

**Centre hospitalier** universitaire vaudois

## Implementation of a societal cost-effective model of a Swiss canton school vaccination campaign through a hospital pharmacy logistics platform

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### Introduction

The Public Health Service of canton of Vaud (PHSCV) is increasingly confronted with supply disruptions involving school vaccination program. In order to avoid vaccination coverage breakdowns, all vaccination recommendations (i.e. dT, dT-IPV, dTpa, dTpa-IPV, HB, HPV and MMR) were supplied by the hospital pharmacy logistics unit (HPLU).

### Conclusion

A HPLU circumvents supply shortage by reserving the doses of vaccine and thus guarantees the school vaccination coverage through a cost effective model (Fig.2). Given this, it has been decided to continue and to sign a convention between the PHSCV and the **Hospital Service of Pharmacy.** 



# Aim

The aim was to establish if this supply model is costeffective compared to a traditional supply.

## Methods

All costs of different transport modes were taken into account (2014-2015 vs 2015-2016). Incidence and costs of disease management were included to highlight the dominant strategy.

A failure mode and effects analysis (FMEA) on the two transport systems (i.e. good distribution practice (GDP) supplier VS the free of charge post system) as well as on the school establishments' fridges have been carried out.

# **Results & Discussions**

During 2015-2016, 18'430 doses were delivered (Fig.1) and no disruption was recorded compared to one major shortage of dTpa-IPV in 2014. Logistics costs were

- CHF 5'832 (GDP supplier costs) and
- CHF 46'074 (HPLU costs)

The HPLU avoided :

- new cases of recorded diphtheria (12 cases at CHF) 68,000 / case),
- hepatitis B (195 cases at CHF 97,000 / case) measles (16 cases at CHF 15'000 / case).

Canton of Vaud

Switzerland

Fig. 1 Supply chain for the canton of Vaud (3212 km<sup>2</sup>) for the 81 schools



No cases of poliomyelitis, rubella and tetanus were reported. Mumps, pertusis and human papillomavirus are not subject to declaration.

Without taking into account a case of poliomyelitis or human papillomavirus, the model avoids relative costs of CHF 89,993 per new case.

The FMEA showed no increased risk even though the fridges (83.6%) are not of pharmaceutical quality.

# Références

- Data of public health service of canton of Vaud
- Data of federal office of public health
- Data of the center university hospital of Vaud

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### Fig. 2: Process of the supply chain in accordance with GDP

