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Cost of immunization during the COVID-19 pandemic

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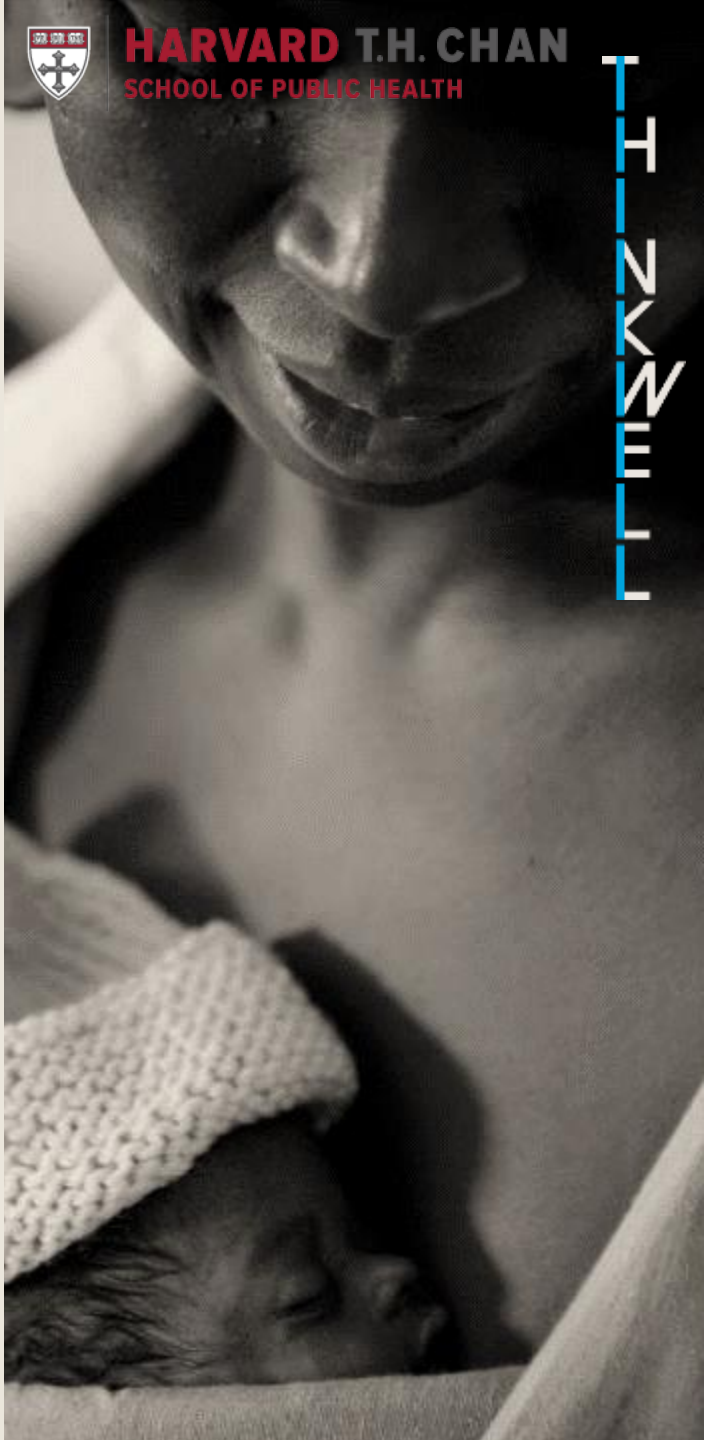
AGENDA

1. Overview
2. Campaigns
3. Routine
4. Routine outreach
5. Conclusions & discussion



1. Overview of the analyses

COVID-19: IMPLICATIONS ON IMMUNIZATION DELIVERY COSTS

COVID-19 pandemic is disrupting immunization services

Need to modify immunization services to optimize coverage while minimizing the risks of COVID-19 transmission

How much more does it cost to ensure continuation of immunization services during the COVID-19 pandemic?

COVID-19: IMPLICATIONS ON IMMUNIZATION DELIVERY COSTS

COVID-19 pandemic is disrupting immunization services

Need to modify immunization services to optimize coverage while minimizing the risks of COVID-19 transmission

SCENARIOS & ASSUMPTIONS

- We developed scenarios of potential delivery strategy changes based on:
  - **WHO guidance**
  - **COVID-19 country protocols**: Bangladesh, DRC, Guinea, India, Indonesia, Kenya, Philippines and Uganda
  - Review of experiences from the **Ebola** epidemic

- Source for **price** data:
  - WHO COVID-19 Essential Supplies Forecasting Tool
  - UNICEF Supply Catalogue
  - WASH study

OVERVIEW OF THE SCENARIOS

1. Personal protective equipment (**PPE**) & Infection Prevention and Control (**IPC**) measures for immunization sessions

2. Adding staff to ensure **physical distance** is maintained and for **screening** during immunization sessions

3. **Context adjustments**: changes in session sizes and frequency, hazard pay to compensate health workers

4. Other **operational cost** increases: additional social mobilization, communication, training, transport, etc.

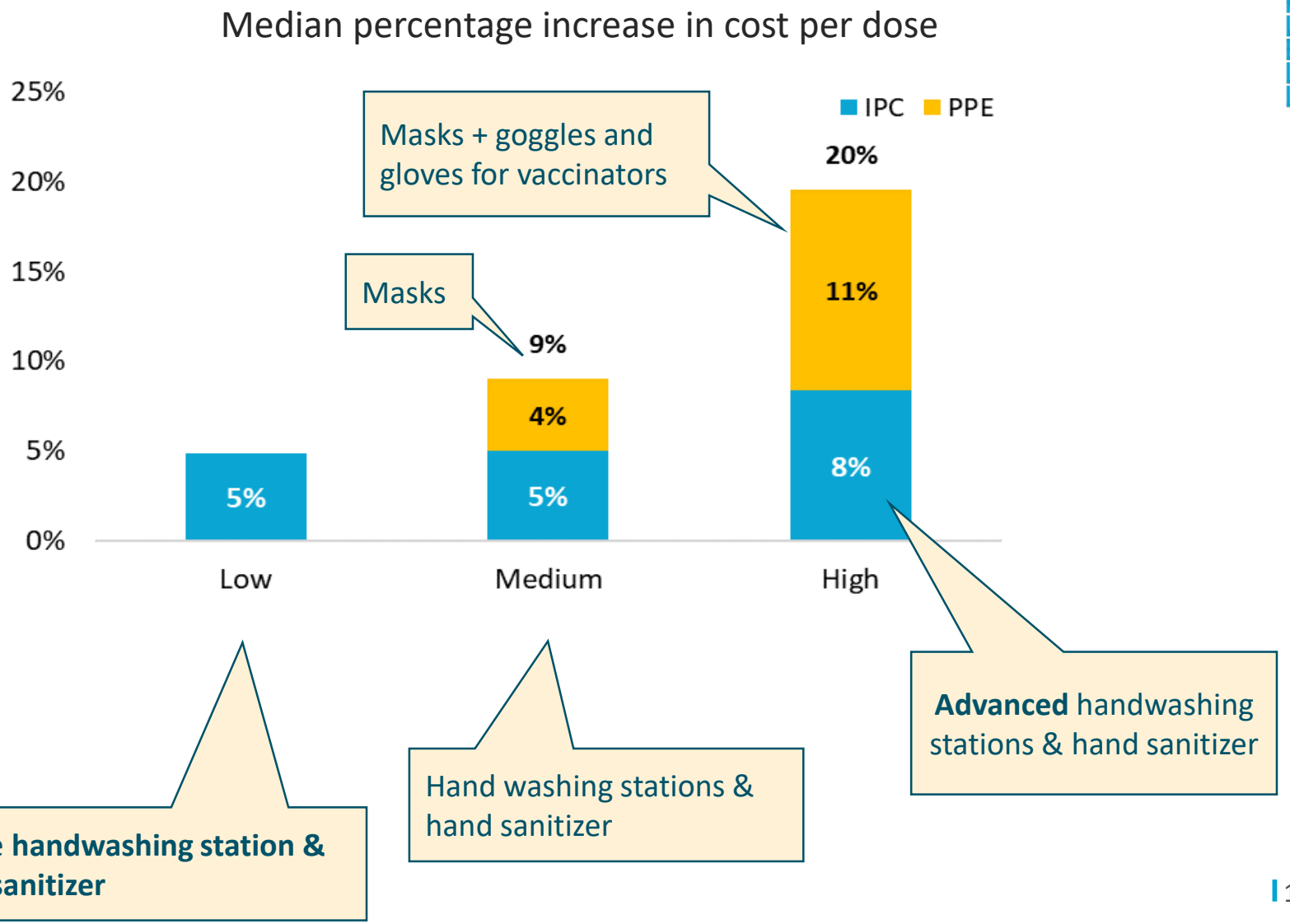
2. Campaigns

CAMPAIGN ANALYSIS: OVERVIEW

- Data reported in **10 campaign costing studies** from low and middle income countries
- The majority of these were **pilot/feasibility studies (n=6),** followed by costing of outbreak/reactive campaigns (n=3) and follow-up (n=1)
- The campaign strategies were predominantly **fixed-site** based, four studies also contained a mobile delivery element
- Calculated the additional **cost per dose in USD** and as a **percentage** increase

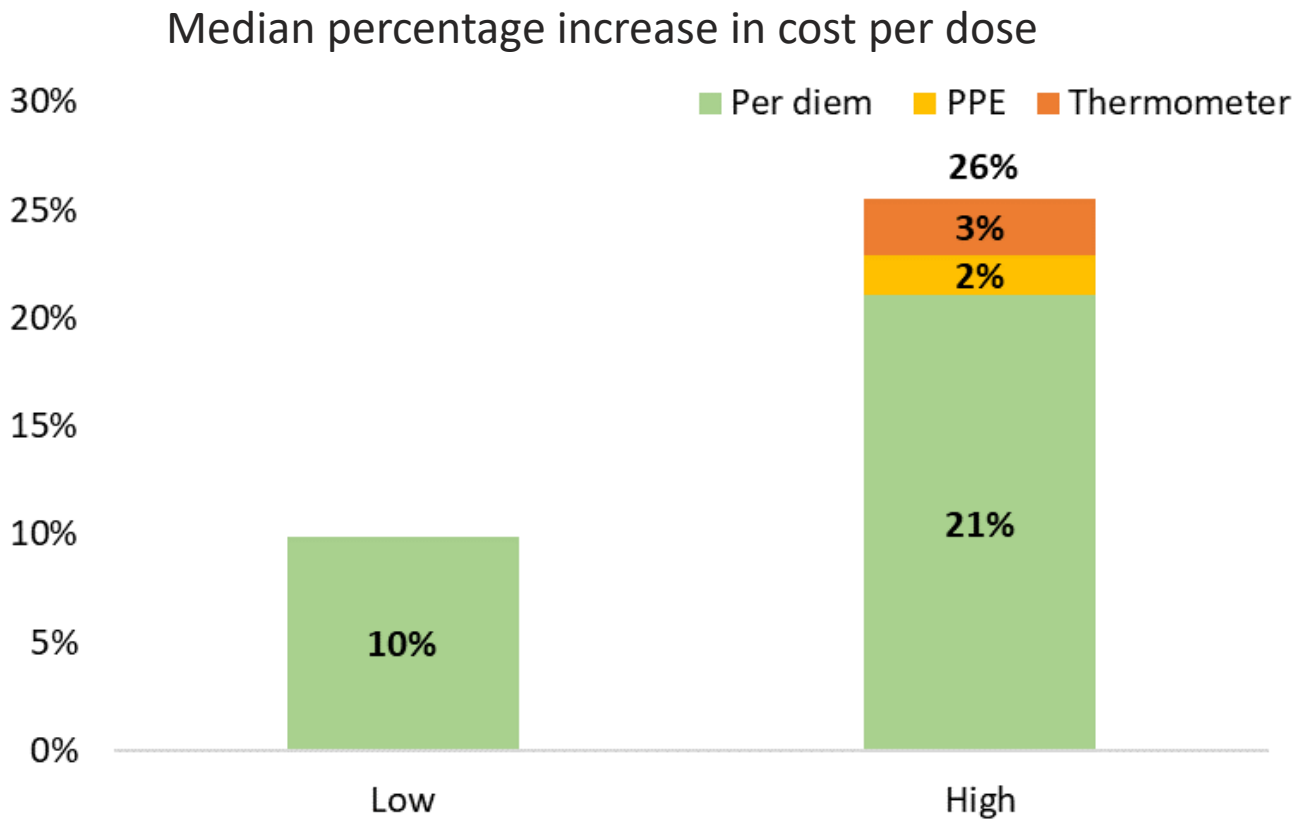
1. PPE & IPC

n= 9


Median percentage increase in cost per dose
25%
20%
15%
10%
5%
0%
IPC
PPE
Masks + goggles and gloves for vaccinators
Masks
20%
11%
9%
4%
5%
8%
5%
Low
Medium
High
Simple **handwashing station & hand sanitizer**
Hand washing stations & hand sanitizer
Advanced handwashing stations & hand sanitizer

2. PHYSICAL DISTANCING & SCREENING

n=4

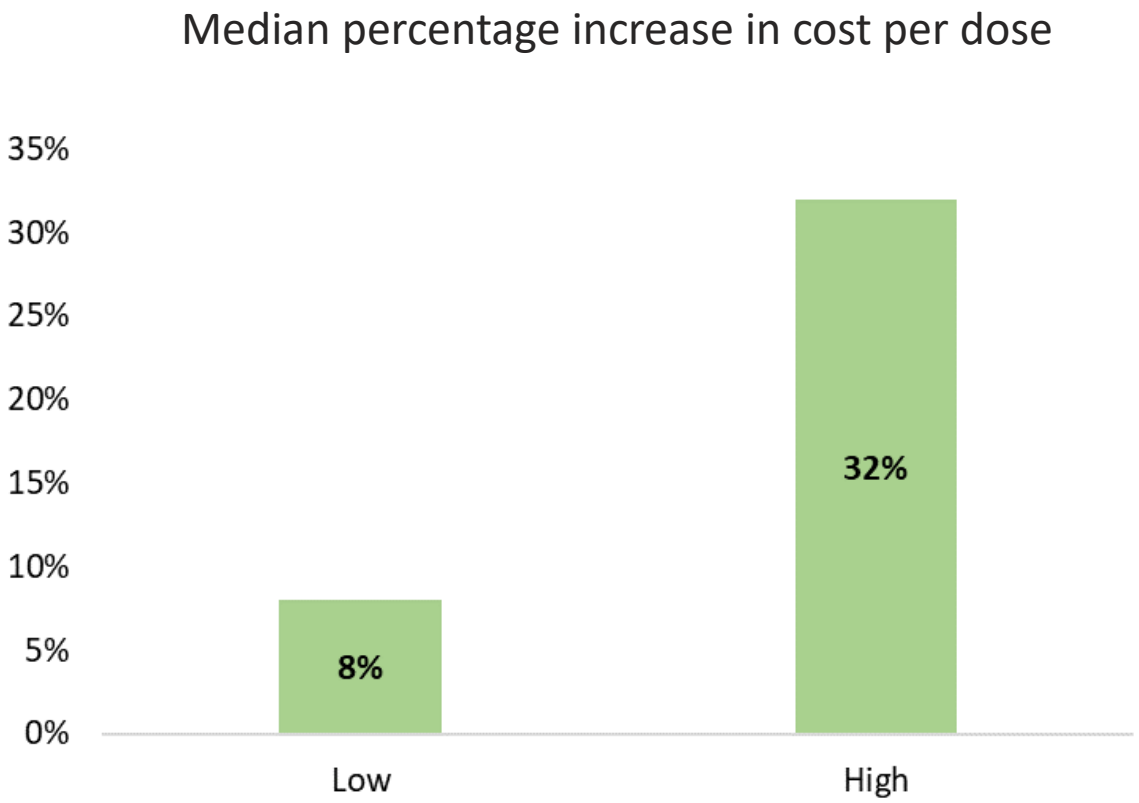


- **One** additional crowd controller on each team

- Adding **two** crowd controllers on each team
- 1 **infrared thermometer** per team

3. EXTENDED CAMPAIGN DURATION

n=5

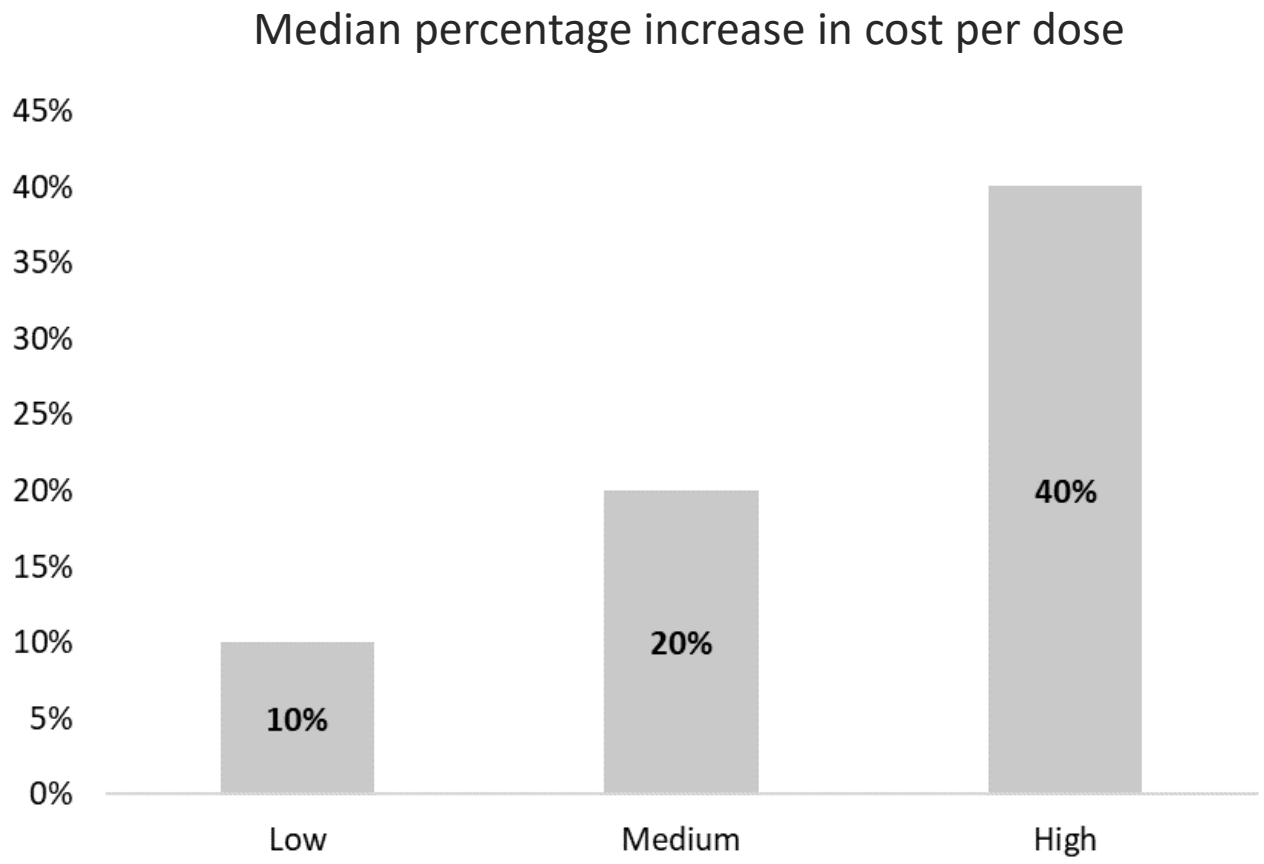


Additional health worker per diems associated with a **reduction to the daily target to 80%** of the original achievement

Reducing to **50%** of the daily target

4. OPERATIONAL COST INCREASE

n=7



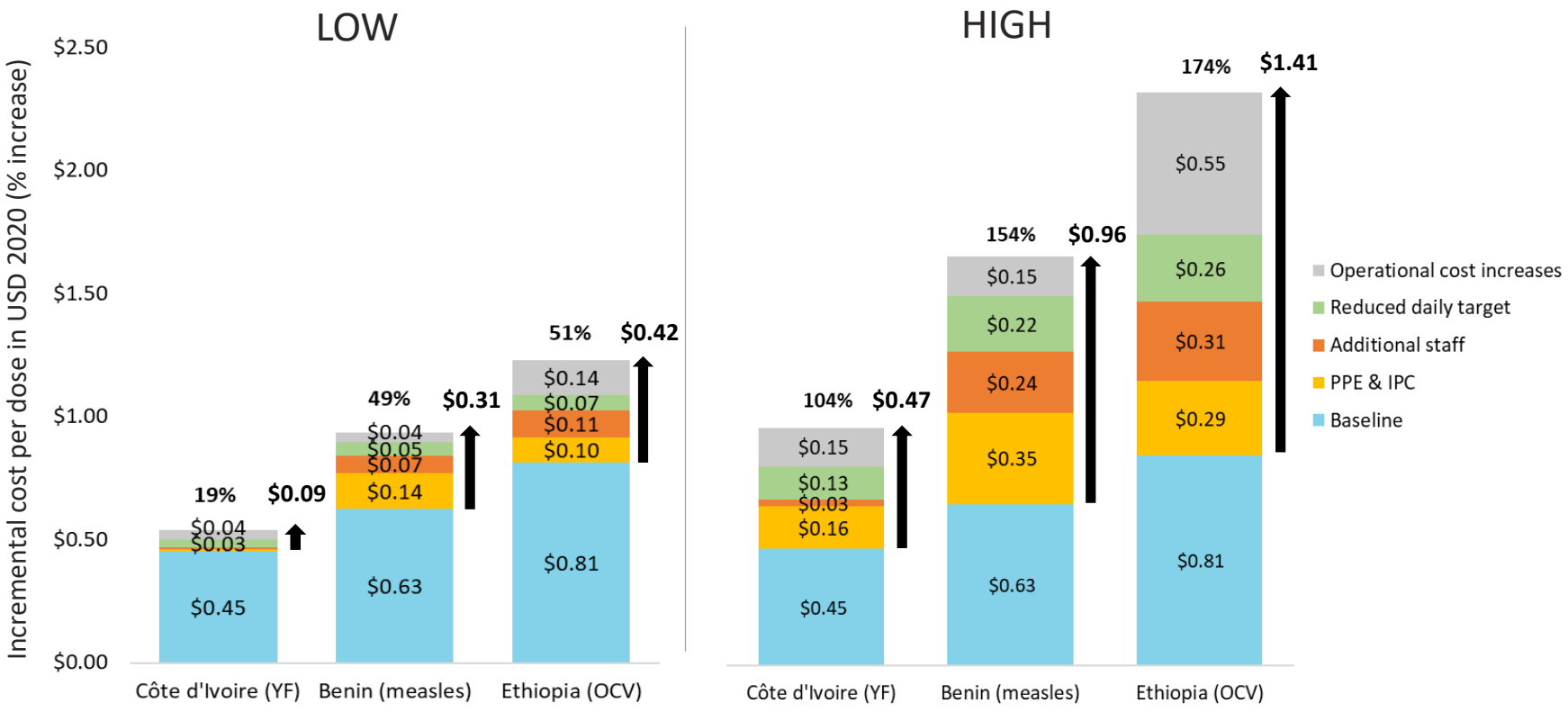
An increase of **25%** of all cost components potentially affected by COVID-19: social mobilization, training, transport, etc.

Increase of **50%**

Increase of **100%**

CUMULATIVE: ALL MEASURES COMBINED

n=3



1. Simple **handwashing station (no PPE)**
2. **1 additional crowd controller**
3. **80%** of daily target
4. **25%** increase of operational components

1. **Masks, gloves, goggles & advanced** handwashing stations
2. **2** additional crowd controllers + **infrared thermometer**
3. **50%** of daily target
4. **100%** increase of operational components

3. Routine

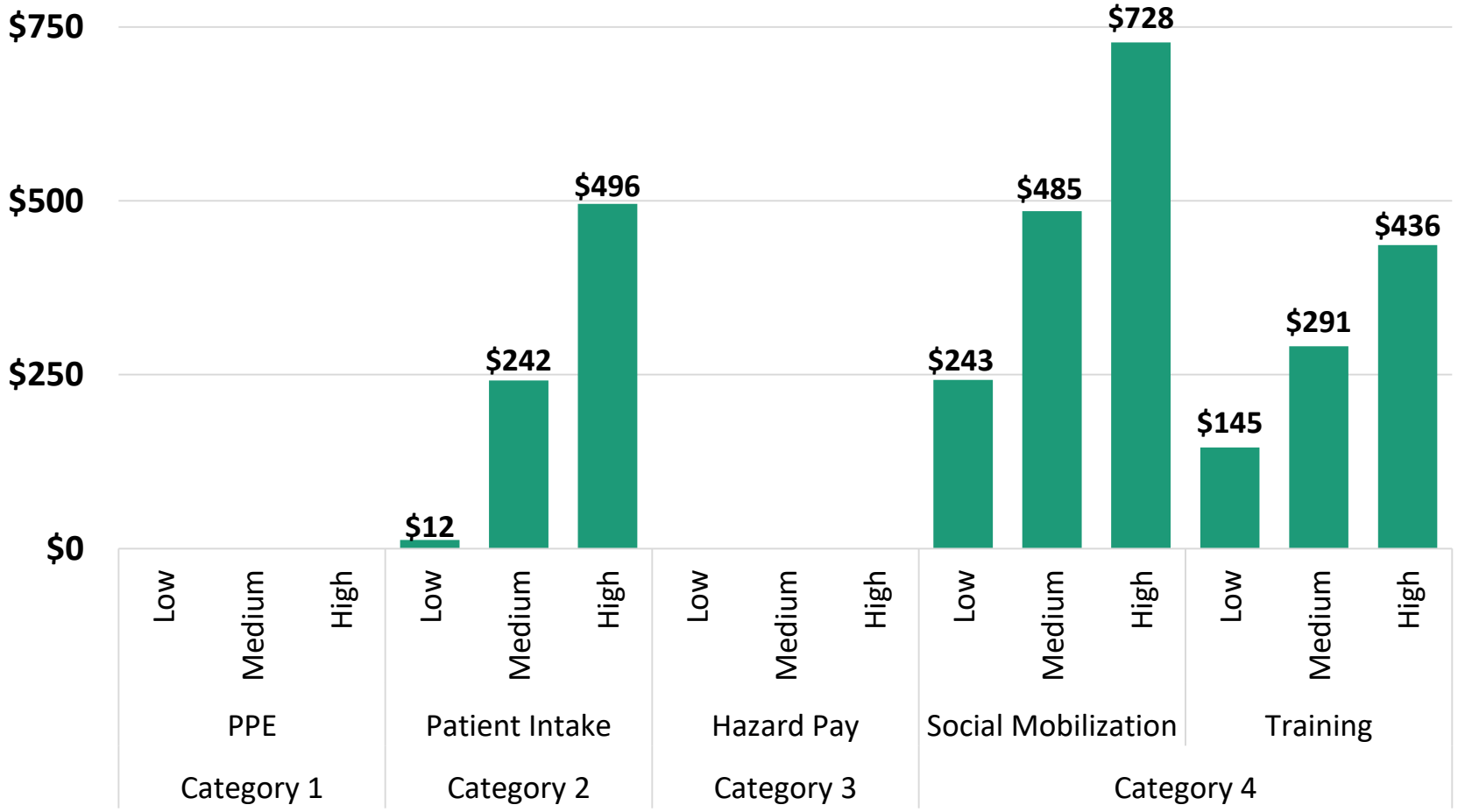
ROUTINE SCENARIOS

Each category is presented as the incremental financial outlays required for the relevant adjustments.

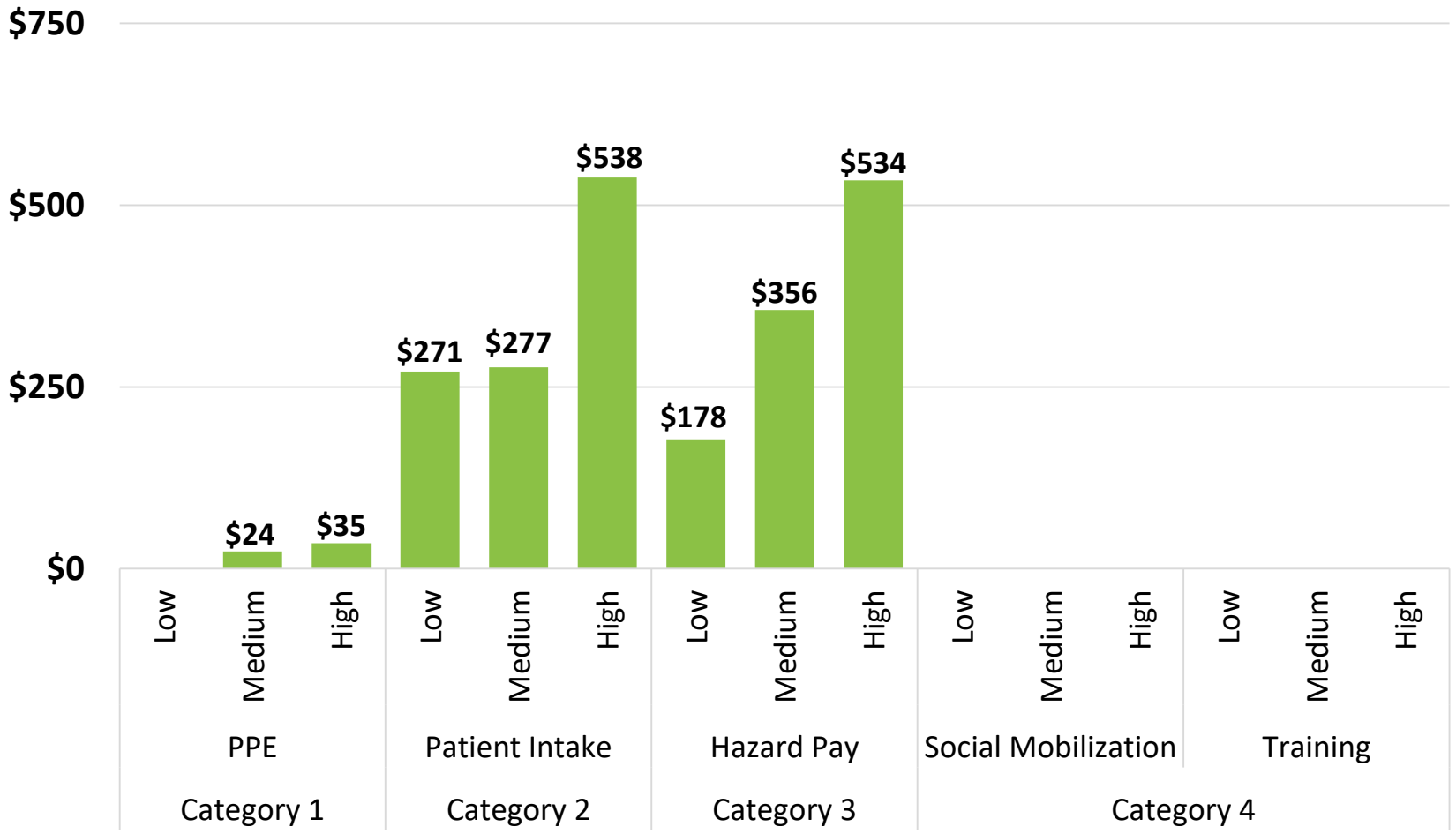
	1. PPE	2. Physical distance	3. Hazard pay	4. Training/social mobilization*
LOW	• No PPE	• One additional team member • Hand washing station for facility waiting area (low: simple; medium: higher quality) • Tape; plexiglass barriers (medium only)	**10%** of salary hazard pay rate	**50/100%** of estimated costs required for COVID-19
MEDIUM	• 1 x mask per health worker per day • Hand sanitizer for vaccinators		**20%** of salary hazard pay rate	**100/200%** of estimated costs required for COVID-19
HIGH	• 1 x mask per health worker per day • Reusable goggles for vaccinators • 1 x pair of gloves per client per day for vaccinators • 2 x pair of gloves for non-vaccinators per day	• Two additional team members • Hand washing station for facility waiting area • Tape; plexiglass barriers; one screening tent & thermometer per facility	**30%** of salary hazard pay rate	**150/300%** of estimated costs required for COVID-19

**According to estimates from 11 IDCC studies inflated to 2018 USD.*

TOTAL INCREASE IN ROUTINE COSTS PER FACILITY: STARTUP COSTS



TOTAL INCREASE IN ROUTINE COSTS PER FACILITY: MONTHLY RECURRENT COSTS



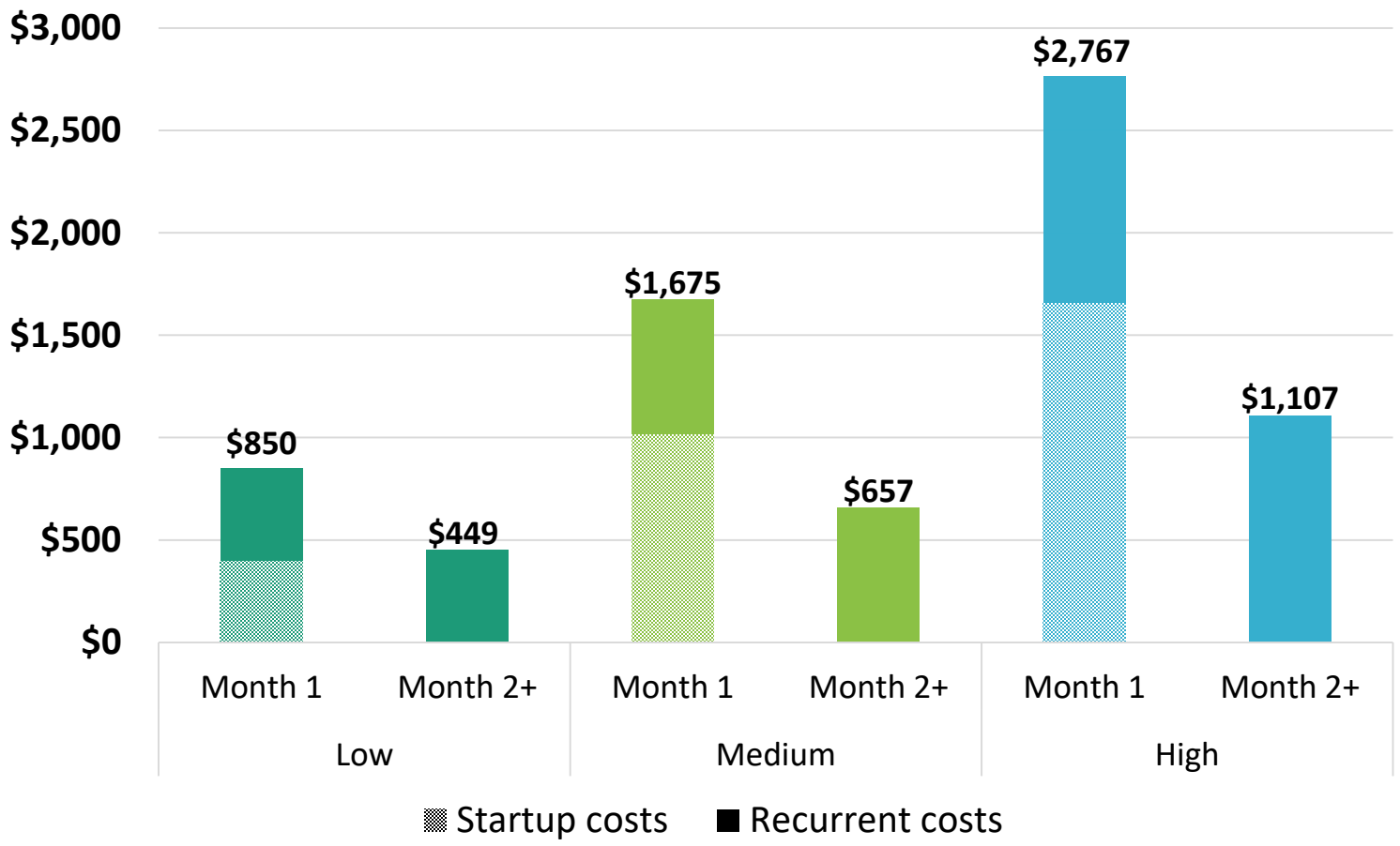
ROUTINE SCENARIOS

Each category is presented as the incremental financial outlays required for the relevant adjustments.

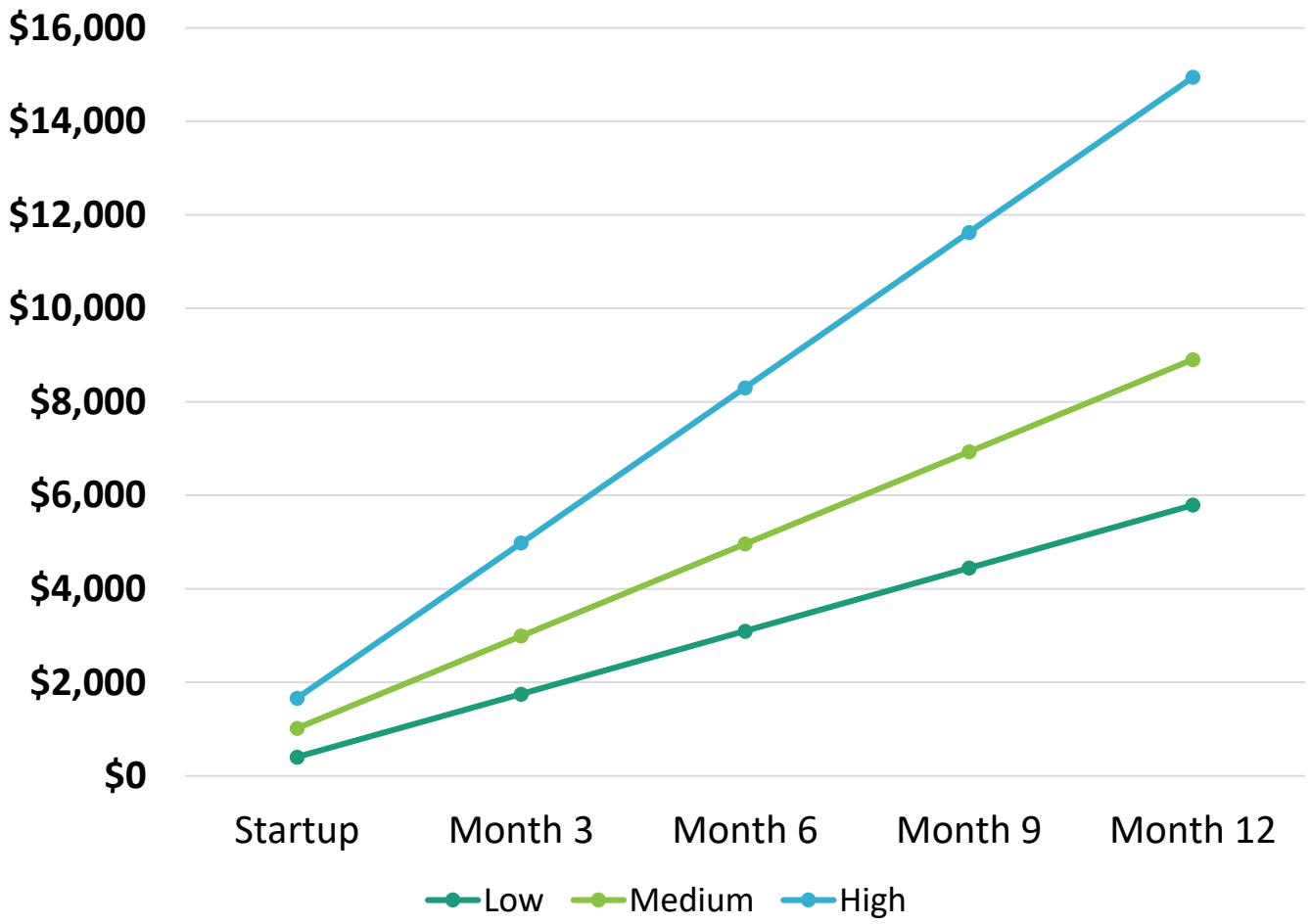
	1. PPE	2. Physical distance	3. Hazard pay	4. Training/social mobilization*
LOW	• No PPE R:$0	• One additional team member S:$12 R:$271	**10%** of salary hazard pay rate R:$178	St:$145 estimated costs required for Ssm:$243
MEDIUM	• 1 x mask per health worker per day • Hand sanitizer for vacc R:$24	simple; medium: higher quality) • Tape; plexiglass barriers (medium only) S:$242 R:$277	**20%** of salary hazard pay rate R:$271	St:$291 estimated costs Ssm:$485
HIGH	• 1 x mask per health worker per day • Reusable goggles for vaccinators • 1 x pair of gloves per client per day for vaccinators • 2 x pair of gloves for non R:$35 day	• Two additional team members • Hand washing station for facility waiting area • Tape; plexiglass barriers; one screening tent & thermometer per facility S:$496 R:$538	**30%** of salary hazard pay rate R:$538	St:$436 **150/300%** of estimated costs required for COVID-19 Ssm:$728

**According to estimates from 11 IDCC studies inflated to 2018 USD.*

AVERAGE PER-FACILITY COSTS OVER TIME, COST CATEGORIES COMBINED



CUMULATIVE PER-FACILITY COST OVER TIME, BY SCENARIO:



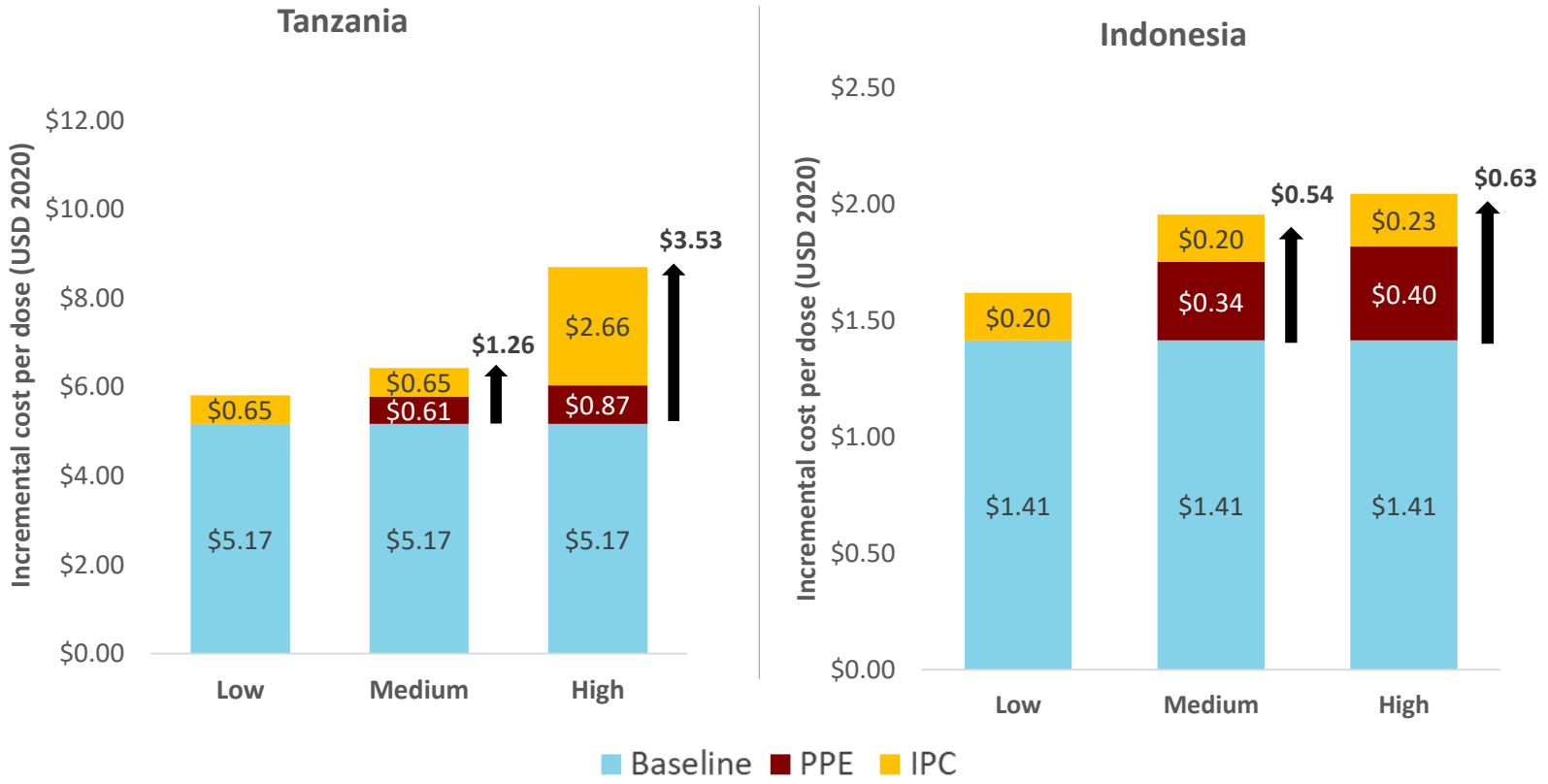
4. Routine outreach

ANALYSIS BASED OFF OF 2 EXISTING COSTING STUDIES ON ROUTINE OUTREACH

	Tanzania	Indonesia
Schedule	BCG, OPV, Penta, PCV, Rota, MR 2d	HepB birth, BCG, OPV, Penta, Measles 3d, DT, Td
Baseline cost per dose in outreach (2020 USD)	US$ **5.17**	US$ **1.41**
Median % doses delivered in outreach	14%	67%
Sessions per month	2.1	24
Doses per session/day	34	11
Outreach per diem pp/d	US$ 7.86	US$ 0.00

PPE & IPC AT OUTREACH SESSION SITES

LOW	MEDIUM	HIGH
– No PPE – Simple handwash. station – Hand sanitizer	– Masks – Simple handwash. station – Hand sanitizer	– Masks – Gloves – Reusable goggles – Advanced handwash. station – Hand sanitizer



PHYSICAL DISTANCING AND SCREENING

LOW

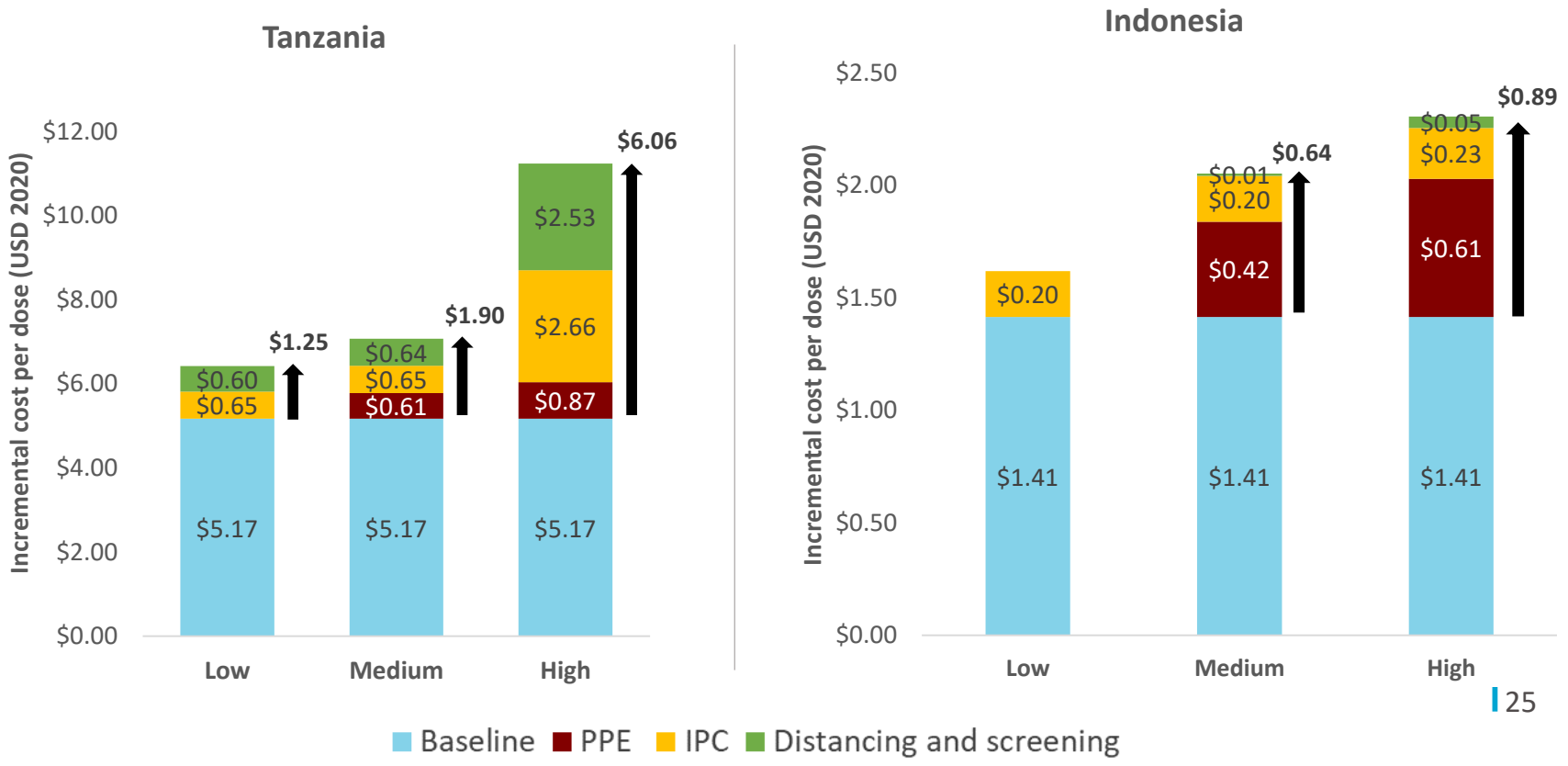
- One crowd controller
- No PPE

MEDIUM

- One crowd controller
- Masks

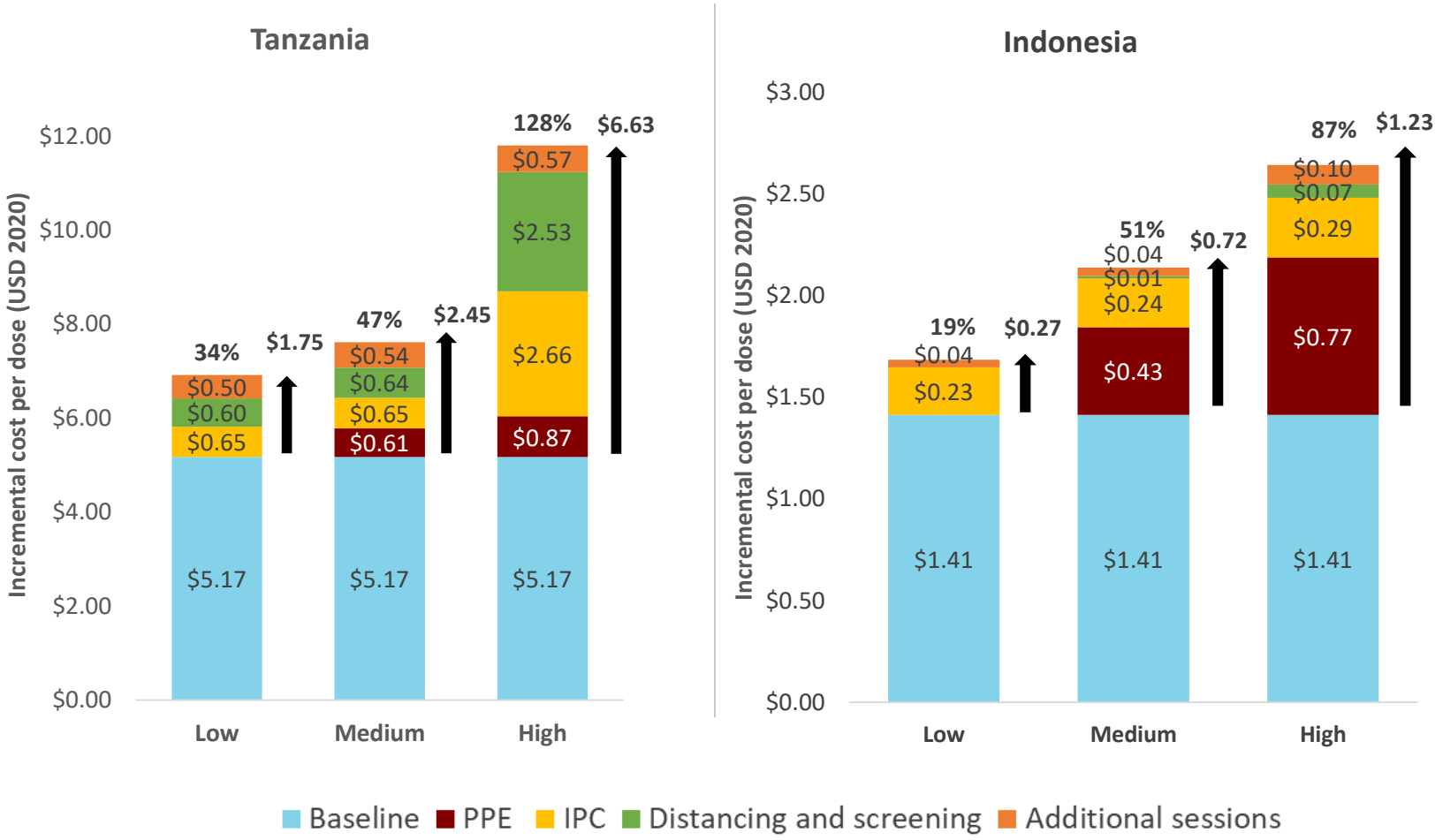
HIGH

- Two crowd controllers
- Masks
- Gloves
- Infrared thermometer

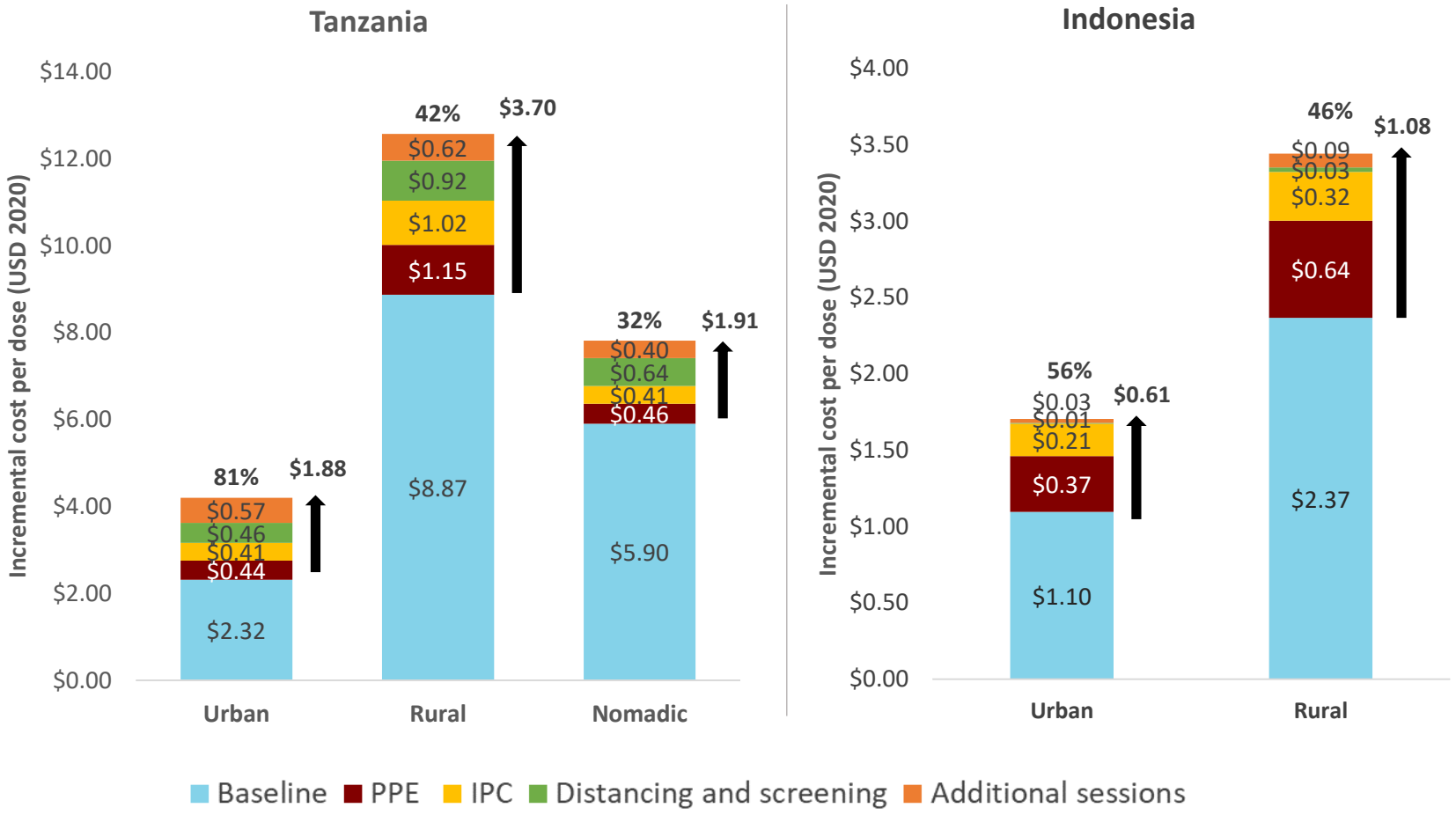


COMPENSATING FOR A DROP IN ATTENDANCE AT FACILITY-BASED SESSIONS & CLOSING OF SCHOOLS

LOW	MEDIUM	HIGH
– Drop of 10% at facilities and 50% at schools	– Drop of 25% at facilities and 50% at schools	– Drop of 50% at facilities and 100% at schools



COST OF OUTREACH BY GEOGRAPHIC AREA



ALTERNATIVE: CHANGES IN SESSION SIZE AND SESSION FREQUENCY

A: compensating for drop in facility-based/school-based coverage

Drop of 10% at facilities and 50% at schools

Drop of 25% at facilities and 50% at schools

Drop of 50% at facilities and 100% at schools

B: changes in frequency/size

Half the frequency

Double the frequency

4x as often

5. Conclusions & discussion

SUMMARY OF THE ANALYSES

- **Campaign** costs per dose could increase by 19%-174%, depending on the specific changes (PPE package provided, duration of the campaign, etc.)
- For **facility-based routine** delivery: labor costs, including hazard pay and hiring additional crowd controller personnel, account for approximately 95% of monthly recurrent costs (and 60–80% of all incremental costs)
  - Excluding these cost categories results in 12-month per-facility costs of $500–2,250 by scenario intensity
- Changes in the **outreach delivery costs** are highly dependent on the initial strategy: the volume delivered through outreach, session size and session frequency, remuneration for health workers specific to outreach
  - **PPE and IPC interventions** are the biggest driver of delivery cost increases in outreach
  - Outreach delivery costs in **rural areas** are high in the 'status quo', and the absolute USD change per dose is the largest here

Incremental costs for maintaining essential immunization services will vary by context, according to the strategy used, and by level of intensity – this requires country level determination

QUESTIONS FOR DISCUSSION

- How might you **use this information** in your program? Do these analyses give you the necessary budget information to support these increases?
- How are you thinking to **restart/enhance** your immunization services: through catch-up campaigns, additional outreach and/or strengthening routine?
- Would there be appetite for a **calculator tool** to evaluate the cost implications of alternative strategies and scenarios? Are you interested in piloting a calculator tool as we develop it?

CALCULATOR

Volume	Facilities	Children
Low vol	900	200
Med vol	400	500
High vol	200	2500
	1500	880,000

HZP	PPE
$36.20	$8.62
$44.25	$18.63
$64.36	$48.41

	INTENSITY	MONTHS
PPE	Low	6
Patient Intake	Low	6
Training	Low	na
Social Mobilization	Low	na
Hazard Pay	Low	2

Income Tier	LIC
Gavi group	Initial self-financing
Doses delivered	7,040,000

	Recurrent Labor	Recurrent Supplies	Fixed/ One-time	Total	Share
PPE		$149,326		$149,326	8%
Patient Intake	$1,086,022	$92,775	18600	$1,197,397	63%
Training			$131,334	$131,334	7%
Social Mobilization			$299,782	$299,782	16%
Hazard Pay	$126,300			$126,300	7%
TOTAL	**$1,212,322**	**$242,101**	**$449,716**	**$1,904,139**	
Cost per Child	$1.38	$0.28	$0.51	$2.16	
Cost per Dose	$0.17	$0.03	$0.06	$0.27	
Share	64%	13%	24%	100%	