

Analyzing the Financial Impact of a Remote Fetal Monitoring Solution

Introduction for High-Risk Pregnancies in a US Obstetrics Clinic



Introduction

Self-applied remote fetal monitoring allows mothers with risky and complicated pregnancies to check maternal and fetal well-being at home while an obstetric health care professional remotely monitors the results.

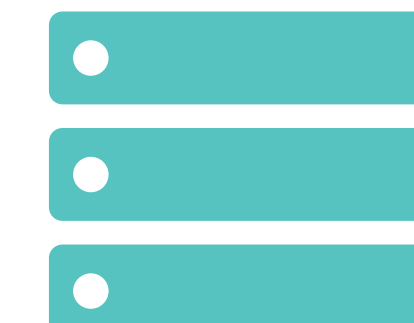
Objectives

Estimate a potential increment in an American hospital revenues and savings that would result from implementing remote fetal monitoring.

Methods

A cohort-based model analyzed the change in hospital obstetric department revenues by comparing the standard of care with allocating a hypothetical group of 300 mothers to the new hybrid model of care in which part of the cohort is monitored remotely and enrolment of lower (at-risk) risk mothers becomes possible.

 Clinical inputs on the proportion of patient allocation were informed by an international survey of obstetric specialists¹.

 Cost inputs were sourced from US administrative databases² and literature sources^{3,4}.

 Healthcare resource use estimates were extracted from literature^{5,6,7} and clinical guidelines⁸ and assumptions were validated with clinical experts.

References
1 KJT Group report 'FPP Home Monitoring Concept Research', 2019 (data on file)
2 Definitive Healthcare LLC. HospitalView/AllPayor Claims database. Cardiotocography procedure (fetal nonstress test claim for 59025)
3 Mewes et al. 2017
4 Chua et al. 2021
5 Urquhart et al. 2017
6 Zizzo et al. 2021
7 PA_Consulting_Group. Business case for nationwide deployment of telemedicine home monitoring of pregnant women with complications. 2017
8 ACOG guidance: Indications for Outpatient Antenatal Fetal Surveillance 2021

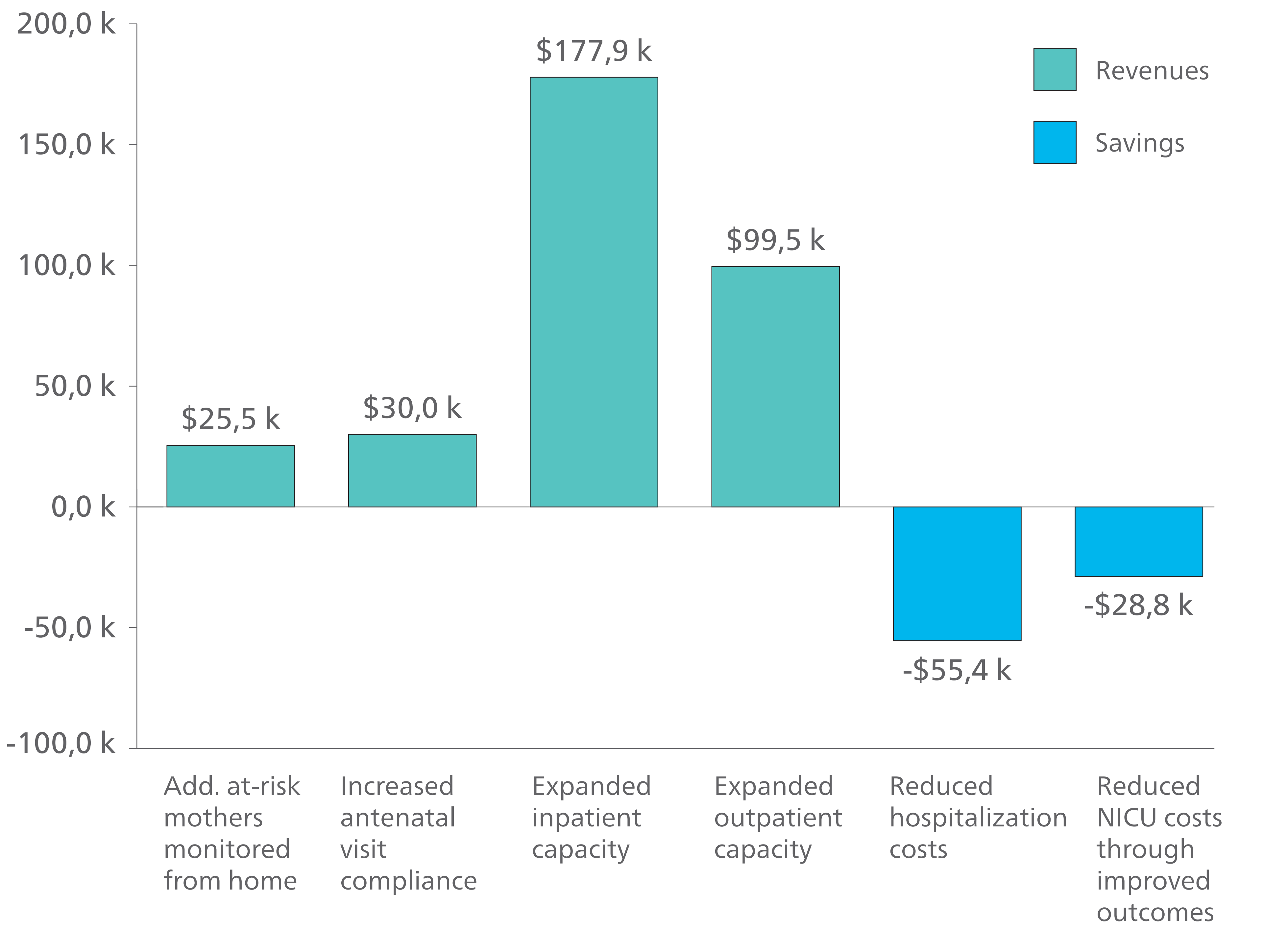
Results

The model of care that involves the remote monitoring modality resulted in an estimated increase of hospital revenues by \$332,903 and savings by \$84,225.

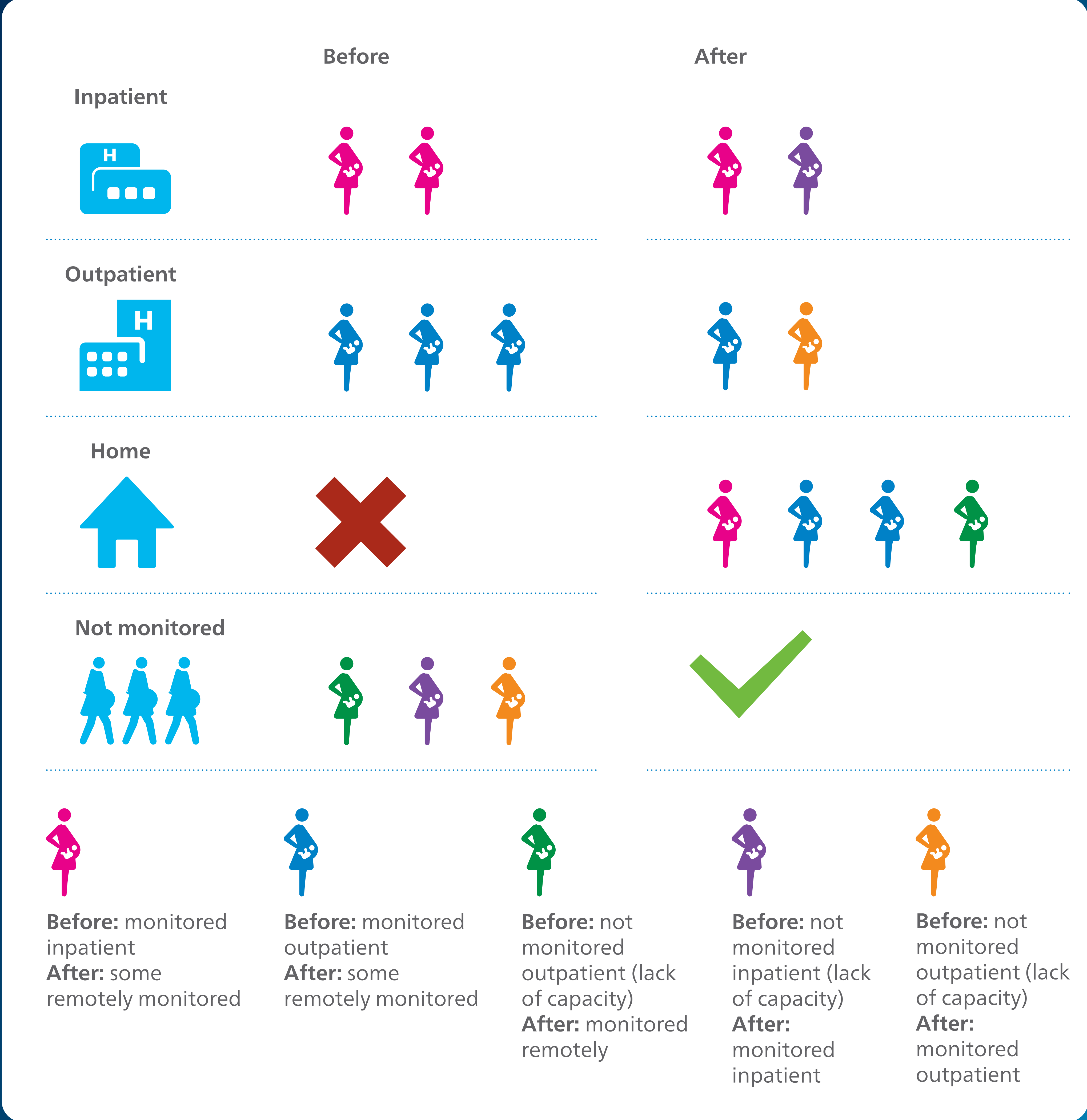
Remote fetal monitoring reduced nurse workload allowing for high-risk patients from the waiting list to get treated in inpatient and outpatient settings, generating \$177,940 and \$99,470 revenues, correspondingly.

In addition, a \$25,480 increase in outpatient revenues was driven by lower risk mothers eligible for remote fetal monitoring. The improved visit compliance among remotely monitored mothers contributed to an increase of \$30,013 in hospital revenues.

Remote monitoring was associated with \$55,441 savings resulting from decreased maternal hospitalization rates and \$28,784 savings caused by fewer admissions to neonatal intensive care units.



NICU = neonatal intensive care unit



Conclusion

Compared to conventional approaches of pregnancy monitoring, remote fetal monitoring may be associated with the ability to:

- **Monitor up to 60% more patients** using the same hospital resources through optimization of the flow of high-risk patients and enrollment of low-risk patients
- **Increase hospital revenues by up 30%** through expanded patient capacity and improved antenatal visit compliance
- **Save costs** through avoiding hospital admissions to obstetric ward and neonatal intensive care unit