

Quantifying the Societal Value: Reduced Burden and Resource Savings from Baloxavir Marboxil's Influenza Transmission Protection in China

Acceptance code
EE631

T. LIU¹, Y. XIA¹

¹Value Evidence, National Market Access Dept, Shanghai Roche Pharmaceuticals Ltd., Shanghai, China

BACKGROUND

- Influenza** represents a significant global public health challenge, imposing a considerable economic burden on patients, families, and society.
- Randomized controlled trials have demonstrated that **Baloxavir Marboxil (BXM)** effectively interrupts influenza transmission.

OBJECTIVE

This study quantified the societal value of BXM in China by estimating reductions in disease burden, healthcare resource utilization, and associated economic benefits arising from its transmission-blocking effects.

METHODS

- Synthesized data from: published studies on influenza disease burden, **Chinese influenza transmission model**, and local Chinese data on outpatient/emergency treatment costs and hospitalization rates.

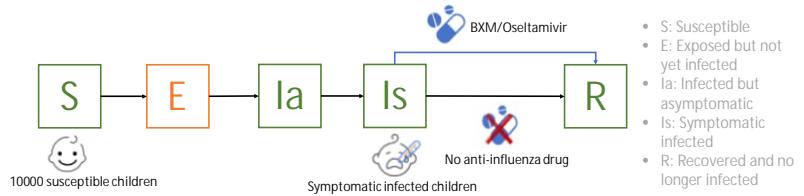


Fig 1. An Extended Dynamic Transmission Model

- The analysis conducted across three population groups: pediatric patients, otherwise healthy adults, and the elderly, due to different transmission protection effect and hospitalization cost, focusing on influenza cases averted, reductions in healthcare resource utilization, and avoided productivity losses.

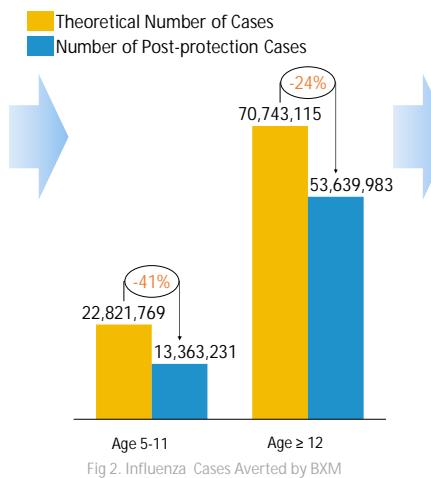
RESULTS

Tab 1. Epidemiology and cost parameters

Parameters	Value	
	Age: 5-11	Age: ≥ 12
Incidence Rate ¹	18.7%	5.5%
BXM Protection Rate for Healthy Population ²⁻³	46.17%	18.9%
Actual Protection Rate considering the actual drugs usage (treatment rate * market share)	41.4%	24.2%
Post-protection Incidence Rate (Calculated based on incidence rate and actual protection rate)	10.9%	4.2%
Family Caregiving for Children with Influenza (day/person) ⁴	1.8	-
Productivity Loss due to Family (CNY/person) ⁴	187	-
Cost influenza medication (CNY) Assuming oseltamivir and BXM each account for 50%	156	
Cost per Outpatient Visit (CNY) ⁵	768 ~ 999.9, Average 883.5	
Cost per Hospitalization (CNY) ⁵	9,832 (General Adult), 16,799.5 (Aged ≥ 60)	
Hospitalization rate, outpatient rate and excess deaths are calculated based on the estimated number of cases in the published national disease burden estimation. ⁶		

- External validation:** The estimated theoretical cases number in the model was consistent with the published national epidemiology study (111 million in the model vs 114 million in the national survey ⁵)

- Averted cases:** Compared to a scenario where influenza patients received only oseltamivir, assuming 50% of treated patients received BXM, its use reduced transmission across all age groups, **BXM use was estimated to avert 26.56 million influenza cases.**



- Assumed these averted cases would have received antiviral treatment:
- Hospitalization savings occurred primarily in the elderly population, accounting for 77% of the total savings.**

Tab 2. Direct Health and Economic Benefits of BXM

	Averted Cases	Cost Savings (CNY)
Influenza Medication	-	4.14 billion
Outpatient / Emergency Visits	719,096	0.64 billion
Hospitalization	561,421	8.10 billion
Hospitalization (Aged ≥ 60)	370,538	6.22 billion
Influenza-associated Excess Deaths	22,040	-

Tab 3. Indirect Economic Benefits Related to Caregiving from BXM

	Reduction Value
Reduced Family Caregiving Time (d)	17,025,367
Productivity Losses Due to Caregiver Absenteeism (CNY)	3.18 billion

CONCLUSIONS

Baloxavir Marboxil significantly interrupts influenza transmission, leading to substantial reductions in influenza cases, healthcare resource utilization, and influenza-associated excess mortality.

These reductions translate into considerable economic and societal benefits, indicating Baloxavir Marboxil's value as a public health intervention in China.

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CONTACT INFORMATION

Email: Tianyi.liu.tl1@roche.com