

OUTCOMES OF A SAFE SURGERY INTERVENTION ON CESAREAN SECTION COMPLICATIONS: A QUASI-EXPERIMENTAL STUDY



Lauren Kelly, Program in Global Surgery and Social Change, Harvard Medical School

Dr. Augustino Hellar, Jhpiego

SAFE SURGERY 2020 PARTNERS

Dalberg



PROGRAM IN GLOBAL SURGERY
AND SOCIAL CHANGE
Harvard Medical School



innovating to save lives



GE Foundation

PRESENTATION OUTLINE

- Background
- Safe Surgery 2020 Tanzania
- Methods
- Results
- Conclusion
- Acknowledgements

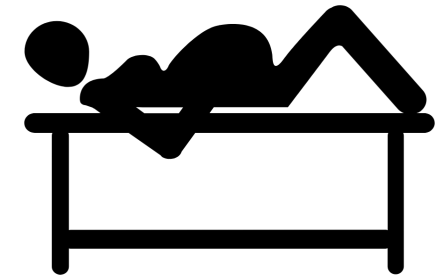
OVERVIEW OF THE PROBLEM



Maternal **mortality rates** after C-sections are **50 times higher** in Africa compared to high-income countries¹



1 in 6 women in Africa develop a **Surgical Site infection** after a C-section²

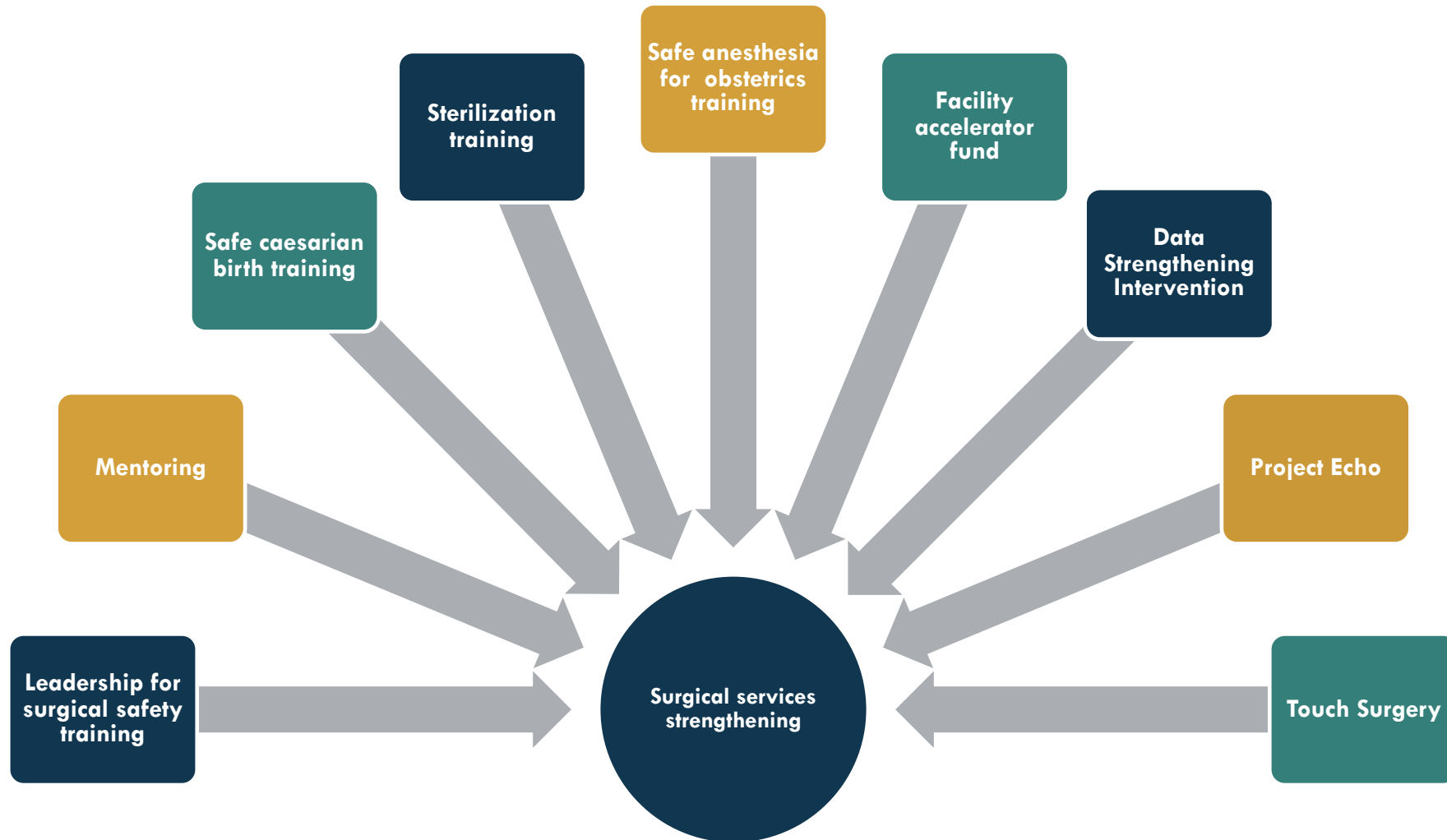


1 in 10 African women **die** as a result of maternal sepsis following C-sections³

RATIONALE

- Safe Surgery 2020 approach:
 - Partnership with governments and facilities
 - Focus on local surgical priorities
 - Suite of interventions: staff, space, stuff, systems
 - Build local capacity and empower surgical teams
 - Evaluation to promote learning about how best to strengthen surgical services in LMICs
- Research Aim:
 - To assess the impact of Safe Surgery 2020 interventions on Cesarean section complications

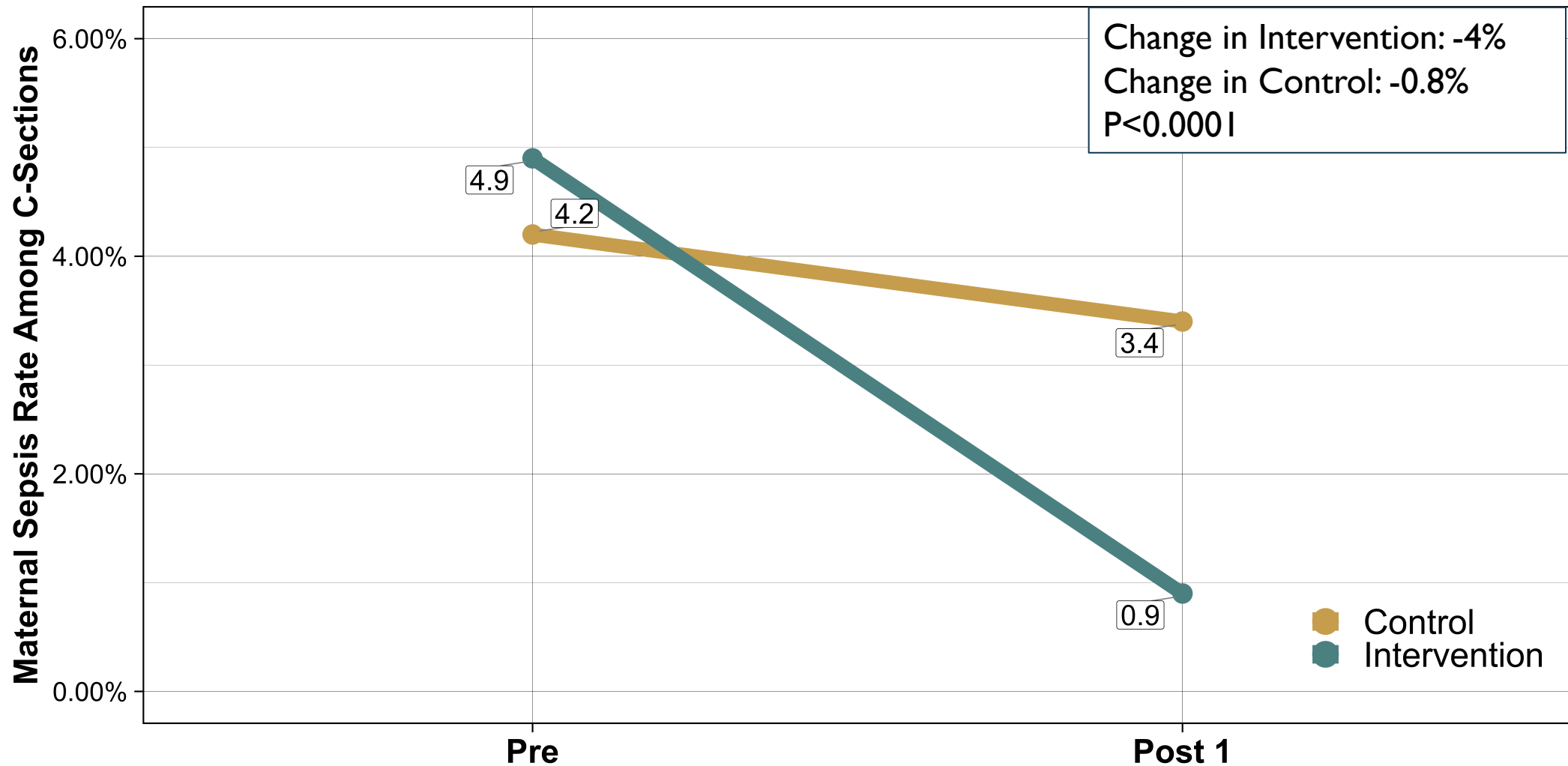
SAFE SURGERY 2020 INTERVENTIONS



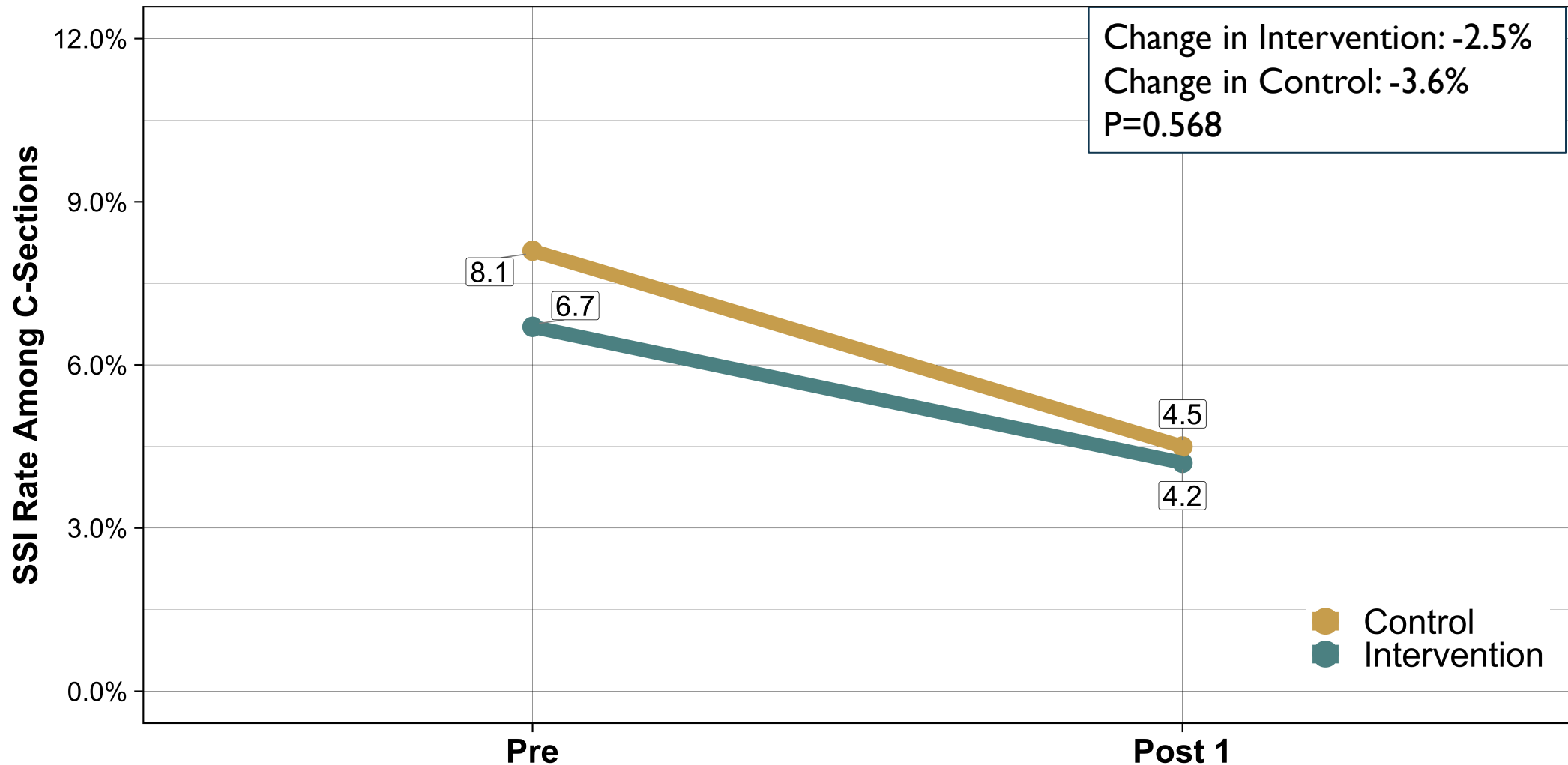
SAFE SURGERY 2020 METHODS

- **Study Design:** Longitudinal quasi-experimental study in 10 intervention and 10 control facilities
- **Setting:** Lake Zone of Tanzania
- **Methods:** Data was collected prospectively for 3 months pre-intervention (2018) and 3 months post-intervention (2019) through daily surveillance by trained medical data collectors. A total of 2,243 patients pre-intervention, and 2,345 patients post-intervention undergoing C-sections were enrolled in the study.
- **Outcomes:** Rates of maternal sepsis, SSIs and maternal mortality in C-section patients
- **Analysis:** Difference-in-difference analysis used to evaluate changes in rates between intervention and control hospitals

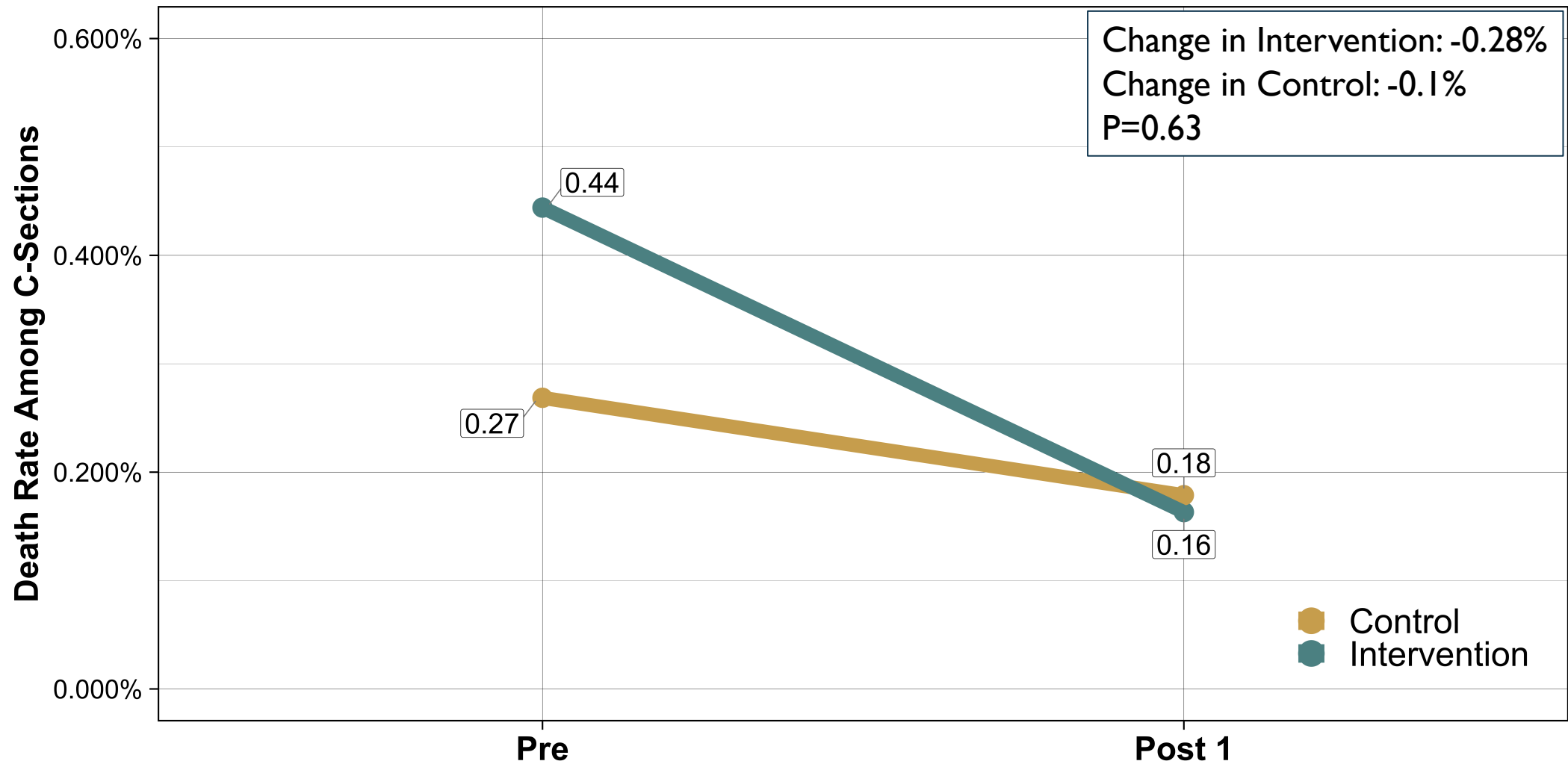
RESULTS – MATERNAL SEPSIS



RESULTS – SURGICAL SITE INFECTION



RESULTS – DEATH RATE



CONCLUSION

- Safe Surgery 2020 Tanzania implementation was associated with improvements in surgical outcomes
- Among all women who had a C-section performed in an intervention facility, maternal sepsis rates decreased by 4% as a result of Safe Surgery 2020 interventions
- The intervention has potential to improve surgical quality and safety of C-sections for mothers in Tanzania

ACKNOWLEDGEMENTS

- GE Foundation
- Dr. John Meara, Dr. Sarah Maongezi, Dr. Ntuli Kapolgwe, Principal Investigators
- Regional Medical Officers for Mara, Kagera, Geita, Shinyanga and Simuyu Regions
- Medical Data Collectors
- Safe Surgery 2020 partners: Assist International, Dalberg Advisors, Jhpiego

AUTHORS

- Lauren Kelly*, Shehnaz Alidina, David Barash, Augustino Hellar, Erastus Maina, John G. Meara, Rahma Mushi, Dinnah Nyirenda, Cheri Reynolds, Steven Staffa, Taylor Wurdeman, Ntuli Kapologwe**, Sarah Maongezi**
 - *First Author
 - **Joint senior authors

REFERENCES

¹Bishop, D., Dyer, R.A., Maswime, S., Rodseth, R. N., van Dyk, D., Kluyts, H. L., ... Zubia, N. Z. (2019). Maternal and neonatal outcomes after caesarean delivery in the African Surgical Outcomes Study: a 7-day prospective observational cohort study. *The Lancet Global Health*, 7(4), e513–e522. [https://doi.org/10.1016/S2214-109X\(19\)30036-1](https://doi.org/10.1016/S2214-109X(19)30036-1)

²Sway, A., Nthumba, P., Solomkin, J., Tarchini, G., Gibbs, R., Ren, Y., & Wanyoro, A. (2019). <p>Burden of surgical site infection following cesarean section in sub-Saharan Africa: a narrative review</p>. *International Journal of Women's Health*, Volume 11, 309–318. <https://doi.org/10.2147/ijwh.s182362>

³Say, L., Chou, D., Gemmill, A., Tunçalp, Ö., Moller, A. B., Daniels, J., ... Alkema, L. (2014). Global causes of maternal death: A WHO systematic analysis. *The Lancet Global Health*, 2(6), 323–333. [https://doi.org/10.1016/S2214-109X\(14\)70227-X](https://doi.org/10.1016/S2214-109X(14)70227-X)