



# Chemical contamination during preparation of chemotherapies: overview in Swiss hospital pharmacies

M. Mattiuzzo, S. Nussbaumer, F. Sadeghipour, S. Fleury-Souverain, P. Bonnabry  
Pharmacie des Hôpitaux universitaires de Genève

1<sup>er</sup> Congrès Suisse des Pharmaciens  
Interlaken, 30 novembre – 1<sup>er</sup> décembre 2011



# Objective

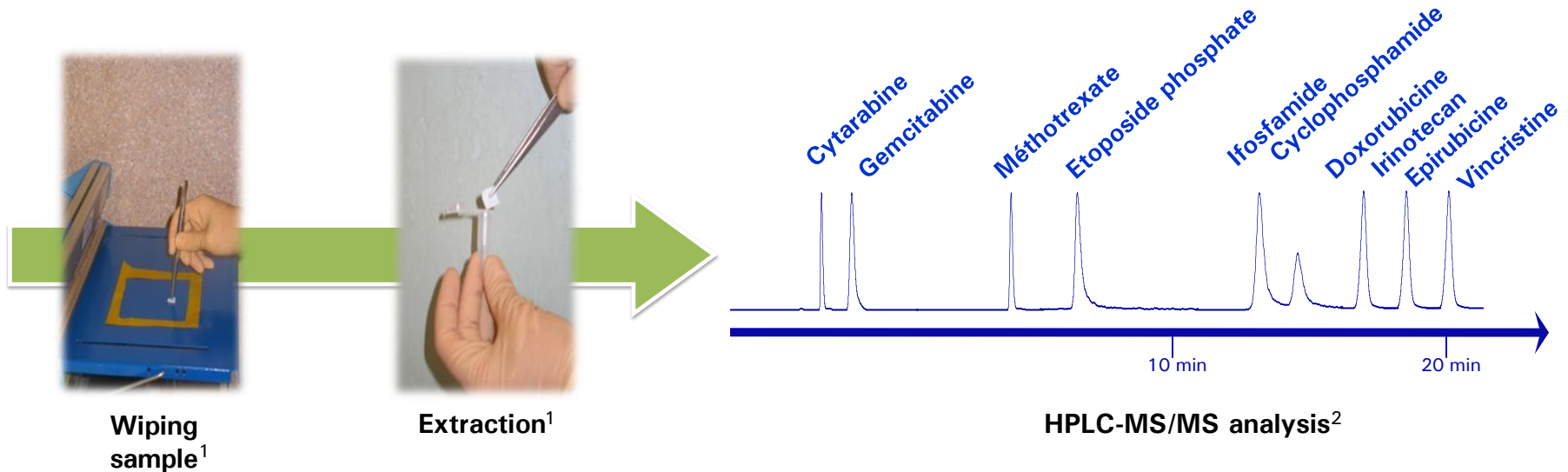
---

To evaluate chemical contamination of the working environment by cytotoxic compounds in Swiss hospital pharmacies.



# Method

Search for traces of 10 cytotoxic drugs on surfaces in Swiss hospital pharmacies, with analysis of wiping samples by a validated method (LC-MS/MS).



1. Nussbaumer S. et al. Anal. Bioanal. Chem. (2011) sous presse.
2. Nussbaumer S. et al. Anal. Bioanal. Chem. (2010) 398:3033-42.



# Total contamination per hospital

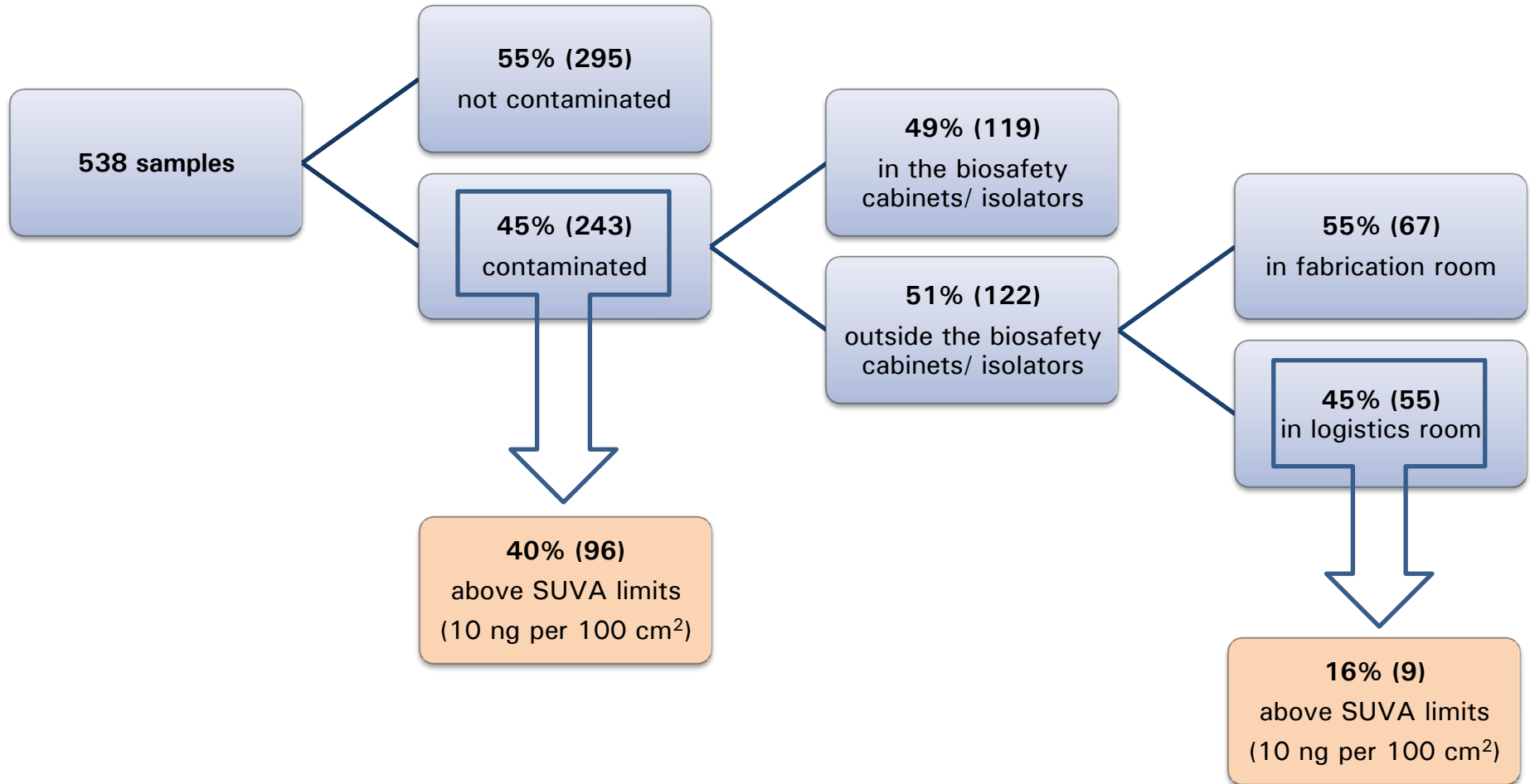
Rank	Total contamination (ng)	Number of samples
1	0	21
2	0	21
3	8	21
4	12	17
5	22	21
6	25	26
7	31	20
8	33	12
8	40	22
10	47	21
11	61	21
12	65	20

Rank	Total contamination (ng)	Number of samples
13	72	23
14	150	21
15	236	25
16	313	25
17	376	26
18	518	21
19	528	25
20	946	30
21	1'624	18
22	2'254	29
23	6'261	29
24	41'438	21

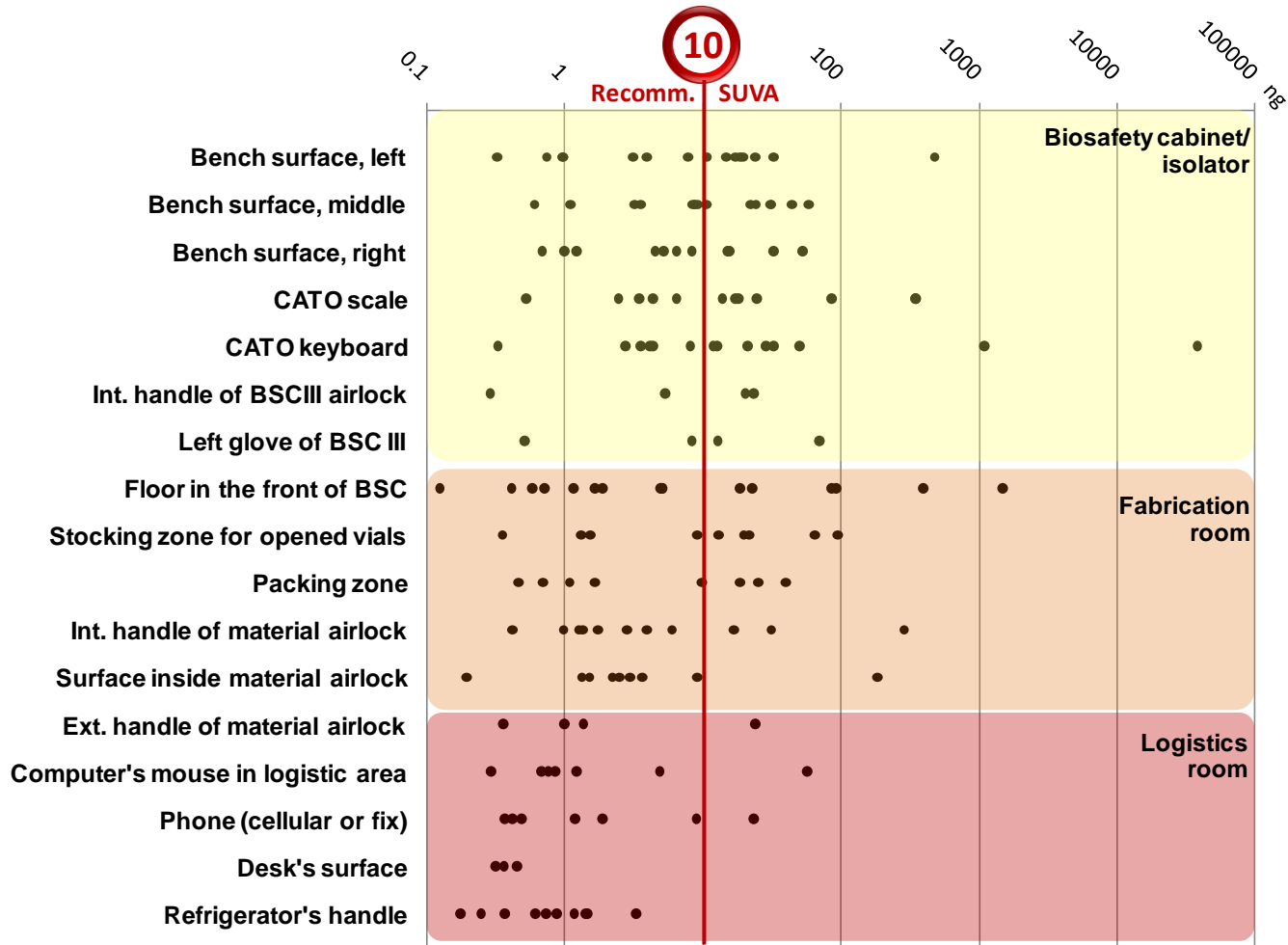
- 24 hospital pharmacies in Switzerland (out of 46 contacted, 52%)
- Median total contamination: 69 ng per hospital



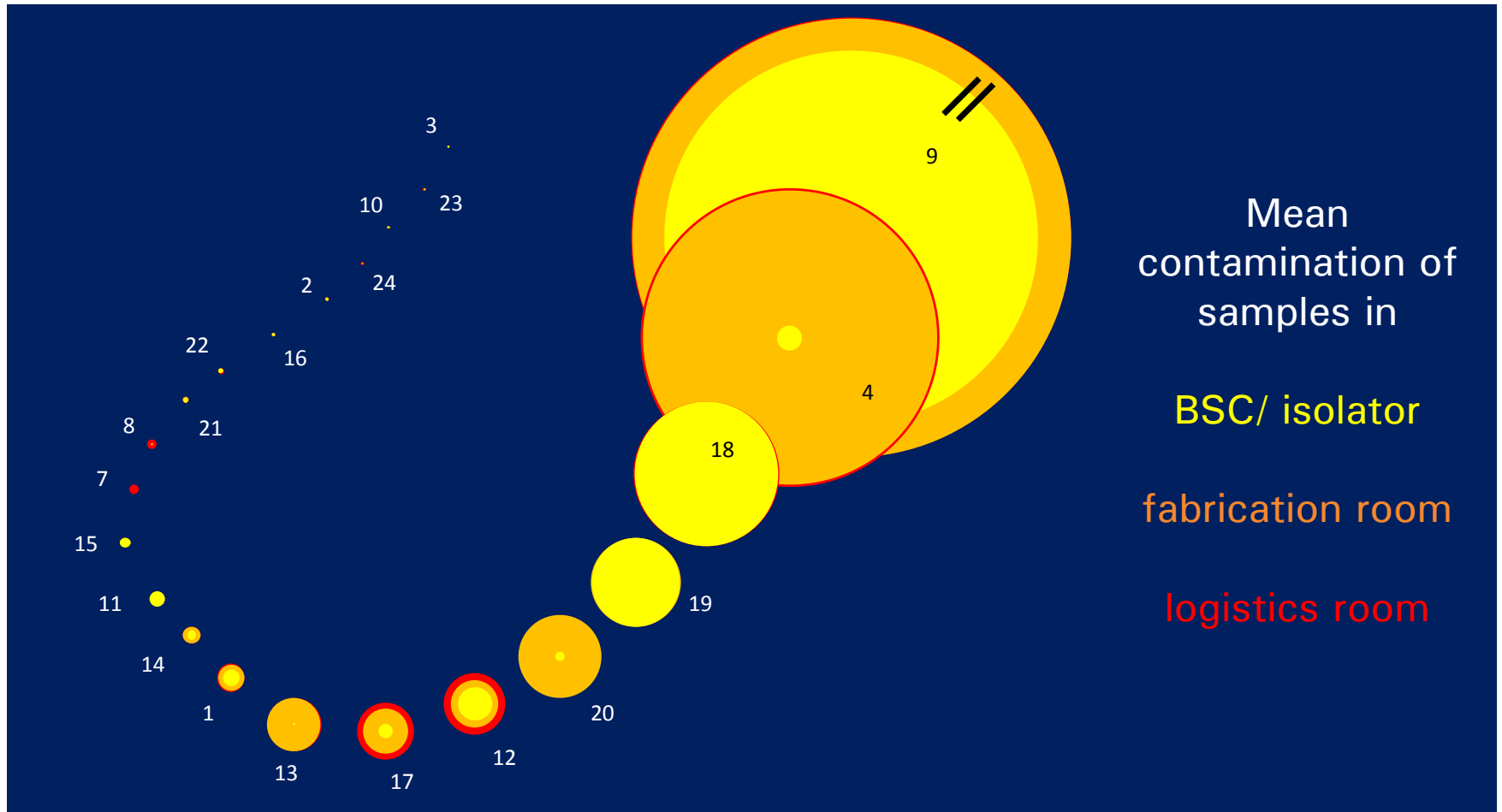
# Results: distribution I



# Results: distribution II



# Hospitals global contamination



# Conclusion

---



**Absence of contamination in 2 hospitals**



**High contamination rates confined in fabrication areas (biosafety cabinets/ isolators)**



**Positive samples in logistics rooms**





# Perspectives

---

- Pharmacies will receive their individual results soon
- Statistical treatment of results in progress to identify and suggest potential corrective measures



# Acknowledgment

Dr Susanne Nussbaumer  
Dr Sandrine Fleury-Souverain  
Prof. Pascal Bonnabry



Swiss Association of Public Health  
Administration and Hospital  
Pharmacists

Swiss Center for Applied  
Human Toxicology



All voluntary hospital  
pharmacies





**Thank you  
for your attention!**

