

# Unlocking the Socioeconomic Benefits of Adult Respiratory Vaccinations in Mexico: The Case for Broader Prevention Strategies

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## INTRODUCTION

- Vaccine-preventable respiratory illnesses impose a substantial burden on Mexico's healthcare system and economy, with higher disease burden disproportionately impacting older adults<sup>1</sup>, and emerging evidence indicating that RSV not only affects infants, but also adults across all age groups<sup>2,3</sup>.
- Vaccination remains a cost-effective public health strategy against these burdens, proven to significantly reduce hospitalization rates and mortality due to respiratory diseases<sup>4-6</sup>.
- However, Mexico's current national immunization program (NIP) remains an underused tool to address this major public health challenge.
- Adult recommendations are restricted to COVID-19, influenza (Flu), and pneumococcal disease (PD) based on age or risk factors<sup>7</sup>.
- Coverage rates reported for all these publicly funded vaccinations were below international benchmark for influenza vaccinations<sup>8</sup>.
- The absence of recommendations for respiratory syncytial virus (RSV) and the suboptimal coverage rates represent critical missed opportunities to increase social welfare.
- This study estimates the socioeconomic value of existing adult respiratory vaccination programs in Mexico using a benefit-cost analysis (BCA):
  - Base Case: Age-based recommendations only
  - Expanded Base Case: Age-based and risk group recommendations. **(Current NIP in Mexico)**
- and explores hypothetical scenarios (Table 1 and Figure 1):
  - Scenario 1: Expanded program with RSV vaccinations
  - Scenario 2: Expanded program with RSV and aspirational coverage rates for all program

## METHODS

- We conducted a BCA from a societal perspective, with outcomes simulated using four disease-specific, multi-cohort models<sup>9-10</sup> across different time horizons.
- We model annual vaccination for COVID-19 and influenza and single-dose vaccination for RSV and PD, compared to a scenario of no vaccination.
- Benefits were considered across three domains, based on a framework by Robinson et al.<sup>11</sup>:
  - Mortality risk reduction: monetized either age-agnostic, based on the value of a statistical life (VSL)<sup>12</sup>, or, age-dependent, using the value of a statistical life year (VSLY).
  - Morbidity risk reductions: monetized using a cost-of-illness approach.
  - Productivity affects: monetised workdays missed due to respiratory disease using average wages and employment rates.
- All costs and monetized benefits were aggregated to generate net benefit (NB), and benefit-cost ratio (BCR) at 1-, 7-, 15-year and lifetime horizons. (Figure 2)

## RESULTS

FIGURE 2: NET BENEFITS AND BENEFIT-COST RATIOS OVER TIME (VSL)

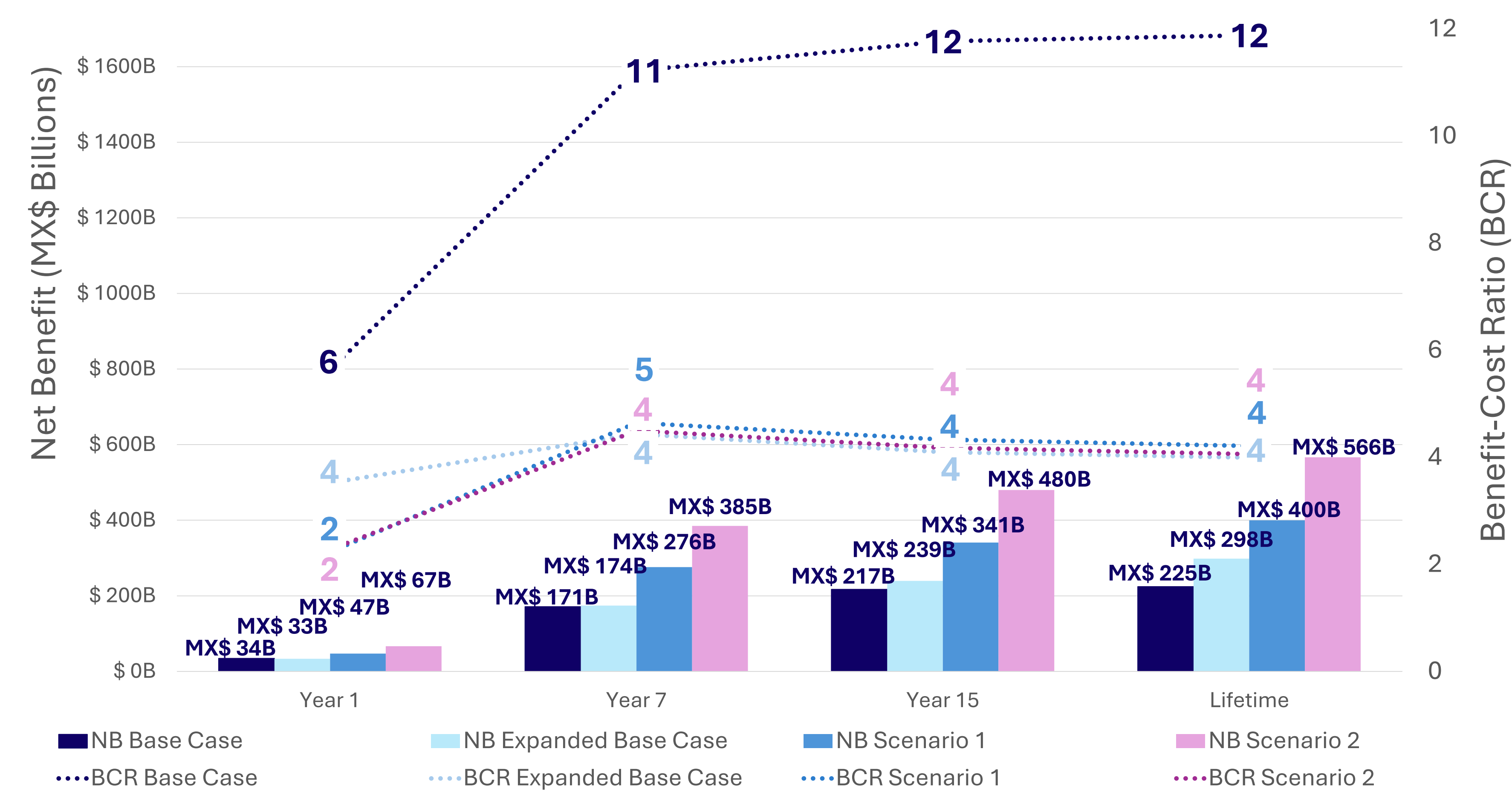
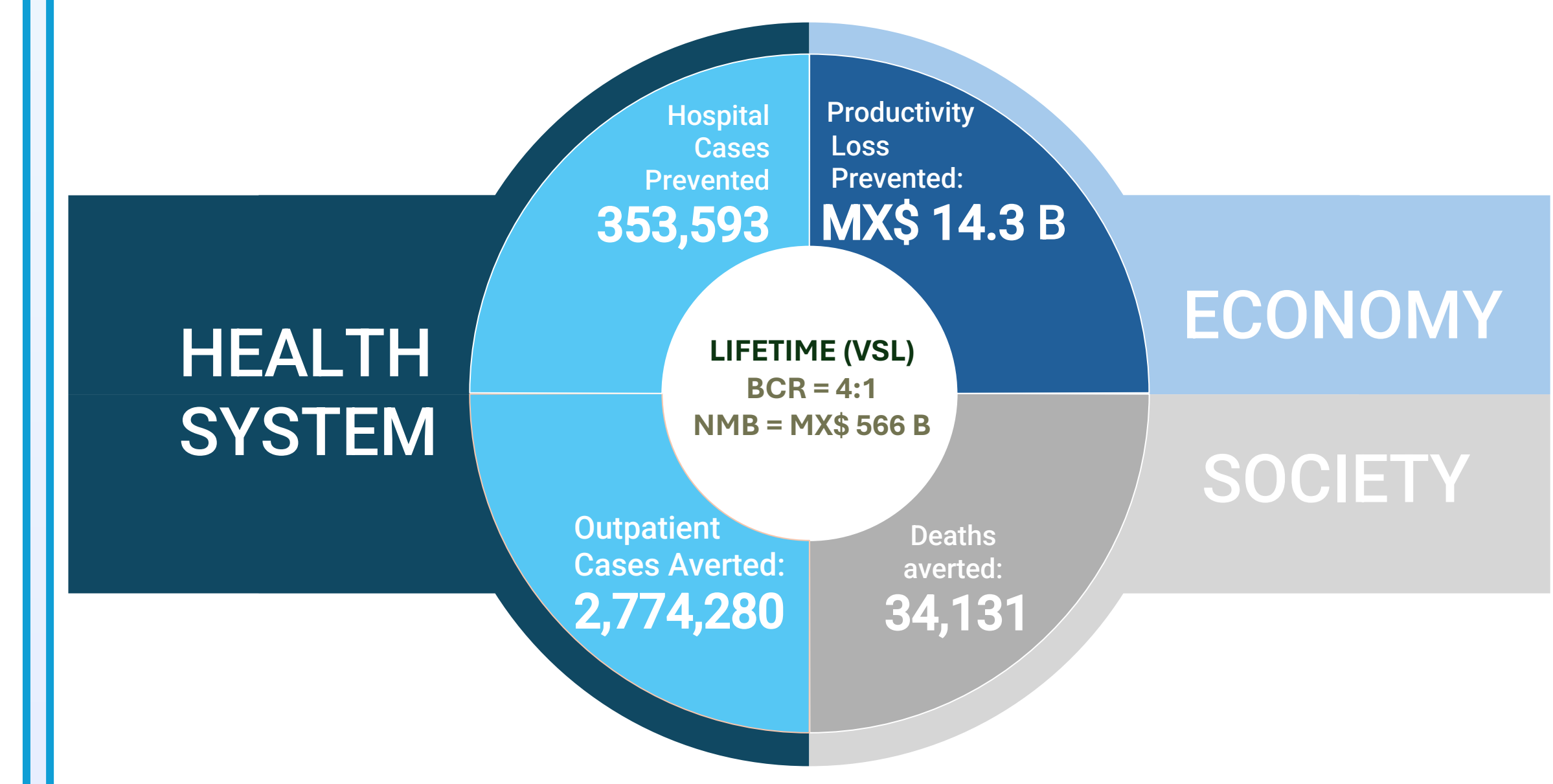


FIGURE 4: LIFETIME OUTCOMES OF SCENARIO 2



## CONCLUSION

- Current adult respiratory vaccination programs in Mexico provide substantial societal socioeconomic returns by averting health care costs, productivity losses and risk of premature deaths. Yet, they fall short of their potential.
- The inclusion of an adult RSV vaccination program into the NIP will further grow these benefits across the health system, the economy and the wider society.
- Reaching aspirational coverage within the existing vaccination programs against PD, Flu and COVID-19 present a key opportunity for national decision makers to increase the societal welfare.

## REFERENCES

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### Disclosures

This study was sponsored by Pfizer. TH, CFM, LH, DM, VG and ADB are employees of and may hold shares in Pfizer. SY, MN, ET, SB, and LS are employees of OHE which was contracted by Pfizer to conduct this study.

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FIGURE 1 : SCENARIO SPECIFICATIONS

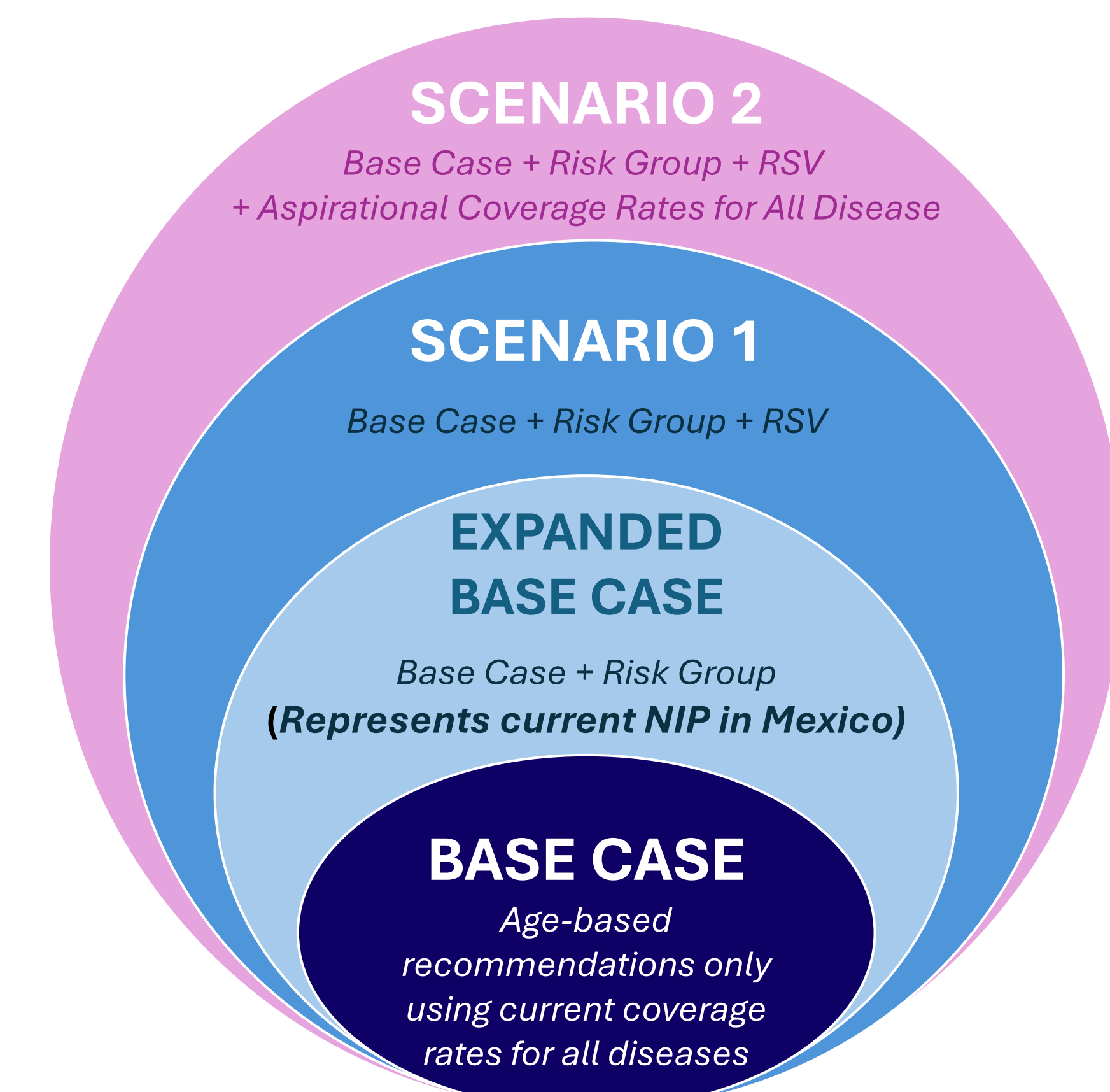


FIGURE 3: SUBOUTCOMES BY SCENARIOS OVER TIME

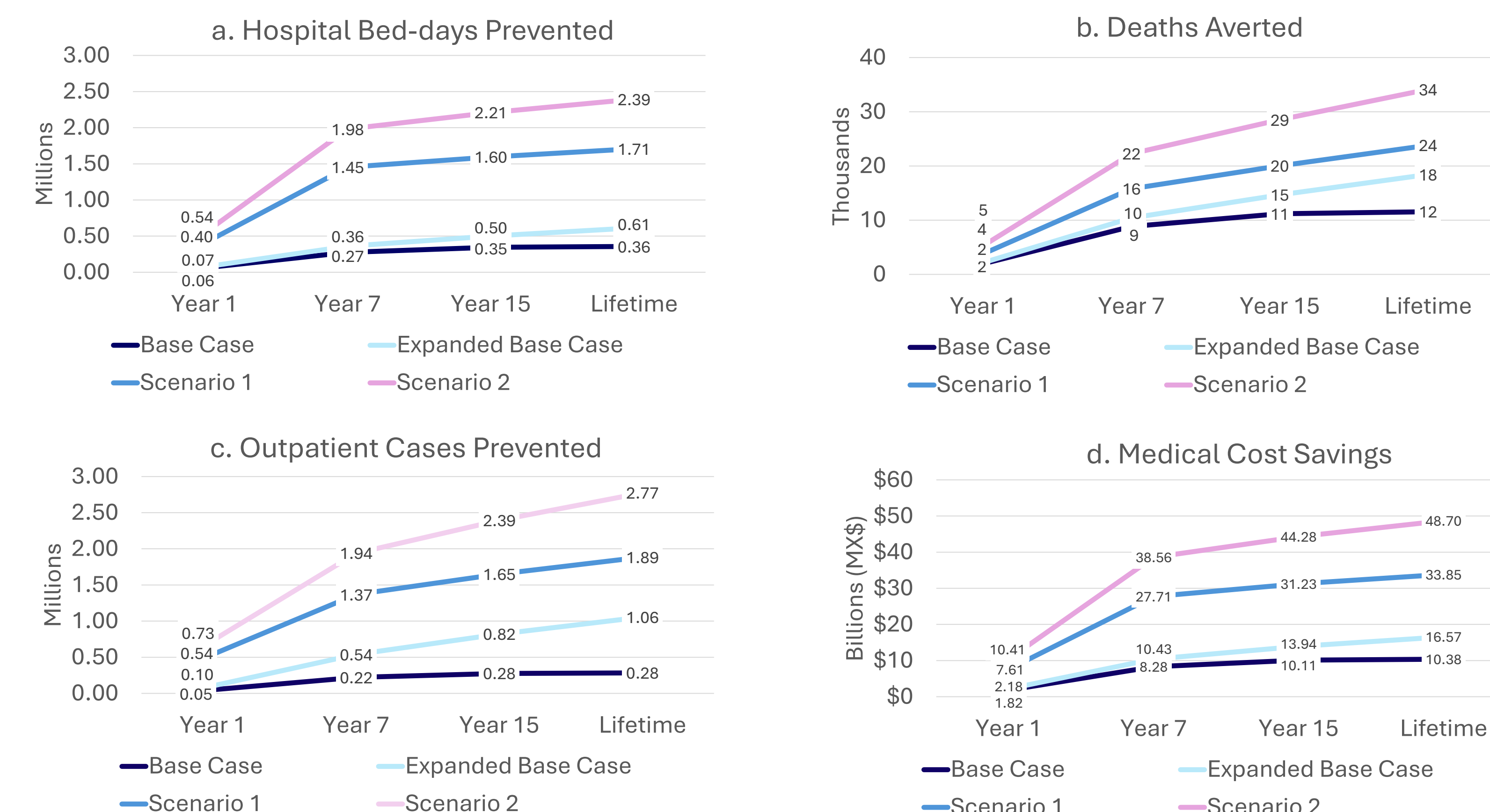


TABLE 1: VACCINATION AGE ELIGIBILITY AND COVERAGE RATES BASED ON SCENARIO

Program	Eligibility	BASE CASE		EXPANDED BASE CASE		SCENARIO 1		SCENARIO 2	
		Age-based	Risk Group	Age-based	Risk Group	Age-based	Risk Group	Age-based	Risk Group
PD	Eligibility	60+ <sup>7</sup>	-	60+ <sup>7</sup>	-	60+ <sup>7</sup>	-	60+ <sup>7</sup>	-
	Coverage	53.3% <sup>1</sup>	-	53.3% <sup>1</sup>	-	53.3% <sup>1</sup>	-	75%	-
INFLUENZA	Eligibility	60+ <sup>7</sup>	-	60+ <sup>7</sup>	18-59 <sup>7</sup>	60+ <sup>7</sup>	18-59 <sup>7</sup>	60+ <sup>7</sup>	18-59 <sup>7</sup>
	Coverage	62.4% <sup>13</sup>	-	62.4% <sup>13</sup>	56.0% <sup>13</sup>	62.4% <sup>13</sup>	56.0% <sup>13</sup>	75%	75%
COVID-19	Eligibility	60+ <sup>7</sup>	-	60+ <sup>7</sup>	18-59 <sup>7</sup>	60+ <sup>7</sup>	18-59 <sup>7</sup>	60+ <sup>7</sup>	18-59 <sup>7</sup>
	Coverage	43.8% <sup>14</sup>	-	43.8% <sup>14</sup>	43.8% <sup>14</sup>	43.8% <sup>14</sup>	43.8% <sup>14</sup>	75%	75%
RSV	Eligibility	-	-	-	-	60+* <sup>15</sup>	18-59* <sup>15</sup>	60+* <sup>15</sup>	18-59* <sup>15</sup>
	Coverage	-	-	-	-	57.7%** <sup>16</sup>	57.7%** <sup>16</sup>	75% <sup>16</sup>	75% <sup>16</sup>

\*Aspirational Eligibility \*\*Coverage Rates proxied using Flu and PD data