy • Multiple, iterative, intervention steps • Use of a family of measures, ideally including outcome, process (fidelity), and balancing (unintended consequences) measures 	<ul style="list-style-type: none"> • Superficial description of, or general lack of attention to, context • <u>No theory supporting intervention reported.</u> • <u>Many intervention steps reduced to single intervention</u> • <u>Single measure used to track project impact</u>
Results	<ul style="list-style-type: none"> • Data presented over time, with use of run or control charts • May include contemporaneous control group or unit to account for secular trends and co-interventions 	<ul style="list-style-type: none"> • <u>Data aggregated as simple before-after design</u>
Discussion	<ul style="list-style-type: none"> • One short paragraph summarizing most important findings • Place study in context of others' work • Reflect on implications of results • Lessons learned, especially the influence of context on results • Discussion of how limitations may have affected findings • Future steps, in brief 	<ul style="list-style-type: none"> • <u>Discussion limited to implications for local institution or setting</u> • <u>Results repeated without analysis or deeper reflection</u> • Reflections omitted • Lessons and context effects omitted • Listing of limitations, as if all of equal importance, without thoughtful consideration of potential effects
Conclusion	<ul style="list-style-type: none"> • Brief summary of key study findings 	<ul style="list-style-type: none"> • <u>Suggest "further research is needed"</u> • <u>Overgeneralize from study site to all settings</u>

12

Do Your Homework: Planning Is the Key



Study Design: draw a clear connection between reported results and the QI activity being described

13

Tips for Getting Published

Adhere

- Adhere to SQUIRE guidelines as appropriate.

Investigate

- Investigate journals suitable to your project in advance.

Find

- Find a mentor and collaborate with colleagues in other departments.

Document

- Document your processes and record data carefully.

Keep

- Keep a log or running journal so you can build your paper as you go along

Have

- Have an experienced writer look at multiple drafts of the manuscript

14

Journals To Consider For Submission

- Implementation Science
- Nursing Research
- Journal of Opioid Management
- BMJ Quality
- International Student Journal of Nurse Anesthesia

15

Case Reports: Describe An **Unusual** or **Novel** Occurrence

- Unusual observations
- Adverse response to therapies
- Illustration of a new theory
- Question regarding a current theory
- Personal impact.

16

Case Reports

Offer unique value to the body of medical knowledge

- Case reports do not include controls
- The format lacks statistical sampling
- Unblinded
- Cautious approach to interpretation of finding

17

Structure of A Case Report

Abstract	Introduction	Case	Discussion	Conclusion
		<ul style="list-style-type: none"> • Patient description • Case history • Physical examination results • Results of pathological tests and other investigations • Treatment plan • Expected outcome of the treatment plan • Actual outcome. 		

18



Pitfalls: Unique or Novel

19

Journals

American Journal of Case Reports

Case Reports: Open Access

BMJ Case Reports

Case Reports in Anesthesiology

20

Writing Your First Paper: Outline

- Start with an outline
- Set your writing time
- Write Materials and Methods first
- Results
- Introduction: establish a research territory and find a niche
- Discussion: explaining the meaning of the findings and why they are important

Outline — Level 2

Introduction

1. Why is your research important?
2. What is known about the topic?
3. What are your hypotheses?
4. What are your objectives?

Materials and Methods

1. What materials did you use?
2. Who were the subjects of your study?
3. What was the design of your research?
4. What procedure did you follow?

Results

1. What are your most significant results?
2. What are your supporting results?

Discussion and Conclusions

1. What are the studies major findings?
2. What is the significance/implication of the results?

21

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22



23