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Targeted Influenza Vaccination in at Risk Populations – How Avoided Cases Translate into Clinical and Economic Benefits for Czech Republic, Hungary, and Romania

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BACKGROUND

- Influenza is one of the leading respiratory causes of clinical and economical burden from a public health perspective[1]
- Despite multiple efforts to quantify the benefits of vaccination in high-income European settings, research on Eastern European countries remain modest, and data availability and quality of surveillance systems highly heterogeneous[1]
- The World Health Organization(WHO) has urged European countries to reach 75% influenza vaccination coverage rates (VCR) in vulnerable populations at high-risk of severe disease: older adults, patients with comorbidities [PwC], children aged 6-24 months, healthcare workers [HCW] and pregnant women [PW][2]

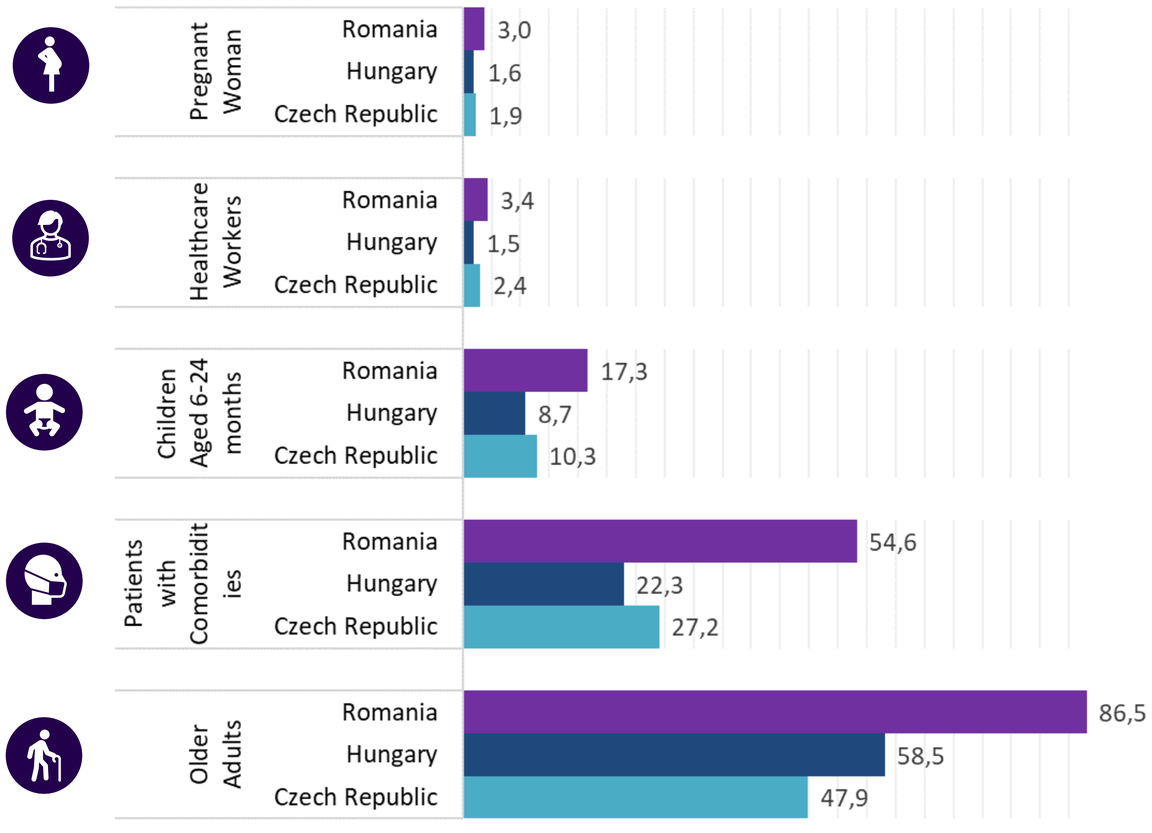
OBJECTIVE

To assess the additional clinical and economical benefits of reaching the WHO recommended 75% VCR in vulnerable populations in three selected Eastern European countries: Czech Republic (CZ), Hungary (HU) and Romania (RO).

Results

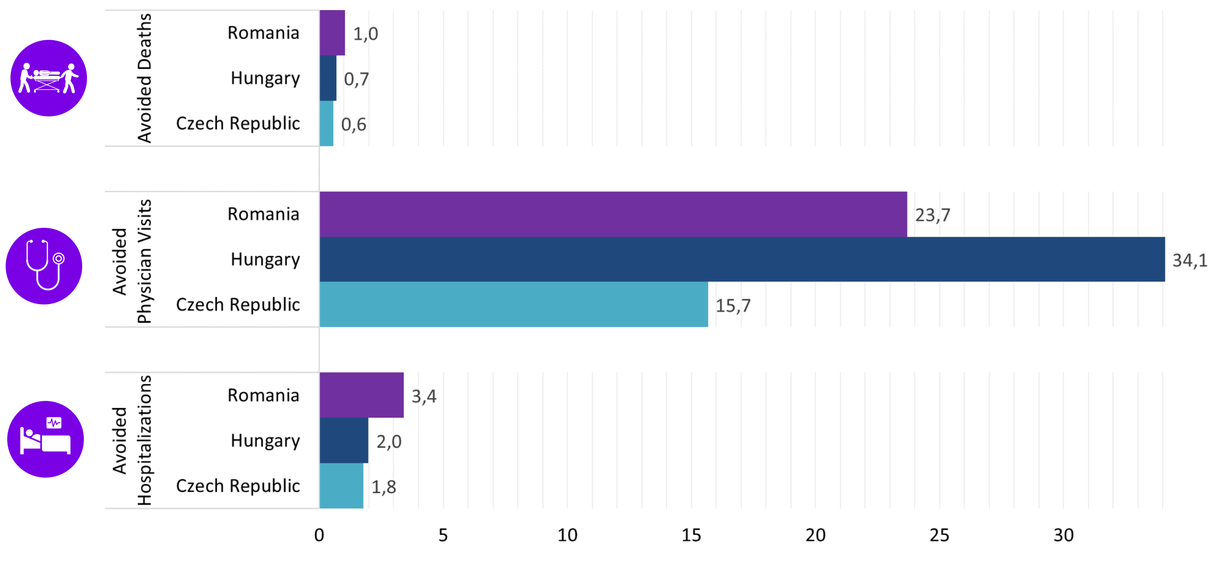
- Country-average observed VCR were 22.4%, 20.27%, 1.5%, 19% and 1.83% for older adults, PwC, children, HCW, and PW (*table 1*).
- Older adults consistently displayed the highest clinical benefit of reaching 75% VCR (47.9K up to 86.5K additional averted influenza cases for CZ and RO, respectively), followed by PwC and children (*figure 1*)

Figure 1: Additional Avoided Cases by Reaching 75% VCR by Country and Vulnerable Population (thousands)



- Additional averted hospitalizations and physician visits ranged from 1.8K for CZ up to 3.4K for RO, and 15.7K for CZ up to 34.1K for HU, respectively. 0.6K (CZ) to 1K (RO) deaths can be avoided, mean 93% of them occurring in older adults (*figure 2*).

Figure 2: Additional Avoided Hospitalizations, Physician Visits and Deaths by Reaching 75% VCR by Country (thousands)



METHODS

- A decision analytic model, capturing 2021/2022 epidemiologic inputs (for each subgroup: eligible population, VCR, influenza attack rates, quadrivalent influenza vaccine efficacy) and 2022 costs expressed in euros (direct medical costs of influenza-related physician consultations and hospitalizations) was built.
- For selected countries, a one-year comparison between observed VCR and a 75% VCR case in terms of influenza cases avoided and avoided costs informed the potential benefits of reaching the WHO recommendation.
- Local inputs and robust, published sources were prioritized.

Table 1: 2021/2022 Vaccination Coverage Rates by Country and Risk Population

	Older Adults	PwC	Children Aged 6-24 months	HCW	PW
Czech Republic	23,9%	24,8%	1%	7%	2%
Hungary	22,3%	20%	2,5%	30%	1,5%
Romania	21%	16%	1%	20%	2%
Average	**22,4%**	**20,27%**	**1,5%**	**19%**	**1,83%**

**VCR in children aged-24 months represent mostly conservative assumptions due to missing data*

Results (cont.)

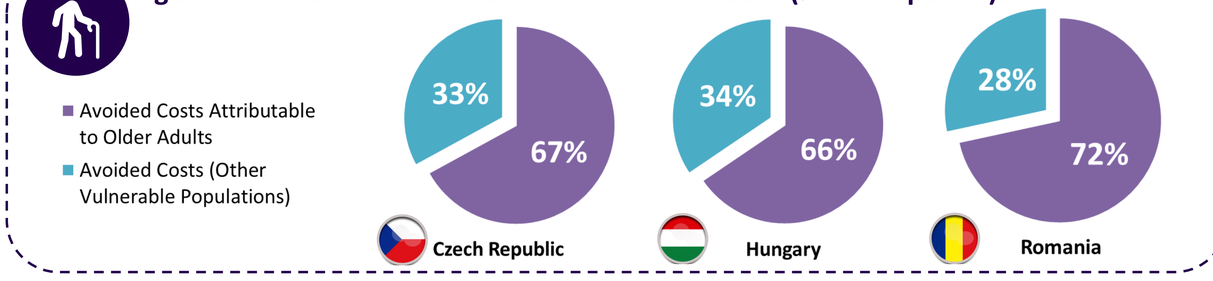
- Averted influenza cases translate into total additional savings of 1.3K € for HU, 1.9K € for CZ and 2.9K € for RO in costs; hospitalizations average 68% (49%[HU] to 81%[RO]) of those spared monetary resources (disaggregated results in *table 2*)

Table 2: Avoided Costs by Reaching 75% VCR by Country and Vulnerable Population (thousands)

		Czech Republic	Hungary	Romania
Physician Visits	Older Adults	12.3 €	14.0 €	8.2 €
	PwC	16.4 €	15.6 €	10.8 €
	Children Aged 6-24 months	14.2 €	16.1 €	74.8 €
	HCW	297.7 €	312.7 €	257.2 €
	PW	178.2 €	287.6 €	194.3 €
	Total	518.8 € *(28%)*	646.0 € *(51%)*	545.3 € *(19%)*
Hospitalizations	Older Adults	2.8 €	956.0 €	4.3 €
	PwC	7.8 €	1,681 €	10.1 €
	Children Aged 6-24 months	13.1 €	4.8 €	21.1 €
	HCW	250.9 €	71.6 €	445.1 €
	PW	1’072.5 €	543.5 €	1’902.9 €
	Total	1’347.0 € *(72%)*	622.5 € *(49%)*	2’383.4 € *(81%)*

- The highest attributable economic benefits, in terms of averted costs, can be achieved by influenza immunization of older adults (*figure 3*)

Figure 3: Avoided Costs Attributable to Older Adults (% Participation)



CONCLUSIONS

- **A punctual objective to increase VCR up to 75% in vulnerable populations can avert influenza cases and its related clinical and economic consequences, reducing the burden of disease for CZ, HU and RO**
- **Older adults will mostly benefit from such a policy, future research focused on enhanced influenza vaccines for this population might accentuate the importance of these findings.**

REFERENCES:
1. Kovács G, Kaló Z et al. Medical and economic burden of influenza in the elderly population in central and eastern European countries. Hum Vaccin Immunother 2014; 10(2)
2. Rizzo C, Rezza G et al. Strategies in recommending influenza vaccination in Europe and US. Hum Vaccin Ummunother 2018; 14(3)

CONFLICTS OF INTEREST:
Baptiste Fraisier & Jose Bartelt-Hofer: Sanofi — employee, may hold stock and/or stock options in the company.

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