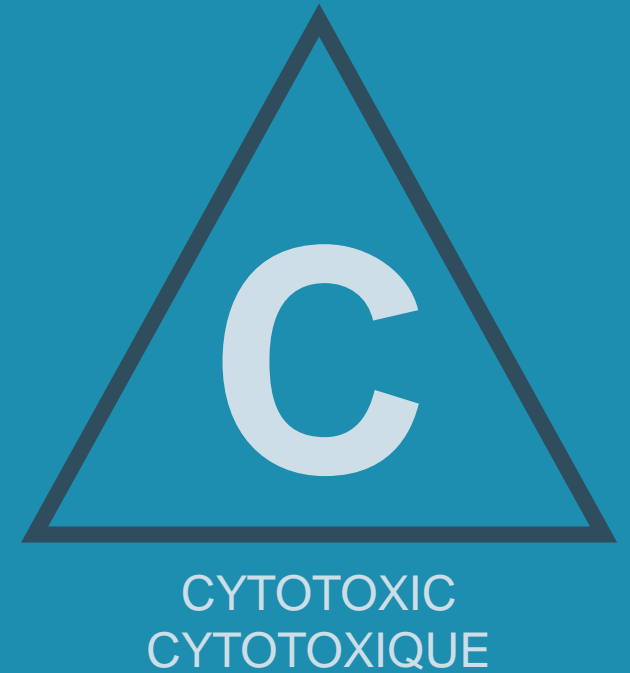


Unintended exposure to antineoplastic agents: a Belgian example

Co-authors: Creta M., Verscheure E., Tans B., Devriese H., Devriendt A., Godderis L., Duca RC., Vanoirbeek JAJ.



Eline Verscheure, KU Leuven

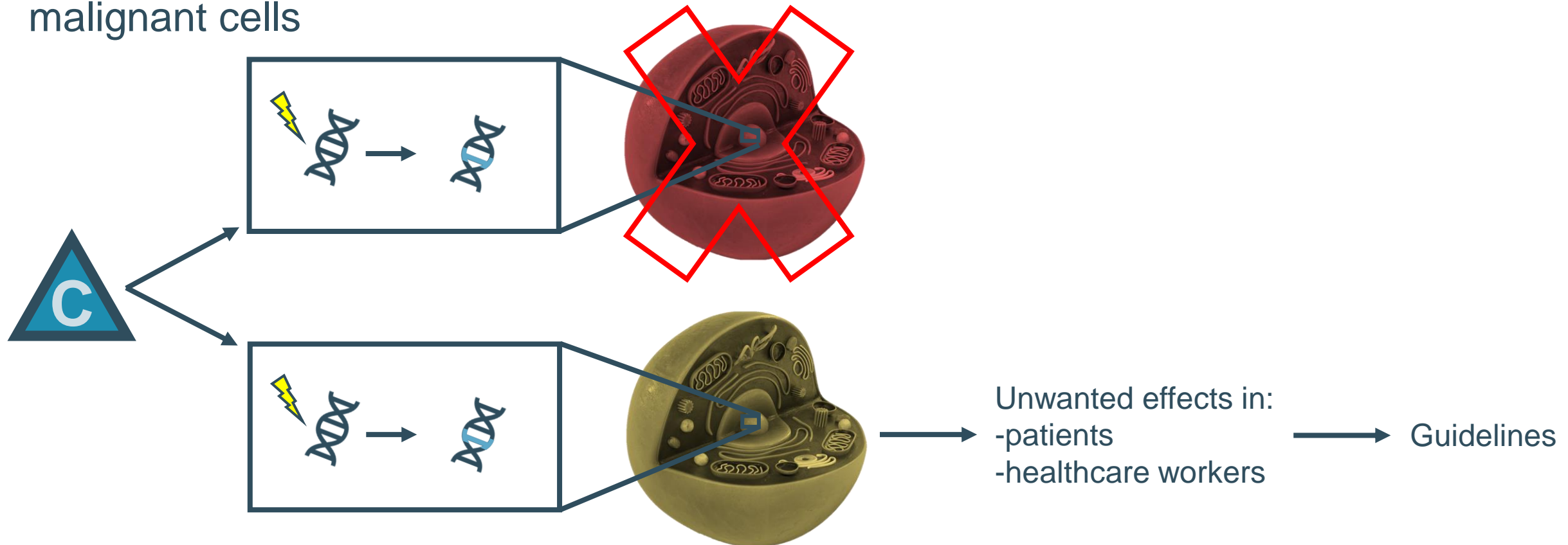
European Biosafety Roundtable - Prevention of exposure to hazardous medicinal products and other substances in Belgium and Europe

25/03/2022

39.3 miljarda

Definition and use

Antineoplastic = inhibiting or preventing the growth and spread of tumors or malignant cells



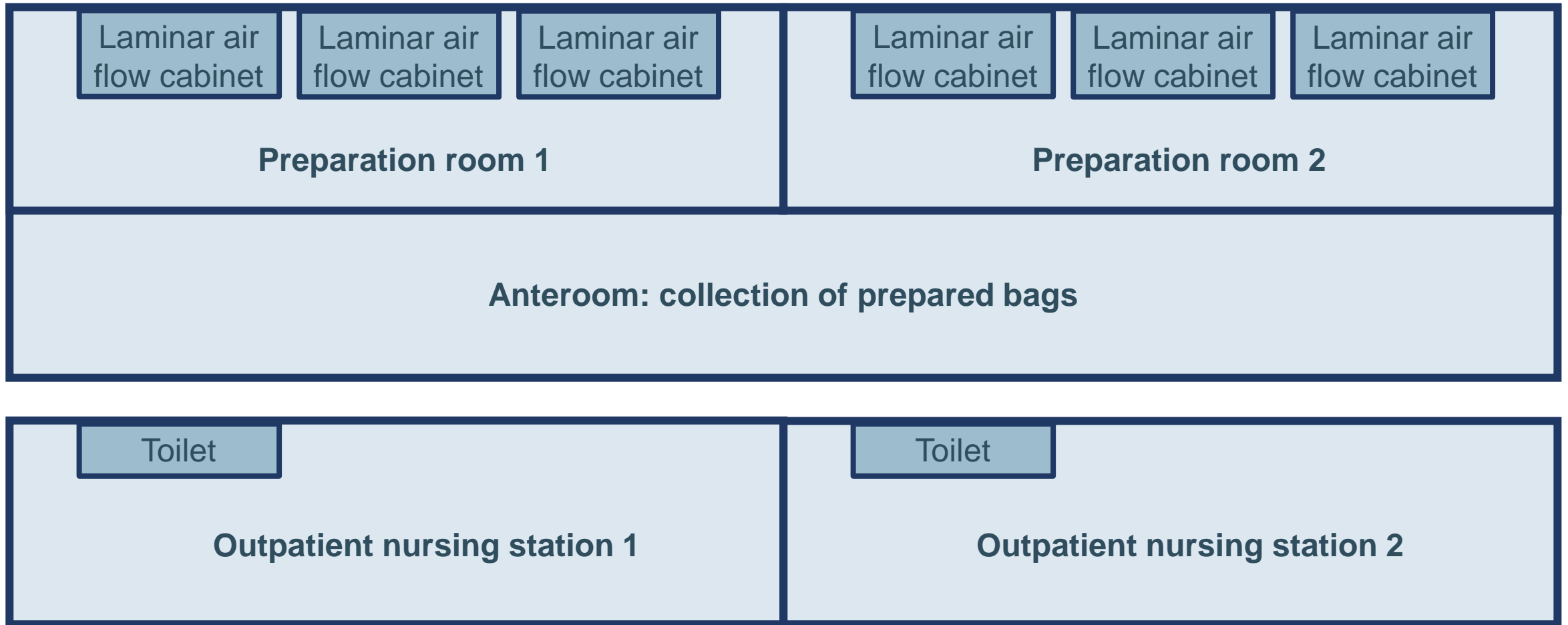
Exposure of healthcare workers



Occupational exposure



Belgium

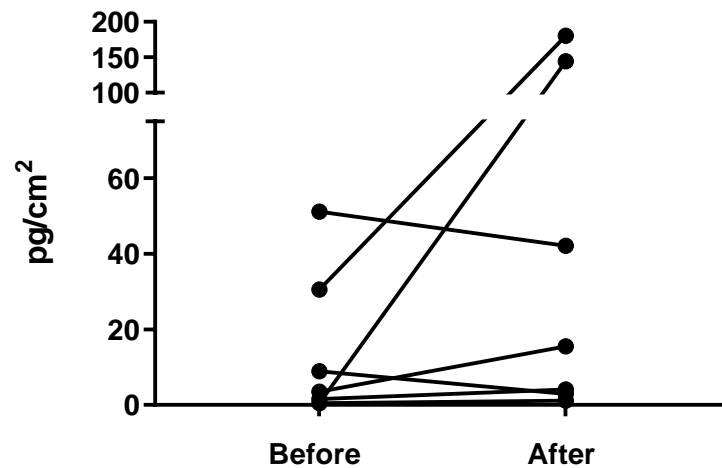


3 types of samples

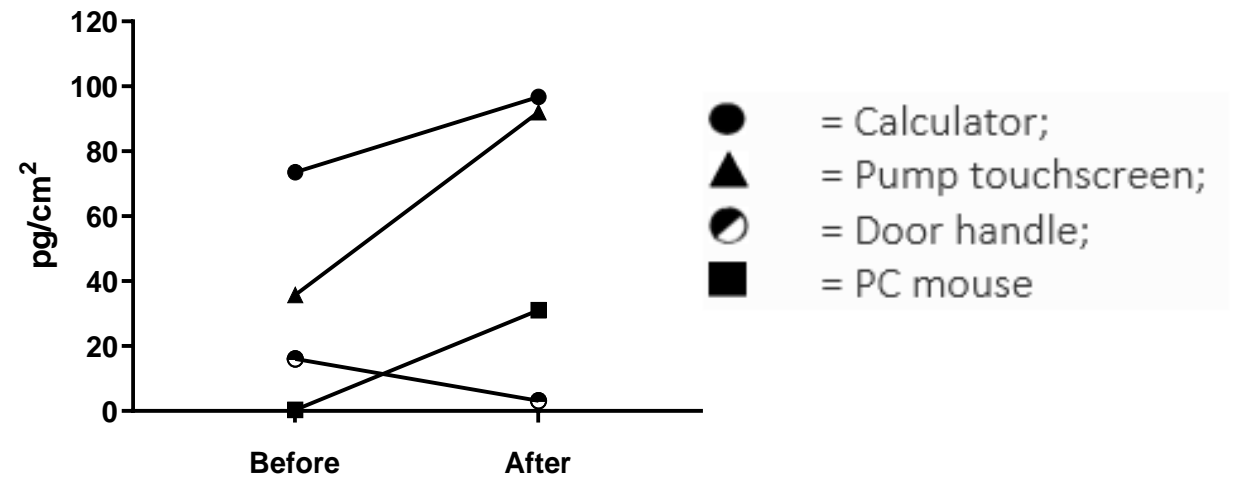


Very low levels of 5-FU confirm good practice of working and adequate cleaning

Laminar air flow cabinet in preparation rooms



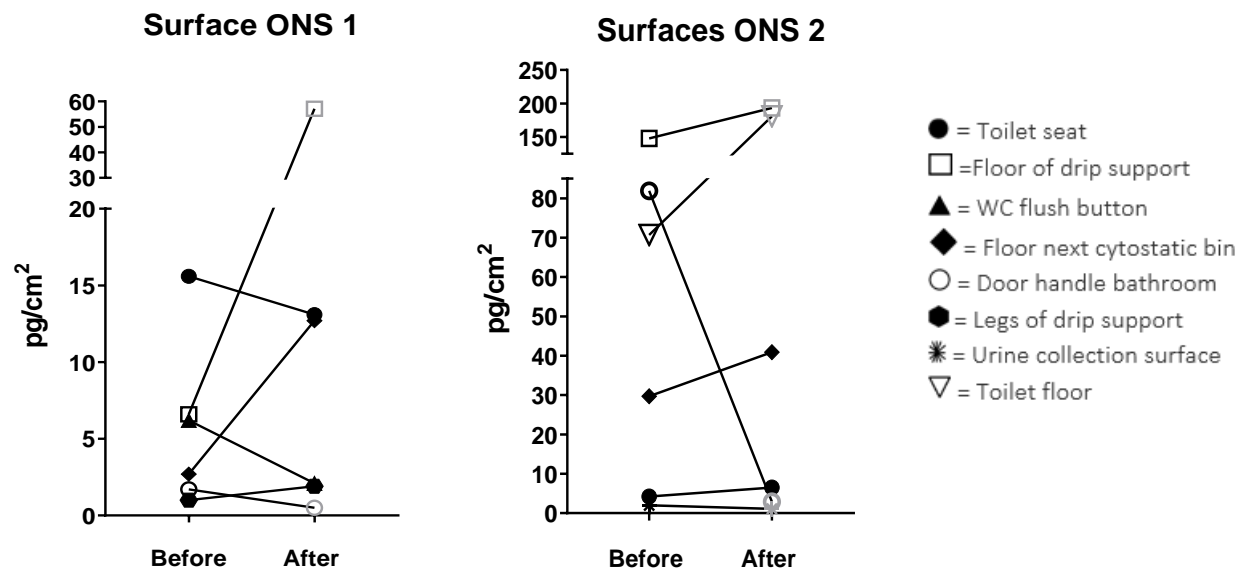
Frequently used devices in anteroom



- Decreased concentration door handle after preparation → most touched → potential source for dermal exposure
 - Low contamination → good practice of working and cleaning
- ! Contact point 5-FU vial and clave : 177.8 ng/cm² → contamination may occur prior to receipt at the institution

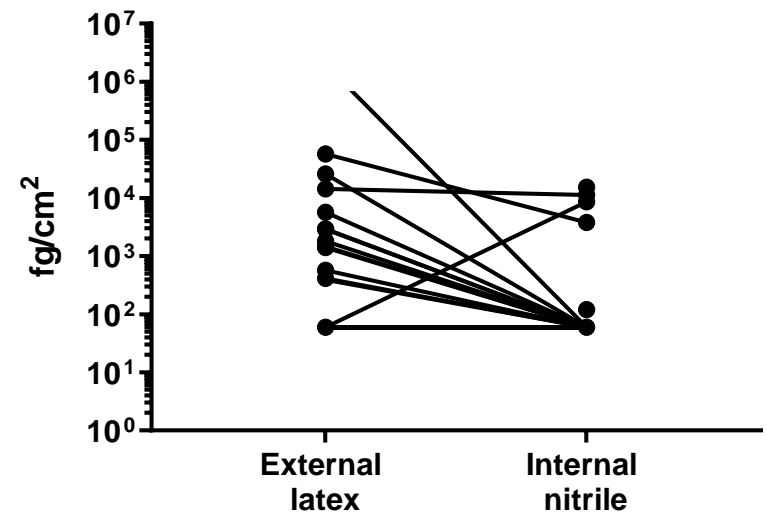
Very low levels of 5-FU confirm good practice of working and adequate cleaning

Outpatient nursing stations



Gloves

Gloves contamination



- Outpatient nursing stations → relatively low contamination in comparison with similar studies
- Dermal exposure: 3/24 > LOQ (0.38 – 1.18 pg/cm²)

Conclusion

Concentration ranges in surface samples (ng/cm ²)	
	Belgium
5-Fluorouracil	< LOQ – 177.8

- 11/61 above 0.1 ng/cm²
- 10 samples between 0.1 and 10 ng/cm²
- **1 sample > 10 ng/cm²**

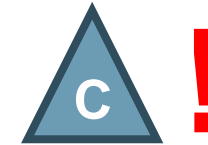
Concentrations*	Action
< 0.1 ng/cm ²	Repeat measurement 1x/year, revise after 4 years
0.1 - 10 ng/cm ²	Risk estimation, possibly follow up in 3 - 6 months, take action if necessary
> 10 ng/cm ²	Take action and follow up

→ 50/61 surface samples < 0.1 ng/cm² → good practice of working and cleaning
BUT still room for improvement, need for additional guidelines and (environmental + biological) monitoring

Occupational and non-occupational unintended exposure to antineoplastic drugs at home



Exposure of healthcare workers and family members



Literature: exposure



Healthcare workers

- Literature: healthcare workers are exposed to antineoplastic agents
- Hospital = highly controlled environment
- Many guidelines and recommendations

Healthcare workers

- Exposure healthcare workers?
- Home = less controlled environment

Family members

- Literature:
 - Limited number of studies
 - Variable results
 - Mainly small studies (3 – 13 family members)
 - Concentrations \geq healthcare workers
- Exposure family members?

Literature: effects



Healthcare workers

- Literature: clinical and genotoxic health effects
- Genotoxic effects play role in cancer development → increased risk

Healthcare workers and family members

- Home = less controlled environment
- Literature: concentrations \geq healthcare workers
→ Genotoxic effects?

Take-home message

Code Well-being at Work

Royal Decree of 11 March 2002 on protection of health and safety of workers
against the risks related to chemical agents at work



Evaluation of exposure, implementation and compliance of Code
! New situations/instruments/employees

Co-authors: Creta M., Verscheure E., Tans B., Devriese H., Devriendt A.,
Godderis L., Duca RC., Vanoirbeek JAJ.

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