

# Enforcing India's Mandatory Industrial Trans-Fat Limit

## Health and Economic Gains

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### EXECUTIVE SUMMARY

India is facing an escalating cardiovascular crisis, with coronary heart disease (CHD) mortality more than doubling over the last three decades to exceed 1.2 million deaths annually. A major, preventable driver of this burden is the consumption of industrially produced trans-fatty acids (iTFA) found in vanaspati, bakery shortenings, and commercial frying fats.

While the Food Safety and Standards Authority of India (FSSAI) enacted a mandatory  $\leq 2\%$  iTFA limit in January 2022, empirical data on its long-term impacts has been scarce. This brief presents findings from a 20-year health economic model built using WHO-CHOICE standards. It reveals that rigorous enforcement of the existing policy can avert up to **354,000 deaths** and save the Indian healthcare system up to **₹0.9 lakh crore (INR 885 billion)**. Fully enforcing this regulation is one of the most cost-effective cardiovascular prevention interventions available to the country.

### 1 THE EPIDEMIOLOGICAL BURDEN



**18 MILLION**  
CVD deaths globally every year (leading cause)<sup>1</sup>



**75%**  
of CVD deaths occur in Low- and Middle-Income Countries<sup>2</sup>



**1.2 MILLION**  
CHD deaths annually in India<sup>3</sup>



CHD mortality in India has more than doubled in the last 30 years.<sup>1,2</sup>



### 2 THE HARM OF ITFAs

Industrially produced *trans*-fatty acids (ITFAs) are the most harmful dietary component.



↑ LDL cholesterol



↓ HDL cholesterol



Inflammation



Increased CHD risk



Harmful even at very low intake levels.<sup>4,5,6</sup>

### 3 WIDESPREAD EXPOSURE

- PHO-based vanaspati, bakery fats, and frying oils have been widely used across India.
- Low cost and long shelf life drove their widespread adoption.
- Urban poor and rural communities face the highest trans-fat exposure burden.<sup>7,8</sup>



### The Policy: FSSAI's Mandatory $\leq 2\%$ iTFA Limit

Aligning with the WHO REPLACE action package launched in 2018, India's Food Safety and Standards Authority of India (FSSAI) mandated a cap of  $\leq 2\%$  iTFA by weight in all fats, oils, and food products, effective **January 2022**.<sup>9,10</sup>

# INDIA'S POLICY RESPONSE: A TIMELINE

(Aligned with WHO REPLACE Framework)



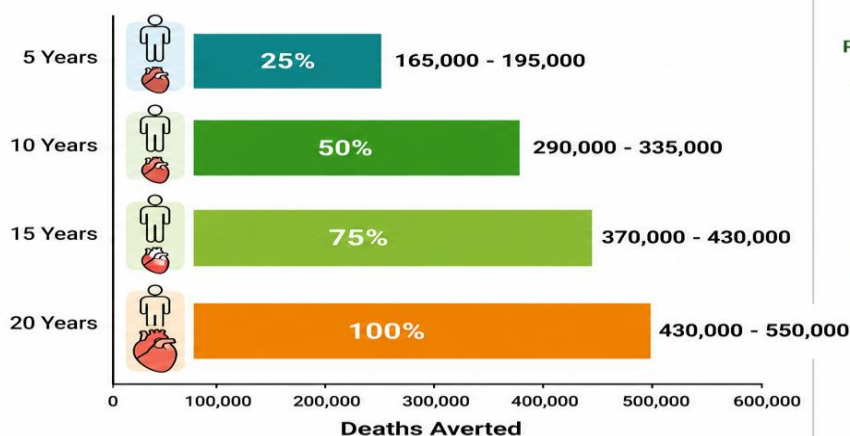
## Evidence: What the Modelling Shows

Population Attributable Fraction (PAF) approach embedded within the WHO-CHOICE framework, this modelling study compares outcomes under the current policy scenario against a counterfactual (no-policy) baseline using GBD 2019–2020 data for India.<sup>11</sup>

### Intake and risk reduction

- Pre-regulation iTFA consumption in India averaged approximately **1.5% of total energy (%E)**.<sup>12,13</sup>
- Post-regulation, assuming intake falls to **0.1% %E** (benchmark achieved by Denmark, Thailand, and the USA after bans),
- Anticipated reduction in intake is **1.4 percentage points**.<sup>14,15</sup>
- Based on a log-linear dose–response relationship ( $RR \approx 1.21$  per 2% %E increase in trans-fat),<sup>16</sup>

### A. Comprehensive CHD Deaths Averted



\*Detailed and discrete estimates are discounted by time-lag.

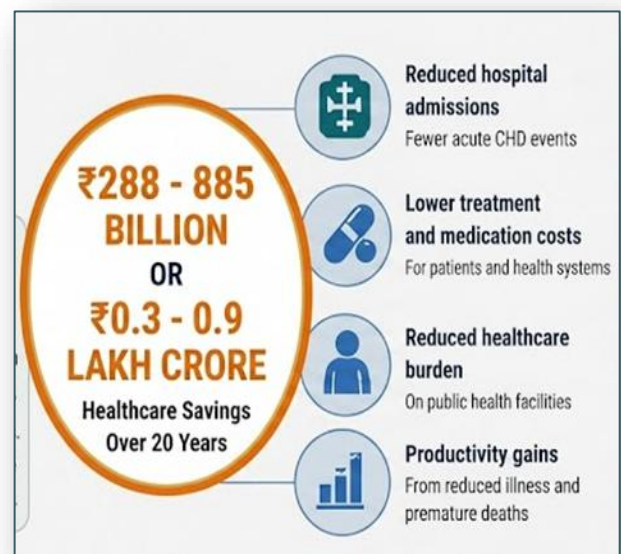
### B. Reduction in Population-Level CHD Risk





### Healthcare cost savings

- Using conservative estimates of **INR 150,000–250,000 per acute CHD event**,<sup>18,19</sup> the policy is projected to generate **INR 288–885 billion (₹0.3–0.9 lakh crore)** in direct healthcare cost savings over two decades.
- Excluding long-term medication, rehabilitation, outpatient follow-up, and productivity losses — meaning actual societal savings are likely substantially higher.<sup>20</sup>






### Equity: Who Benefits Most?



- Trans-fat exposure in India is disproportionately high among lower-income groups who depend on vanaspati, bakery fats, margarines, and street-food vendors for daily meals.<sup>21</sup>
- Analysis of oils used in LMIC informal food sectors confirms elevated iTFA levels in street-food supply chains.<sup>22</sup>

Structural food-environment regulations, like the FSSAI limit, are uniquely effective in this context — they reduce exposure without requiring individual behavior change, health literacy, or purchasing power, thereby directly protecting the most vulnerable populations.<sup>23</sup> This aligns with the WHO-REPLACE global best practice framework.<sup>24</sup>



KEY RECOMMENDATIONS FOR POLICY ACTORS			
1	<b>Strengthen enforcement</b>	Across formal and informal food sectors — particularly in vanaspati, bakery shortenings, frying oils, and street-food supply chains — through regular market sampling and laboratory surveillance.	 <p><b>Strengthen Market Surveillance:</b> Ensure compliance in informal sector through regular sampling and testing.</p>
2	<b>Support industry reformulation</b>	Especially for small and medium enterprises transitioning away from partially hydrogenated oils, through technical guidance and time-bound compliance support	 <p><b>Support Industry Transition:</b> Provide technical guidance to SMEs to move away from PHOs.</p>
3	<b>Expand post-regulation evaluation</b>	Dietary surveys, biomarker studies, and hospital data to document trends in iTFA intake and cardiovascular outcomes across states and population groups.	 <p><b>Enforce, Don't Just Enact:</b> Strictly monitor across all states to realize maximum 354,000 lives saved.</p>
4	<b>Integrate iTFA enforcement</b>	Broad NCD prevention strategies alongside salt, sugar, and edible oil quality policies for a coherent food systems approach.	

5	<b>Leverage the economic evidence</b>	<ul style="list-style-type: none"> <li>• Sustain political commitment and investment in regulatory monitoring</li> <li>• Projected ₹0.3–0.9 lakh crore in savings far exceeds implementation and enforcement costs.</li> </ul>
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India's FSSAI mandatory iTFA regulation is one of the most cost-effective CVD prevention interventions available to the Indian health system. Full and sustained implementation could avert up to **354,000 deaths** and save the health system up to **₹0.9 lakh crore** over 20 years. With CHD as the leading killer in India, this is a regulation that must be enforced — not just enacted.



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