SIMULATION TRAINING AND PATIENT OUTCOMES

Rural OB & neonatal simulation outreach (illustrative demonstration)

Prepared for	Demonstration hospital network	**Prepared by**	SimTrack · Power of One Consulting
Projection	3 sites · horizon 2027-12	**Training data**	3 sites · 2023–2026, by year
Date	November 11, 2026		

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Projected impact

What the training is expected to do — rural OB & neonatal outreach (illustrative baselines). Using each site's baseline and published effects, 1 of 4 outcomes would show a detectable change within five years with all sites pooled (first: Effective ventilation within 60 seconds (infants needing PPV), about 24 months). Rare clinical outcomes at small sites take longer; process measures carry the early evidence.

Demonstration data. Numbers in this report come from synthetic or illustrative inputs, not from a real hospital.

Demonstration report. All training and outcome figures are made up for illustration.

Projected Impact

PPH requiring transfusion — **not detectable within 5 years**

Expected change by 2027-12, all sites: −1.0 transfusions for PPH. Bar = chance of detecting it after 24 months with all sites pooled (7%).

Composite maternal morbidity (OB-STaT definition) — **not detectable within 5 years**

Expected change by 2027-12, all sites: −5.0 deliveries with composite morbidity. Bar = chance of detecting it after 24 months with all sites pooled (17%).

Effective ventilation within 60 seconds (infants needing PPV) — **detectable in 24 months**

Expected change by 2027-12, all sites: +5.7 infants ventilated within 60 s. Bar = chance of detecting it after 24 months with all sites pooled (84%).

Brachial plexus injury after shoulder dystocia — **not detectable within 5 years**

Expected change by 2027-12, all sites: −0.5 brachial plexus injuries. Bar = chance of detecting it after 24 months with all sites pooled (0%).

Training Breakdown

Rural Hospital A (illustrative) — **41 activities · 388 learner visits**

First activity 2023-01-18. 2023: 6 · 2024: 9 · 2025: 14 · 2026: 12.

Rural Hospital B (illustrative) — **25 activities · 214 learner visits**



First activity 2023-04-06. 2023: 3 · 2024: 5 · 2025: 8 · 2026: 9.

Rural Hospital C (illustrative) — **12 activities · 97 learner visits**



First activity 2024-03-14. 2023: 0 · 2024: 2 · 2025: 4 · 2026: 6.

Executive Summary

This report brings together the hospital's training records, its own outcome counts where supplied, public CMS quality data and published research. It describes what training was delivered, where each hospital stands today, and what the training can reasonably be expected to change over time. Every figure comes from the data and sources listed in the Data and Methods section; the projections are forecasts, and each one shows its uncertainty.

Key findings

- 78 simulation and training activities and 699 learner visits were delivered across 3 sites.
- PPH requiring transfusion: by 3 years, about **3.6 fewer transfusions for PPH** (80% range 0.3 to 7.1); an improvement is likely.
- Composite maternal morbidity (OB-STaT definition): by 3 years, about **18.7 fewer deliveries with composite morbidity** (80% range 8.3 to 28.4); an improvement is very likely.
- Effective ventilation within 60 seconds (infants needing PPV): by 3 years, about **21.1 more infants ventilated within 60 s** (80% range 17.1 to 25.1); an improvement is very likely.
- Brachial plexus injury after shoulder dystocia: by 3 years, about **2.3 fewer brachial plexus injuries** (80% range 1.0 to 4.1); an improvement is very likely.
- Added together, the expected value of events avoided by 3 years is about **$167,320**.

Recommended next steps

- **Use local costs.** Swap the published cost averages for the hospital's own figures.
- **Track early signals.** Rare outcomes will take years to prove; report process measures and simulation performance quarterly, and compare outcomes against the expected range.
- **Lock the projection.** Record this projection before results come in so later results are judged against it fairly.

How to read this report

Term	What it means
Baseline	Each site's own historical rate, taken from the counts the hospital supplied. It is what we would expect to keep seeing if nothing changed.
Expected with training	The baseline adjusted by the effect found in published studies, scaled down for how well that evidence fits this setting and how fully the training is delivered.
80% range	Eight times out of ten the true value should fall inside it. Wide ranges mean small numbers or uncertain evidence, not an error.
Chance of benefit	How likely it is that the outcome improves at all, given the evidence and the baseline.
Detectable	How likely it is that the improvement would already show up as statistically significant in the hospital's own data. Rare events can improve long before they can be proven.
Evidence grade	A = randomised trials; B = multi-site observational studies; C = single-site or uncontrolled studies; D = indirect or ecological evidence.

Projected impact at a glance

Horizon 2027-12; detection means 80% assurance at one-sided α 0.05.

Outcome	Baseline (pooled)	Expected after training	Change by 2027-12 (all sites)	Detectable at one site	Detectable pooled	Sites needed (24 mo)
PPH requiring transfusion per 1,000 deliveries	15.1	13.9	−1.0 transfusions for PPH	not within 5 years	not within 5 years	more than 80
Composite maternal morbidity (OB-STaT definition) per 1,000 deliveries	62.8	56.2	−5.0 deliveries with composite morbidity	not within 5 years	not within 5 years	more than 80
Effective ventilation within 60 seconds (infants needing PPV) *(process measure)* per 100 infants needing positive-pressure ventilation	54.1	80.2	+5.7 infants ventilated within 60 s	54 months	24 months	3 sites
Brachial plexus injury after shoulder dystocia per 100 shoulder dystocia births	6.3	3.5	−0.5 brachial plexus injuries	not within 5 years	not within 5 years	more than 80

Impact timeline

Expected change in events, all sites together, counted from each site's own training start, and the chance a change of that size would already show as statistically significant.

Outcome	3 months	6 months	1 year	2 years	3 years
PPH requiring transfusion transfusions for PPH	**−0.2** 0% detectable	**−0.5** 4% detectable	**−1.1** 3% detectable	**−2.4** 7% detectable	**−3.6** 7% detectable
Composite maternal morbidity (OB-STaT definition) deliveries with composite morbidity	**−1.1** 4% detectable	**−2.7** 9% detectable	**−5.9** 11% detectable	**−12.3** 17% detectable	**−18.7** 23% detectable
Effective ventilation within 60 seconds (infants needing PPV) infants ventilated within 60 s	**+1.2** 24% detectable	**+3.0** 44% detectable	**+6.6** 62% detectable	**+13.8** 84% detectable	**+21.1** 90% detectable
Brachial plexus injury after shoulder dystocia brachial plexus injuries	**−0.1** 0% detectable	**−0.3** 0% detectable	**−0.7** 0% detectable	**−1.5** 0% detectable	**−2.3** 0% detectable

Medians shown; full ranges are on each outcome's page. A low detection chance means the change is expected but too small to prove yet at these volumes, not that it isn't happening.

What this means

The timeline reads left to right from each site's training start. Early columns (3 months, 6 months) are small because the effect phases in as staff are trained and practice changes take hold; the later columns show the full effect accumulating.

None of the projected outcomes is expected to be statistically provable within the first year at these volumes. Early reporting should therefore focus on training delivery, process measures and whether results are tracking inside the expected range.

Value of events avoided

Events avoided multiplied by the value of one event, with both uncertainties carried through (80% ranges). All sites together, counted from each site's own training start.

Outcome	Value per event	3 months	6 months	1 year	2 years	3 years
PPH requiring transfusion	$5,782 $3,924–$10K	**$1,357** $110 to $2,853	**$3,373** $274 to $7,050	**$7,403** $602 to $15K	**$15K** $1,259 to $32K	**$24K** $1,916 to $49K
Composite maternal morbidity (OB-STaT definition)	$5,782 $3,924–$16K	**$8,322** $3,546 to $16K	**$21K** $8,822 to $39K	**$45K** $19K to $85K	**$95K** $40K to $178K	**$144K** $62K to $271K

Cost assumptions

Outcome	Value per event (range)	What it measures	Source
PPH requiring transfusion Published default	$5,782 ($3,924–$10K) 2022 dollars	hospital cost, incremental (approximation)	Approximated by the incremental cost of a delivery with severe maternal morbidity at rural hospitals (transfusion is the most common SMM indicator). High = added cost per vaginal SMM case including physician fees (Phibbs et al.) https://pmc.ncbi.nlm.nih.gov/articles/PMC12885625/
Composite maternal morbidity (OB-STaT definition) Published default	$5,782 ($3,924–$16K) 2022 dollars	hospital cost, incremental	Hospital costs of severe maternal morbidity hospitalizations in the United States, 2014–2019 (National Inpatient Sample, 2022 USD). Rural hospitals: $11,119 with any SMM vs $5,337 without (difference $5,782). Low = vaginal-delivery difference ($8,292 − $4,368). High = added cost per cesarean SMM case including physician fees (Phibbs et al.) https://pmc.ncbi.nlm.nih.gov/articles/PMC12885625/

Published defaults are national or rural averages; the hospital's own finance figures or its price-transparency file replace them when supplied. Transport figures exclude mileage. Training costs are not subtracted here.

What this means

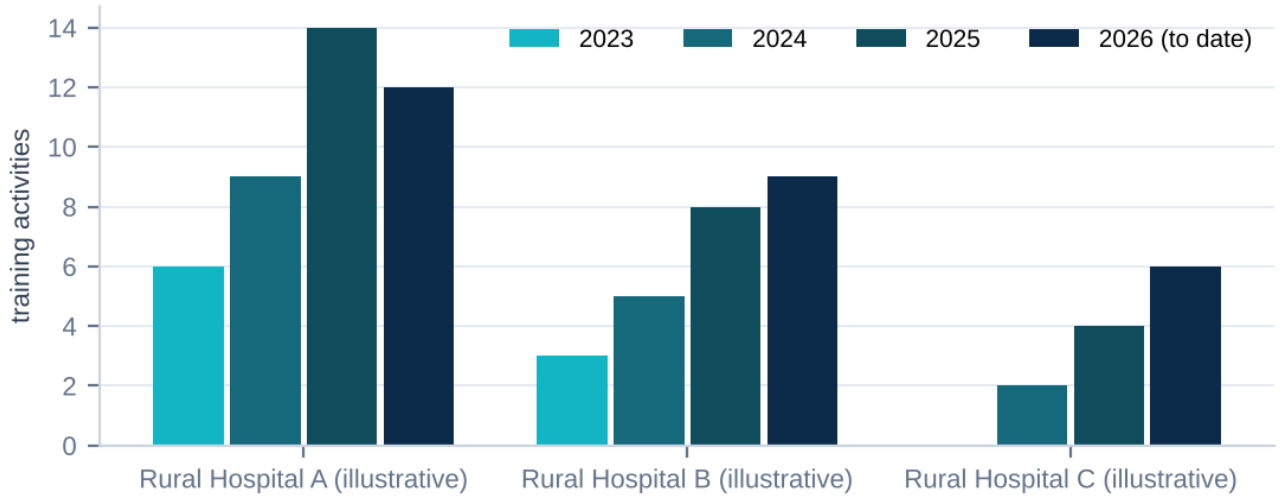
Added together, the expected value of events avoided by 3 years is about **$167,320**. The ranges for each outcome cannot simply be added, because the outcomes are uncertain independently.

2 of 2 cost figures are published averages. Replacing them with the hospital's own finance figures would make these values specific to the hospital.

These are gross values. The cost of delivering the training has not been subtracted.

Training Delivered by Site

Training is recorded as site-by-year totals for the 3 sites in this report, 2023 to 2026 (year to date). Rural Hospital A (illustrative): 41 activities, 388 learner visits, first on 2023-01-18; Rural Hospital B (illustrative): 25 activities, 214 learner visits, first on 2023-04-06; Rural Hospital C (illustrative): 12 activities, 97 learner visits, first on 2024-03-14.



What the training record shows

Rural Hospital A (illustrative) recorded 41 training activities and 388 learner visits, starting 2023-01-18. Activity grew from 6 in 2023 to 14 in 2025. The busiest year was 2025 (14).

Rural Hospital B (illustrative) recorded 25 training activities and 214 learner visits, starting 2023-04-06. Activity grew from 3 in 2023 to 8 in 2025. The busiest year was 2026 (9).

Rural Hospital C (illustrative) recorded 12 training activities and 97 learner visits, starting 2024-03-14. Activity grew from 2 in 2024 to 4 in 2025. The busiest year was 2026 (6).

Across the 3 sites, 78 activities were delivered; Rural Hospital A (illustrative) accounts for 53% of them. Differences in volume matter for the projections: a site with more training and more patients reaches a measurable result sooner.

Site	First activity	2023	2024	2025	2026	Activities	Learner visits
Rural Hospital A (illustrative)	2023-01-18	6	9	14	12	41	388
Rural Hospital B (illustrative)	2023-04-06	3	5	8	9	25	214
Rural Hospital C (illustrative)	2024-03-14	0	2	4	6	12	97

What was covered

Site	Topics	Disciplines	Units / settings
Rural Hospital A (illustrative)	PPH drill; Shoulder dystocia; Neonatal resuscitation (NRP); Pre-eclampsia / eclampsia; Precipitous ED delivery	Nurses, Physicians, Midwives, Respiratory therapists, EMS	Labor and delivery; Nursery; Emergency department
Rural Hospital B (illustrative)	PPH drill; Neonatal resuscitation (NRP); Maternal sepsis; Precipitous ED delivery	Nurses, Physicians, Respiratory therapists	Labor and delivery; Emergency department
Rural Hospital C (illustrative)	PPH drill; Shoulder dystocia; Neonatal resuscitation (NRP)	Nurses, Physicians, Paramedics	Emergency department; Labor and delivery

Outcomes

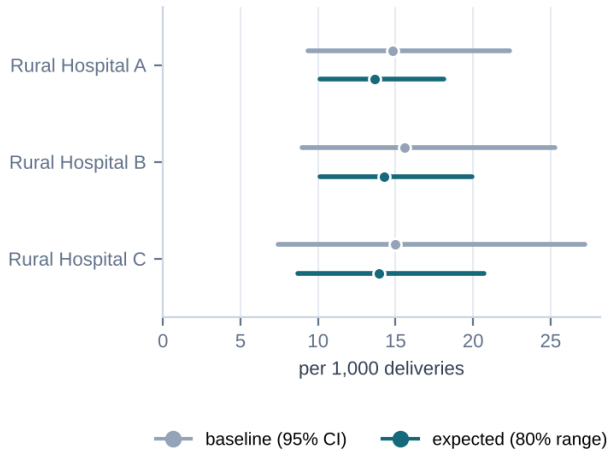
No site-by-year outcome counts have been added yet. Add them in the config (*aggregate: outcomes:*) to compare outcome rates before and after training and across sites.

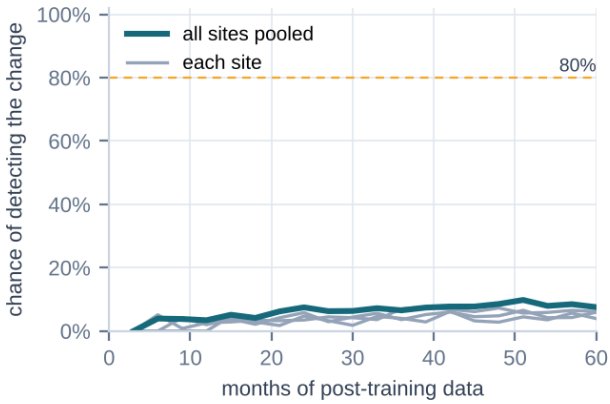
Site-by-year totals can't show which staff were trained or when within a year, so these results are weaker than a unit-month analysis: they support “associated with”, not “caused”. Year-to-date columns are partial years. Session-level records (date, site, unit, learners) would sharpen every estimate here.

Projected Impact by Outcome

Projection, not proof. Each site's historical baseline is combined with published effect sizes to set expectations before results come in. Real results are then judged against them.

PPH requiring transfusion





Site	Training starts	Baseline	Expected	Change by 2027-12 (80%)	Chance of benefit	Detectable
Rural Hospital A (illustrative) 20 in 1,350 over 36 mo · fidelity 80%	2027-01	14.8 9.4–22.3	13.7 10.1–18.1	−0.5 −1.0 to 0.0	92%	not within 5 years
Rural Hospital B (illustrative) 14 in 900 over 36 mo · fidelity 80%	2027-03	15.6 8.9–25.3	14.3 10.1–19.9	−0.3 −0.6 to 0.0	92%	not within 5 years
Rural Hospital C (illustrative) 9 in 600 over 36 mo · fidelity 80%	2027-05	15.0 7.4–27.2	13.9 8.7–20.7	−0.1 −0.3 to 0.0	92%	not within 5 years

Rates per 1,000 deliveries. Change = expected difference in transfusions for PPH by 2027-12 versus no change (negative = fewer).

What this means

Over the baseline period the 3 sites recorded 43 transfusions for PPH in 2,850 deliveries, a rate of 15.1 per 1,000. With the training in place, the expected rate is about 13.9 per 1,000.

Within 1 year of training starting, that means about **1.1 fewer transfusions for PPH** (80% range 0.1 to 2.2) across all sites; by 3 years, about **3.6 fewer transfusions for PPH** (80% range 0.3 to 7.1). An improvement is **likely** (92% chance of benefit).

Transfusions for PPH are rare at these volumes, so even a real improvement is unlikely to reach statistical significance within five years. Progress should be judged against the expected range on the tracking chart, alongside process measures that move sooner.

The effect comes from multi-site observational studies (Postpartum hemorrhage drills or simulations and adverse outcomes: a systematic review and Bayesian meta-analysis. J Matern Fetal Neonatal Med 2022;35(26):10416-27): a relative change of 0.80 (95% interval 0.57 to 1.09). Only 50% of that effect is applied here, because the evidence comes from settings that differ from these hospitals. The interval includes no effect, so the projection allows for the training making no difference.

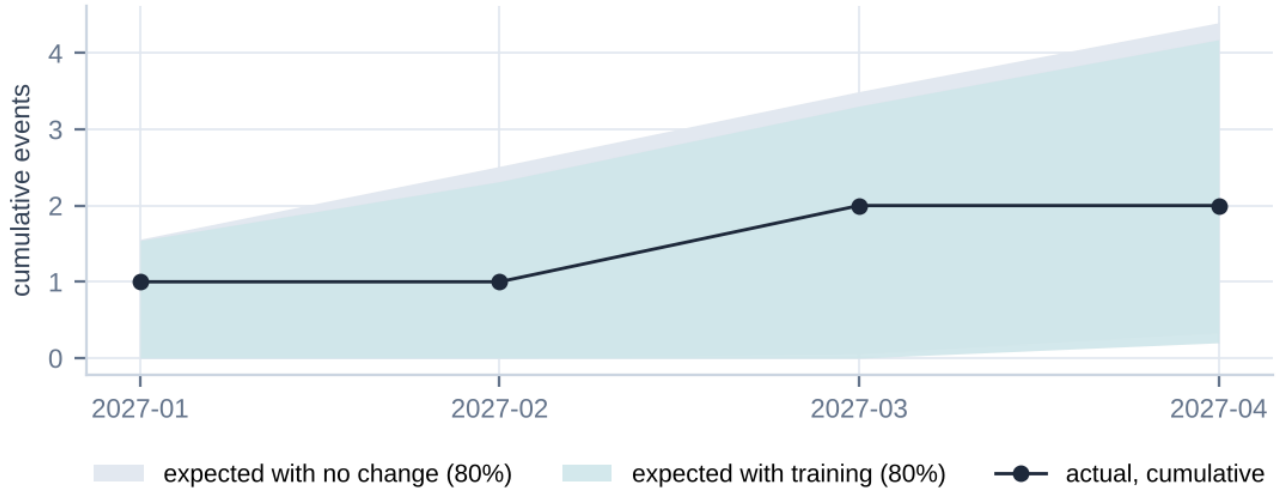
At $5,782 per event, the expected value of the change by 3 years is about **$23,519** (80% range $1,916 to $49,008).

Impact timeline (all sites)

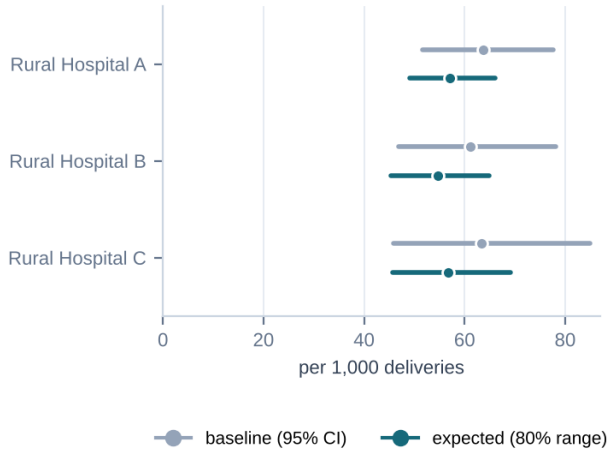
Time after training starts	Expected with no change	Expected with training	Change (80% range)	Chance of benefit	Chance detectable	Value avoided
3 months	3.6	3.4	**−0.2** (−0.4 to 0.0)	92%	0%	$1,357
6 months	7.3	6.7	**−0.5** (−1.0 to 0.0)	92%	4%	$3,373
1 year	14.5	13.3	**−1.1** (−2.2 to −0.1)	92%	3%	$7,403
2 years	29.0	26.6	**−2.4** (−4.7 to −0.2)	92%	7%	$15K
3 years	43.5	39.8	**−3.6** (−7.1 to −0.3)	92%	7%	$24K

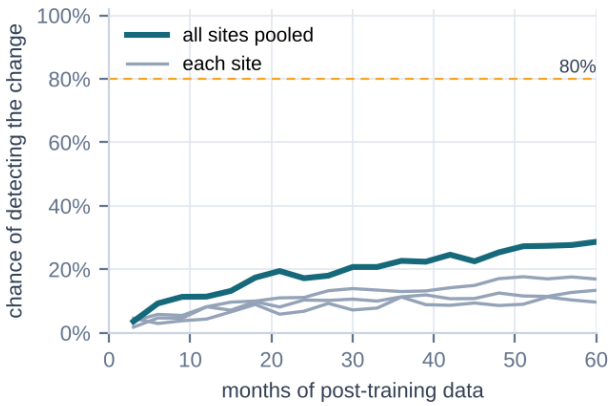
Counts of transfusions for PPH, all sites added together, each counted from its own training start. Chance detectable: all sites pooled, counted from the first site's start, one-sided test.

Tracking: Rural Hospital A (illustrative) · 4 months observed · Within the range expected with no change — too early to tell



Composite maternal morbidity (OB-STaT definition)





Site	Training starts	Baseline	Expected	Change by 2027-12 (80%)	Chance of benefit	Detectable
Rural Hospital A (illustrative) 86 in 1,350 over 36 mo · fidelity 80%	2027-01	63.7 51.6–77.7	57.0 49.1–66.0	−2.8 −4.3 to −1.2	99%	not within 5 years
Rural Hospital B (illustrative) 55 in 900 over 36 mo · fidelity 80%	2027-03	61.1 46.9–78.2	54.7 45.3–64.8	−1.5 −2.3 to −0.6	99%	not within 5 years
Rural Hospital C (illustrative) 38 in 600 over 36 mo · fidelity 80%	2027-05	63.3 45.9–84.9	56.8 45.7–69.2	−0.8 −1.2 to −0.3	99%	not within 5 years

Rates per 1,000 deliveries. Change = expected difference in deliveries with composite morbidity by 2027-12 versus no change (negative = fewer).

What this means

Over the baseline period the 3 sites recorded 179 deliveries with composite morbidity in 2,850 deliveries, a rate of 62.8 per 1,000. With the training in place, the expected rate is about 56.2 per 1,000.

Within 1 year of training starting, that means about **5.9 fewer deliveries with composite morbidity** (80% range 2.6 to 9.0) across all sites; by 3 years, about **18.7 fewer deliveries with composite morbidity** (80% range 8.3 to 28.4). An improvement is **very likely** (99% chance of benefit).

Deliveries with composite morbidity are rare at these volumes, so even a real improvement is unlikely to reach statistical significance within five years. Progress should be judged against the expected range on the tracking chart, alongside process measures that move sooner.

The effect comes from single-site or uncontrolled studies (Lutgendorf MA et al. Interprofessional obstetric simulation training improves postpartum haemorrhage management and decreases maternal morbidity: a before-and-after study. BJOG 2024;131(3):353-361 (online 2023)): a relative change of 0.83 (95% interval 0.71 to 0.98). Only 75% of that effect is applied here, because the evidence comes from settings that differ from these hospitals.

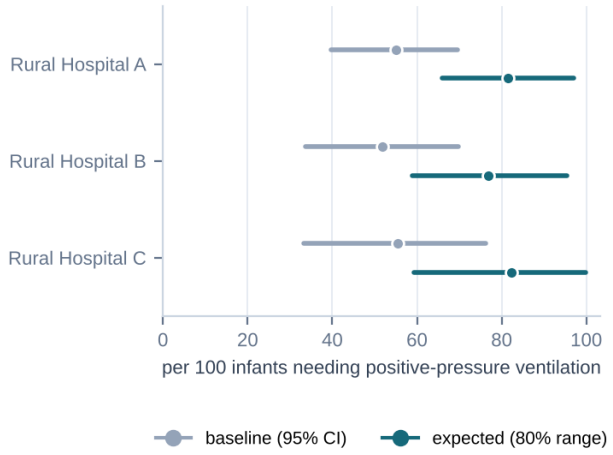
At $5,782 per event, the expected value of the change by 3 years is about **$143,801** (80% range $61,587 to $270,967).

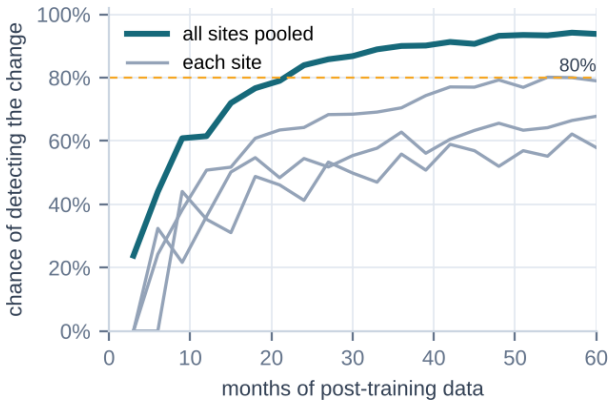
Impact timeline (all sites)

Time after training starts	Expected with no change	Expected with training	Change (80% range)	Chance of benefit	Chance detectable	Value avoided
3 months	14.9	13.9	**−1.1** (−1.7 to −0.5)	99%	4%	$8,322
6 months	29.9	27.2	**−2.7** (−4.1 to −1.2)	99%	9%	$21K
1 year	59.7	54.0	**−5.9** (−9.0 to −2.6)	99%	11%	$45K
2 years	119.5	107.4	**−12.3** (−18.7 to −5.4)	99%	17%	$95K
3 years	179.2	160.8	**−18.7** (−28.4 to −8.3)	99%	23%	$144K

Counts of deliveries with composite morbidity, all sites added together, each counted from its own training start. Chance detectable: all sites pooled, counted from the first site's start, one-sided test.

Effective ventilation within 60 seconds (infants needing PPV)





Site	Training starts	Baseline	Expected	Change by 2027-12 (80%)	Chance of benefit	Detectable
Rural Hospital A (illustrative) 22 in 40 over 36 mo · fidelity 80%	2027-01	55.0 39.7–69.6	81.5 66.0–97.0	3.2 2.4 to 3.9	100%	54 months
Rural Hospital B (illustrative) 14 in 27 over 36 mo · fidelity 80%	2027-03	51.9 33.6–69.7	76.9 58.9–95.4	1.6 1.2 to 2.1	100%	not within 5 years
Rural Hospital C (illustrative) 10 in 18 over 36 mo · fidelity 80%	2027-05	55.6 33.2–76.3	82.3 59.4–99.9	0.9 0.6 to 1.1	100%	not within 5 years

Rates per 100 infants needing positive-pressure ventilation. Change = expected difference in infants ventilated within 60 s by 2027-12 versus no change (negative = fewer).

What this means

Over the baseline period the 3 sites recorded 46 infants ventilated within 60 s in 85 infants needing positive-pressure ventilation, a rate of 54.1 per 100. With the training in place, the expected rate is about 80.2 per 100.

Within 1 year of training starting, that means about **6.6 more infants ventilated within 60 s** (80% range 5.4 to 7.9) across all sites; by 3 years, about **21.1 more infants ventilated within 60 s** (80% range 17.1 to 25.1). An improvement is **very likely** (100% chance of benefit).

It should become statistically visible in the hospital's own data after about 24 months with all sites pooled.

The effect comes from multi-site observational studies (Does the Helping Babies Breathe Programme impact on neonatal resuscitation care practices? Systematic review and meta-analysis. Acta Paediatrica 2019

(doi:10.1111/apa.14706)): a relative change of 2.67 (95% interval 2.17 to 3.28). Only 50% of that effect is applied here, because the evidence comes from settings that differ from these hospitals.

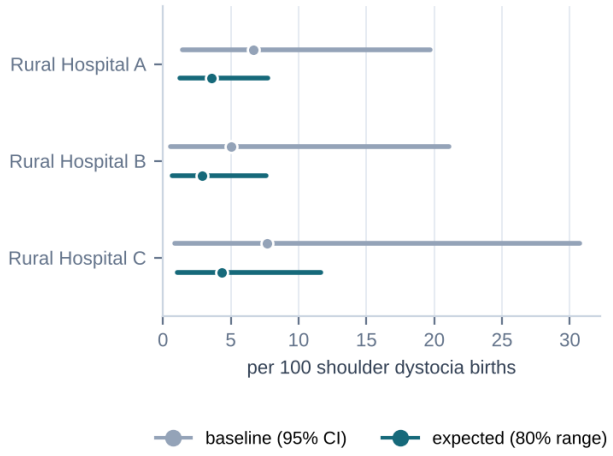
This is a process measure: it reflects how care is delivered and tends to move before patient outcomes do.

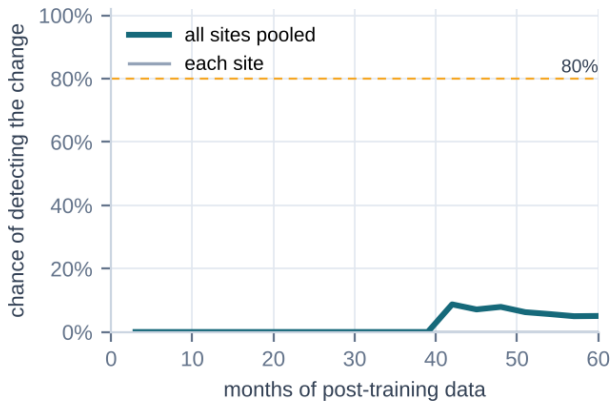
Impact timeline (all sites)

Time after training starts	Expected with no change	Expected with training	Change (80% range)	Chance of benefit	Chance detectable
3 months	3.8	5.0	**+1.2** (−1.4 to −0.9)	100%	24%
6 months	7.7	10.7	**+3.0** (−3.5 to −2.4)	100%	44%
1 year	15.4	22.1	**+6.6** (−7.9 to −5.4)	100%	62%
2 years	30.7	44.8	**+13.8** (−16.5 to −11.2)	100%	84%
3 years	46.1	67.5	**+21.1** (−25.1 to −17.1)	100%	90%

Counts of infants ventilated within 60 s, all sites added together, each counted from its own training start. Chance detectable: all sites pooled, counted from the first site's start, one-sided test.

Brachial plexus injury after shoulder dystocia





Site	Training starts	Baseline	Expected	Change by 2027-12 (80%)	Chance of benefit	Detectable
Rural Hospital A (illustrative) 2 in 30 over 36 mo · fidelity 80%	2027-01	6.7 1.4–19.7	3.6 1.3–7.7	−0.3 −0.7 to −0.1	100%	not within 5 years
Rural Hospital B (illustrative) 1 in 20 over 36 mo · fidelity 80%	2027-03	5.0 0.5–21.1	2.9 0.7–7.6	−0.1 −0.4 to 0.0	100%	not within 5 years
Rural Hospital C (illustrative) 1 in 13 over 36 mo · fidelity 80%	2027-05	7.7 0.8–30.7	4.4 1.0–11.7	−0.1 −0.3 to 0.0	100%	not within 5 years

Rates per 100 shoulder dystocia births. Change = expected difference in brachial plexus injuries by 2027-12 versus no change (negative = fewer).

What this means

Over the baseline period the 3 sites recorded 4 brachial plexus injuries in 63 shoulder dystocia births, a rate of 6.3 per 100. With the training in place, the expected rate is about 3.5 per 100.

Within 1 year of training starting, that means about **0.7 fewer brachial plexus injuries** (80% range 0.3 to 1.3) across all sites; by 3 years, about **2.3 fewer brachial plexus injuries** (80% range 1.0 to 4.1). An improvement is **very likely** (100% chance of benefit).

Brachial plexus injuries are rare at these volumes, so even a real improvement is unlikely to reach statistical significance within five years. Progress should be judged against the expected range on the tracking chart, alongside process measures that move sooner.

The effect comes from single-site or uncontrolled studies (Crofts JF et al. Prevention of brachial plexus injury — 12 years of shoulder dystocia training: an interrupted time-series study. BJOG 2016;123(1):111-118): a relative change of 0.31 (95% interval 0.13 to 0.75). Only 75% of that effect is applied here, because the evidence comes from settings that differ from these hospitals.

Impact timeline (all sites)

Time after training starts	Expected with no change	Expected with training	Change (80% range)	Chance of benefit	Chance detectable
3 months	0.4	0.2	**−0.1** (−0.3 to −0.1)	100%	0%
6 months	0.7	0.4	**−0.3** (−0.6 to −0.2)	100%	0%
1 year	1.5	0.8	**−0.7** (−1.3 to −0.3)	100%	0%
2 years	3.0	1.5	**−1.5** (−2.7 to −0.7)	100%	0%
3 years	4.5	2.3	**−2.3** (−4.1 to −1.0)	100%	0%

Counts of brachial plexus injuries, all sites added together, each counted from its own training start. Chance detectable: all sites pooled, counted from the first site's start, one-sided test.

Evidence used

Effect	Effect (95% CI)	Design and setting	Share applied
PPH drills / simulation → any blood transfusion Postpartum hemorrhage drills or simulations and adverse outcomes: a systematic review and Bayesian meta-analysis. J Matern Fetal Neonatal Med 2022;35(26):10416-27 Evidence B · multi-site observational	0.80 (0.57–1.09) relative risk	Systematic review and Bayesian meta-analysis of 18 before-after studies, 355,060 deliveries; 95% credible interval. Transfusion 1.68% → 1.27%. Probability of a reduction 96% in non-U.S. studies but only 23% in U.S. studies; no U.S. study rated good quality.	50%
In-situ interprofessional PPH team training (OB-STaT) → composite maternal morbidity Lutgendorf MA et al. Interprofessional obstetric simulation training improves postpartum haemorrhage management and decreases maternal morbidity: a before-and-after study. BJOG 2024;131(3):353-361 (online 2023) Evidence C · single-site / uncontrolled	0.83 (0.71–0.98) relative risk	Before-and-after study (6 months each side), U.S. maternity hospitals, 9,980 deliveries; 6.35% → 5.28% (p = 0.03). PPH rate itself unchanged; TXA use 2.7% → 4.8% Computed here from counts back-calculated from the reported percentages: 260/4,921 after vs 321/5,059 before	75%
Helping Babies Breathe → bag-and-mask ventilation within the Golden Minute (process; higher is better) Does the Helping Babies Breathe Programme impact on neonatal resuscitation care practices? Systematic review and meta-analysis. Acta Paediatrica 2019 (doi:10.1111/apa.14706) Evidence B · multi-site observational	2.67 (2.17–3.28) relative risk	Systematic review and meta-analysis (LMIC)	50%
PROMPT shoulder dystocia training → brachial plexus injury (per shoulder dystocia), early period Crofts JF et al. Prevention of brachial plexus injury — 12 years of shoulder dystocia training: an interrupted time-series study. BJOG 2016;123(1):111-118 Evidence C · single-site / uncontrolled	0.31 (0.13–0.75) relative risk	Interrupted time series, 12 years, single UK tertiary unit (~6,000 births/yr), 1,148 shoulder dystocias; 7.4% → 2.3% → 1.3%. U.S. replication: Inglis 2011 (AJOG), 30% → 10.67%, single site, no counts. Computed here from the reported counts: 6/262 early training vs 24/324 pre-training. Late period: 7/562, RR 0.17 (0.07–0.39)	75%

“Share applied” scales the published effect (log scale) to this setting; evidence from low- and middle-income countries is halved by default. Each site's fidelity scales it again, and the effect phases in over the ramp period.

Data and Methods

Projection. Baselines use a Beta (Jeffreys) posterior from each site's historical numerator and denominator. Effects are drawn from the published relative risk and its 95% CI, scaled by transferability and site fidelity, and phased in over a ramp period. Detection (assurance) is the chance a one-sided test would flag the change, using an exact conditional binomial test for rare outcomes and a z-test for process measures.

Site-by-year summaries. Training is known only as activities per site per year, so effects are estimated between sites and years, not between units and months. With outcome counts by site and year, each site's rate before its first training year is compared with the rate after, and a pooled Poisson model relates the outcome rate to training activities per year with site and year fixed effects, an exposure offset and site-clustered standard errors (t with sites − 1 degrees of freedom).

Limits. Observational data. Initiatives running at the same time as the training can bias results. Effects estimated here belong to this setting and become more precise with more units, months or sites.

Data quality log

Source	Issue	Rows	Detail
aggregate	training summary loaded	3	demo_training_site_year.csv: 3 sites, years 2023–2026 (2026 year to date)