READY-TO-USE PROPOFOL SYRINGES: PHARMACOECONOMIC MODELISATION OF THEIR POTENTIAL TO REDUCE PRIMARY BACTERAEMIA IN CRITICALLY ILL PATIENTS.

Jean-Christophe Devaud*[1, 2], Philippe P. Eggimann[3], Pierre Voirol[1, 2], Philippe Jolliet[3], Christophe Pinget[4], Jean-Blaise Wasserfallen[4], André Pannatier[2], Farshid Sadeghipour[1, 2].

[1]Pharmacy, CHUV, Lausanne, [2]School of Pharmaceutical Sciences, University of Geneva and University of Lausanne, Geneva, [3]Service of Adult Intensive Care Medicine & Burns, [4]Health Technology Assessment Unit, CHUV, Lausanne, Switzerland.

Background & Objectives

Propofol infusions, commonly used for continuous sedation in intensive care units (ICU), are formulated in lipid emulsion which contributes to microbial growth. They **may be responsible for nosocomial primary bloodstream infections (BSI). Bedside-made syringes of propofol are much less expensive than ready-to-use syringes** provided by the manufacturers, and are currently widely used in intensive care units.
We aimed at identifying the probabilities and potential costs of contaminated syringes of propofol in critically ill patients according to specific modes of preparation and administration on the ward.

Methods:

Rate of propofol-related BSI based on different modes of administration was computed according to data from the literature. The additional length of ICU stay due to BSI, related to different modes of administration was estimated using the disability model. The cost of each strategy was estimated using microcosting methods.

Results:

We determined that the risk of developing a genotyped-proven BSI from a contaminated propofol preparation was 22.6% (95% CI [-29.16; 74.36]). We found that ready-to-use syringes and syringes drawn from vials have an infection probability of 0.0014 [95% IC: 0.0009 – 0.0038] and 0.0118 [95% IC: 0.0056 – 0.0181], respectively. The additional length of ICU stay was estimated to be between 5.3 and 11.4 days.
According to the cost-analysis, ready-to-use syringes of propofol saved money by decreasing the cost per sedation sequence administration by at least CHF 267 per patient. Sensitivity-analysis showed that ready-to-use syringes remained a cost saving strategy.

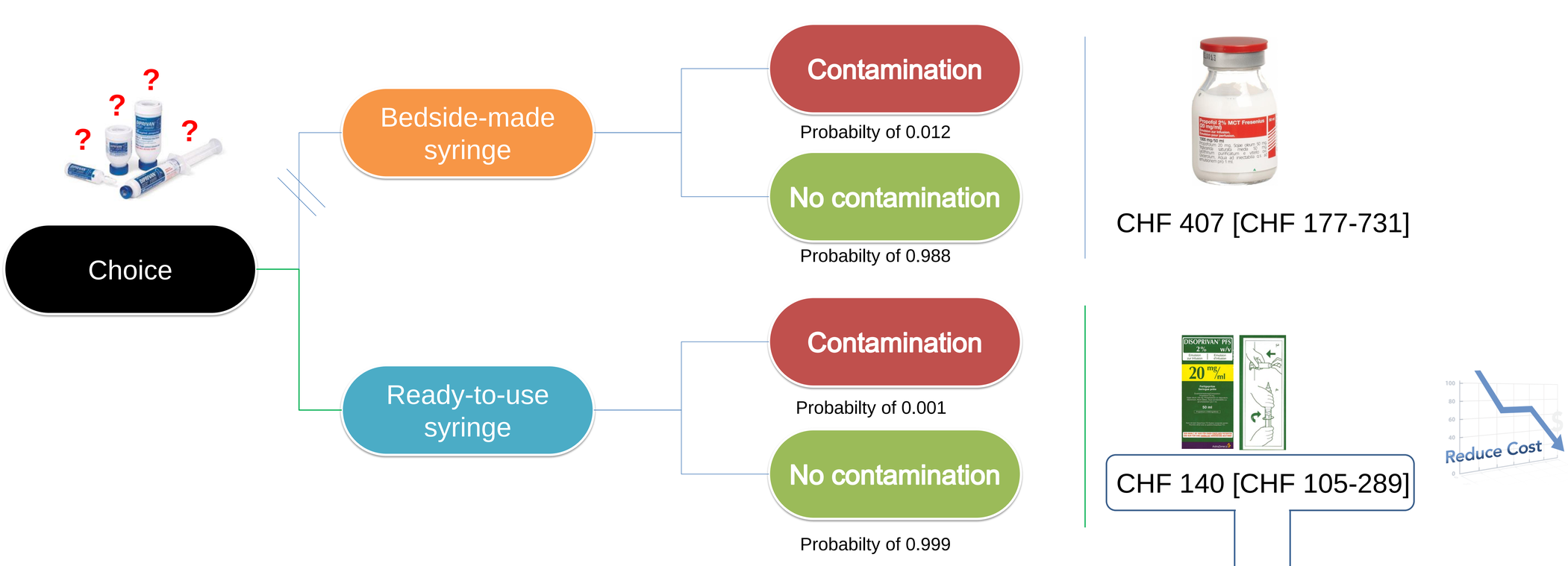

Fig. 1: Results of the decision analysis tree with the detailed costs

Antibiotherapy + Syringe of propofol's cost + Length of stay + Probability of infection

Discussion:

Our analysis suggests that compared to a bedside-made solution, ready-to-use syringes of propofol saves money despite a higher a priori cost by preventing major propofol administration-related infections.

References:

1. Muller A et Al. (2010) Outbreak of severe sepsis due to contaminated propofol: lessons to learn. Journal of Hospital Infection 76 (3):225-230,2. Bennett SN et Al. (1995) Postoperative infections traced to contamination of an intravenous anesthetic, propofol. New England journal of medicine 333 (3):147-154 Disclosure of Interest: None Declared

Contact: Jean-Christophe.Devaud@chuv.ch

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