

# INNOVATIVE MEASURES FOR REDUCTION OF SURFACE CONTAMINATION BY ANTINEOPLASTIC AGENTS AT OUTPATIENT CLINIC IN MASARYK MEMORIAL CANCER INSTITUTE, BRNO, CZECH REPUBLIC

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[www.cytostatika.cz](http://www.cytostatika.cz)

# Outpatient clinic



application-room

Every day:

- 60 patients
- 200-250 chemo-application



waiting-room



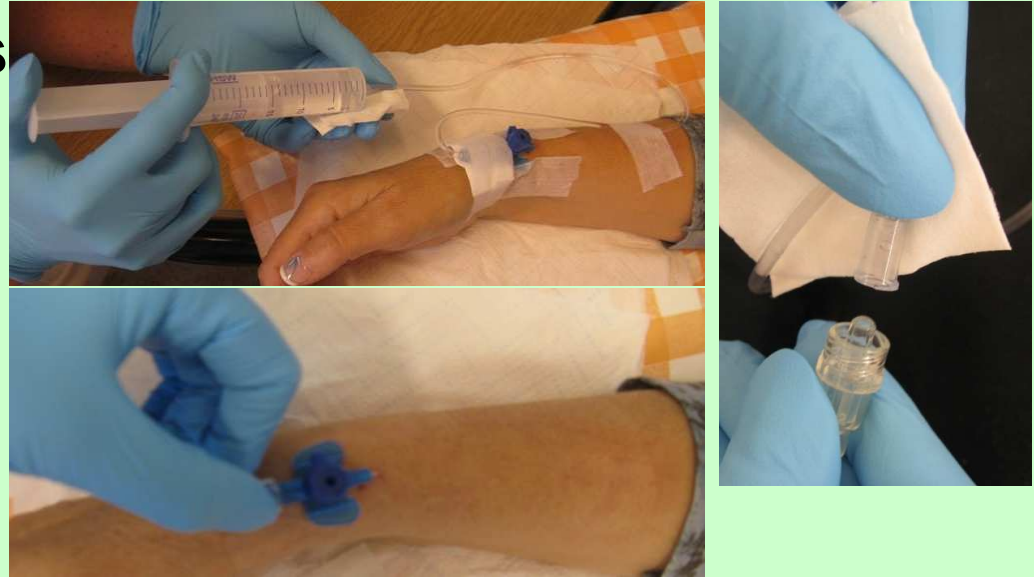




# Main sources of contamination at outpatient clinic

## ➤ open handling with ADs

- ending of administration
- disconnection from the cannula
- administration iv.bolus
- manipulation with chemo-waste
- disposal of accident



## ➤ urination of unmetabolised ADs by oncology patients

- oncology patient is a significant source of ADs contamination



# Cyclophosphamide and platin derivates – markers of contamination

- Wipe samples of working environment
- Area 900cm<sup>2</sup> (30x30cm)
- Extraction in water solution

Assesment:

- ❑ cyclophosphamide: **HPLC/MS** (2,5 ng/sample)



- ❑ platin derivates **ICP/MS** (1 ng/sample)

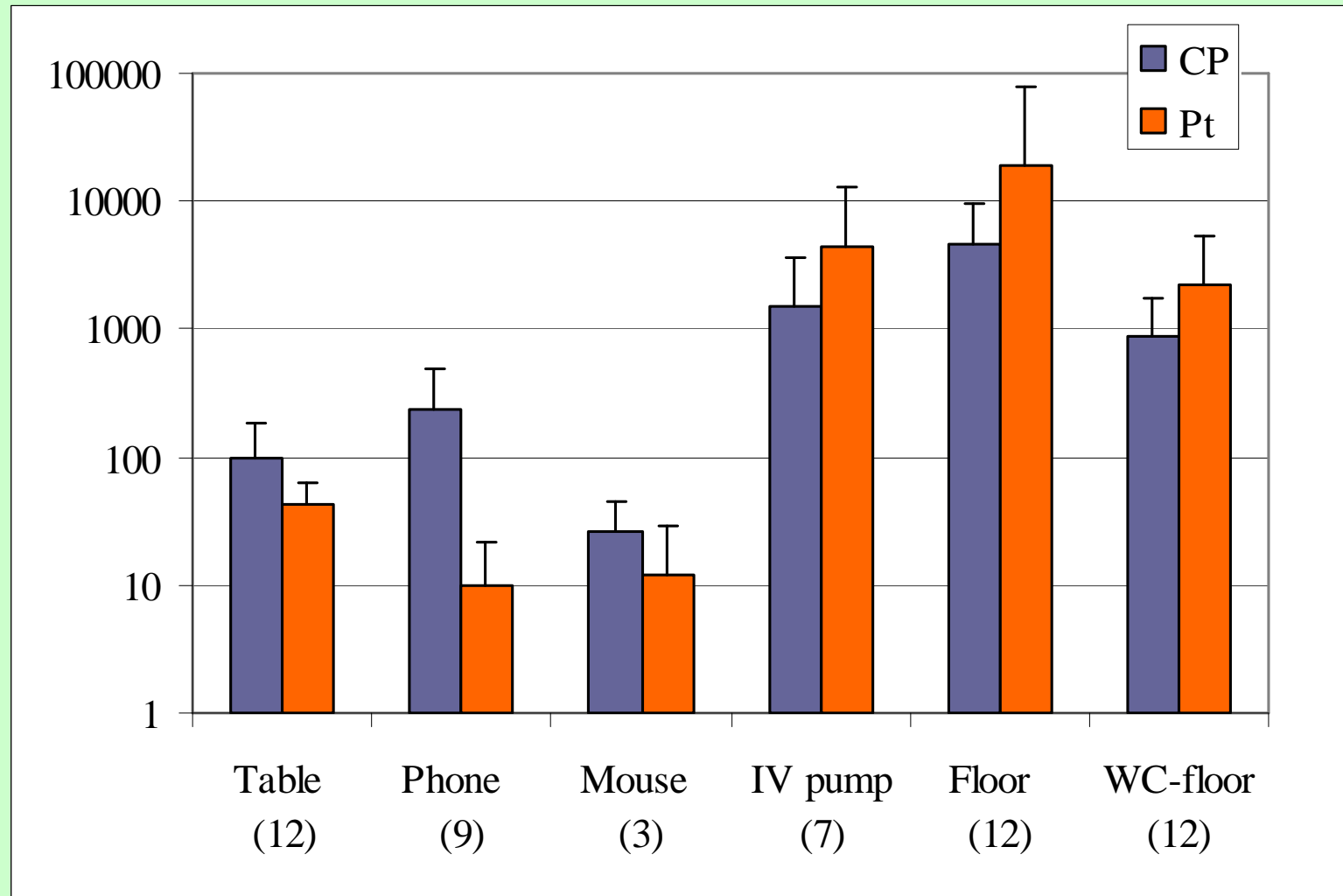


# Collection of samples - monitored places

- Working table where are checked prepared ADs (30 x 30 cm)
- Floor under the infusion stand (30 x 30 cm)
- Floor at toilet used by oncology patients (30 x 30 cm)
- Display on infusion pump (12 x 18 cm)
- Phone receiver (125 cm<sup>2</sup>)



# Contamination at outpatient clinic (pg/cm<sup>2</sup>)





# Innovative technical safety measures

## 1. Wall-mounted i.v. stands

- ☺ Enabling appropriate and regular cleaning of the floor
- ☺ Avoiding contamination cumulation on the floor
- ☺ Practical for drugs administration



# Innovative technical safety measures

## 2. Multichannel sets

- ☺ Successive connection of infusion bags on the central line – empty bags are not disconnected – elimination of source of exposure – no exposure for nurses
- ☺ Final rinsing of the central line by neutral solution
- ☺ Disposal „of whole set“ – nothing is disconnected



# Innovative technical safety measures

## 3. Toilets with self cleaning seats + patients education

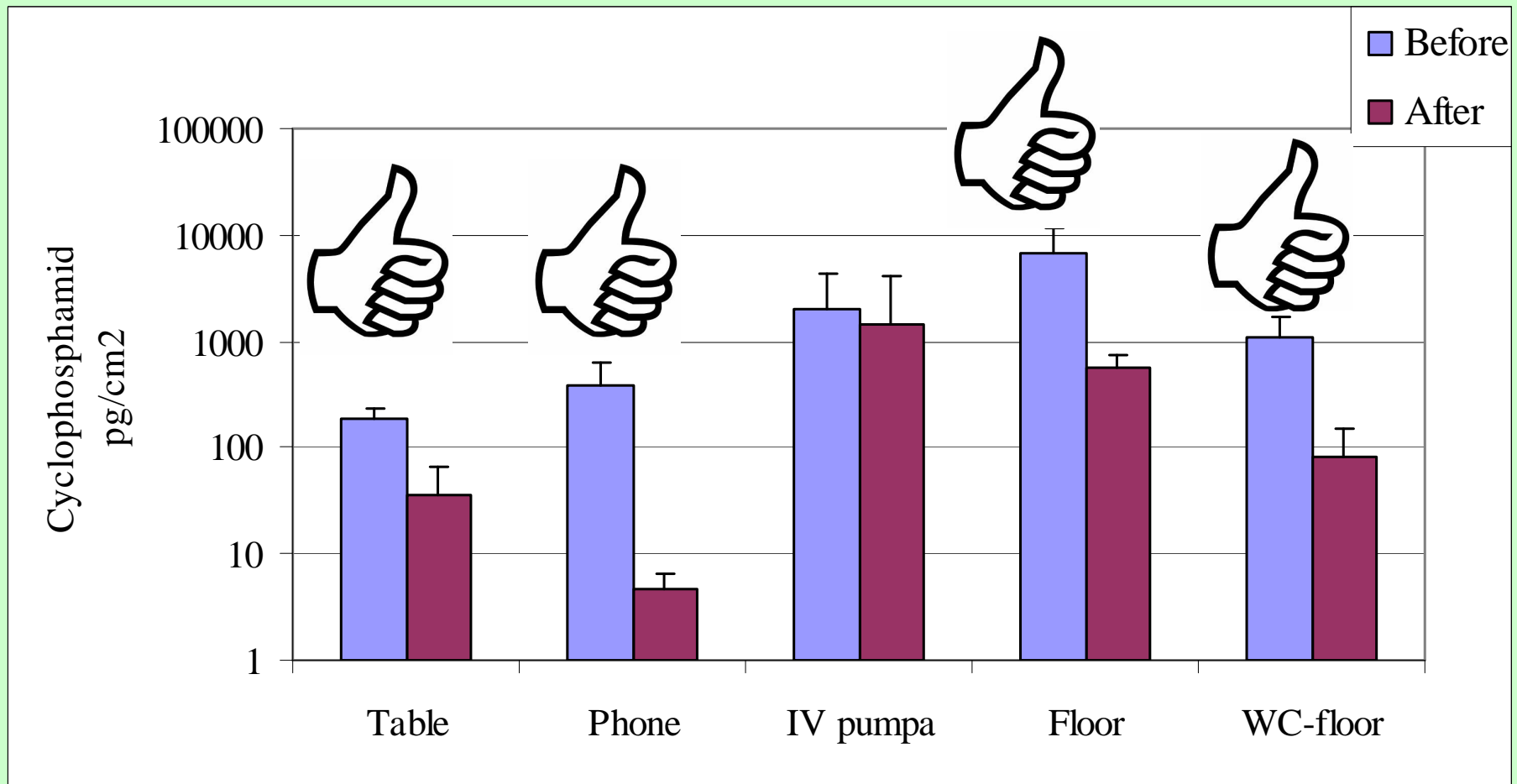
- ☺ High hygienic standard
- ☺ Sitting urination required
- ☺ Reduction of contamination around the toilet
- ☺ Sitting urination eliminates contamination surroundings the toilet



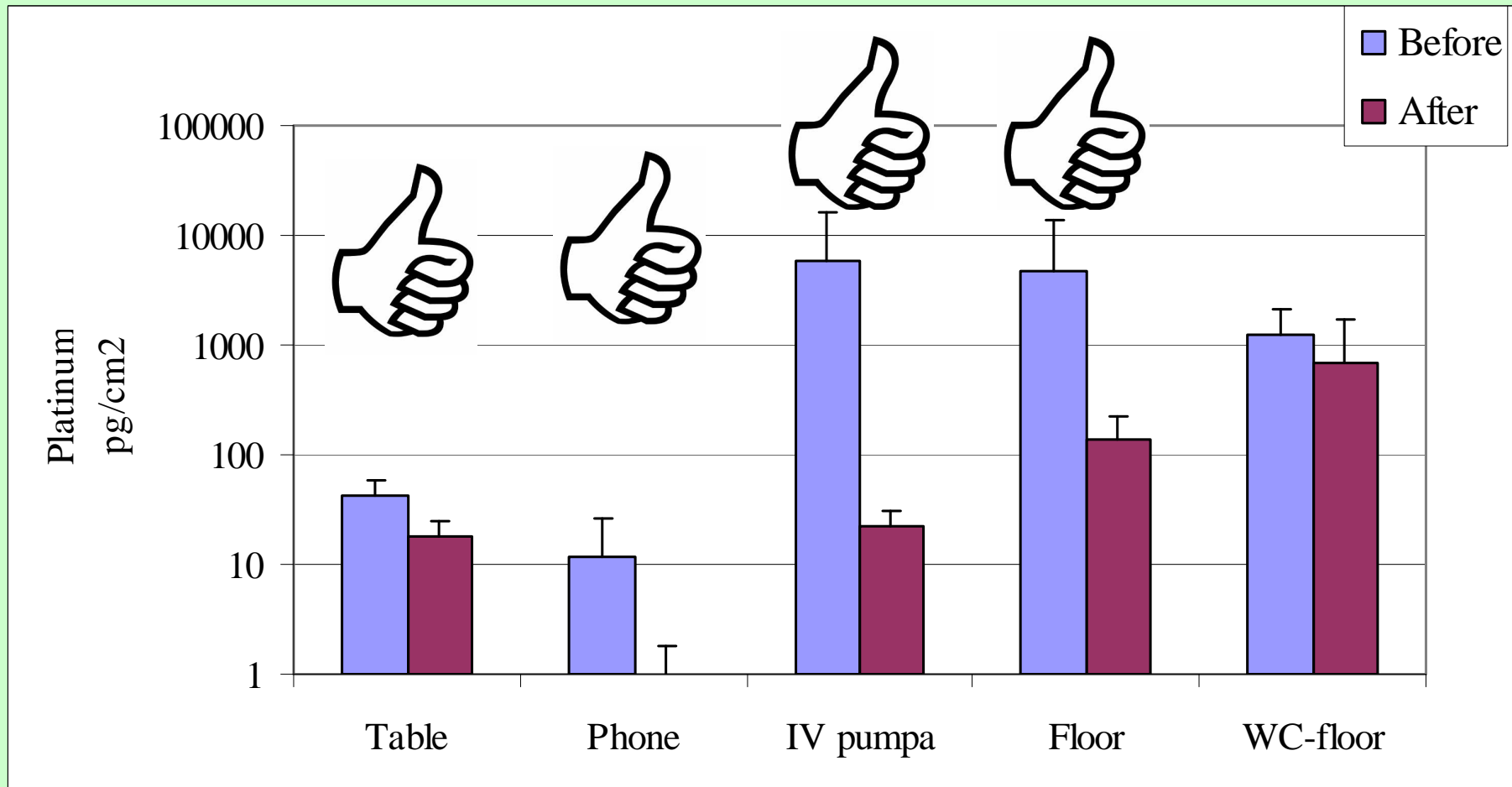
# Monitoring after the introduction of inovative measures



# Effect of inovative measures on contamination of outpatient clinic (cyclophosphamide)



# Effect of inovative measures on contamination of outpatient clinic (platinum)



# Conclusion

1. We find the implemented protective measures to be effective
2. Their implementation leads to the reduction of surface contamination
3. We highly recommend implementation of the measures also in other outpatient clinics



Thank you for your attention



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