EHMA 2025

Taking action to improve health for all

# Does banning Latex from surgery improve patient care and productivity?

## The insight into the iceberg makes hidden costs and benefits visible.

Anna K. S. von Eiff <> Wilfried von Eiff

Rennes (France), 05 June 2025

# Starting Situation and Background

- Cost pressure and limitations in financing
- Increasing requirements pertaining quality and safety for patients and staff
- Shortage of professionals in the clinical core business

- EU-wide regulations:
  - <> European Climate Law (Green Deal 2050)
  - <> Medical Device Regulation (MDR)
  - <> EU-DR Deforestation Regulation
- The Illinois Experience: Latex Glove Ban Act
- Learning from best-in-class institutions: Magnet Nursing Initiative

Anna K.S. von Eiff/Wilfried von Eiff
Center for Hospital Management University of Muenster (Germany)

# EU DR: Deforestation Regulation

## EU-Regulation No. 1115/2023 for the protection of woods requests supply chains free from deforestation.

- Goal: Protection of wooden areas and of areas covering biological diversity
- Proof of fulfilment by manufacturer and distributor
- Strong relationship to CSRD (Corporate Sustainability Reporting Directive): Sustainability reporting required, also for hospitals
- Especially affected is the extraction of natural rubber !

- In case latex-based products are banned, it may be anticipated that the demand for latex-free products will increase.

ILLINOIS.GOV

# LATEX GLOVE BAN ACT (410 ILCS 180/10 AND HB 209)

## … went into effect in 2023 (food services) and 2024 (healthcare)

- Studies estimate that **10-17% of healthcare workers** have a latex allergy, compared to just **4.3% of the general population**, making it a risk in the workplace.
- Patients with latex allergies are negatively impacted by the prevalence of **latex gloves** in healthcare settings, but providers also suffer. Anyone who frequently uses latex gloves is at a higher risk of developing an allergy over time.
- **HB209 specifies that all emergency medical service providers must use other gloves, as well as any healthcare worker providing care to a patient who is unconscious or otherwise unable to communicate an medical history.**
- **At least seven other states have similar bans:**
  **Arizona, California, Connecticut, Hawaii, Ohio, Oregon and Rhode Island.**

Source:
Illinois General Assembly - Bill Status for HB0209 https://ilga.gov/legislation/BillStatus Accessed: 17 April 2025

# Epidemiology of Latex: Patients

## Prevalence of latex-sensitivity and latex-allergy in the general population

- With a quota of 22 % latex is stated to be the second leading cause for peri-operative episodes in adults
- 1 % - 6 % of the general population show sensitive or allergic reactions when exposed to latex.
- 1 % - 1,37 % of the general population react to latex by more serious symptoms:

Sneezing. Runny Nose, Itchy, Watery Eyes, Scratchy Throat, Difficulty Breathing (Asthma), Wheezing. Cough.

Anna K.S. von Eiff/Wilfried von Eiff
Center for Hospital Management University of Muenster (Germany)

# Patients at Risk

## Patients at high risk of having a latex allergy include those

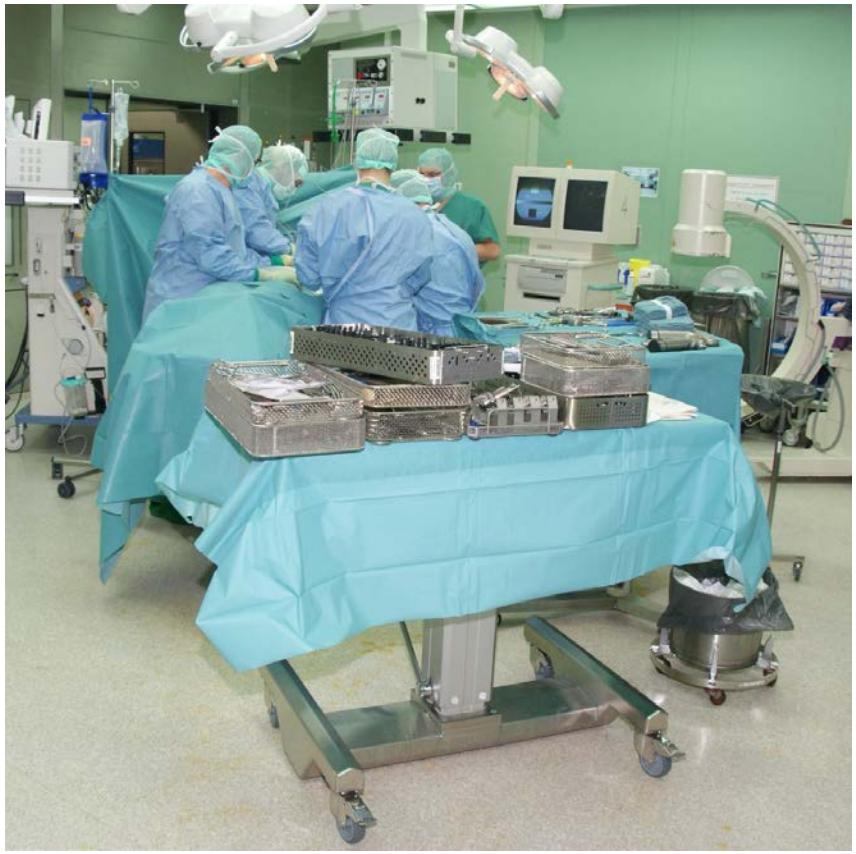
- who have had multiple previous surgeries
- who have spina bifida
- who have a history of environmental or food allergies
- or of hand dermatitis, or
- who are employed in occupations where they are frequently exposed to latex.

**The only way to manage such patients is to avoid the use of latex gloves for these patients or to ban latex gloves entirely.**

# Epidemiology of Latex: Clinical Staff

## Prevalence of latex-sensitivity and latex-allergy in healthcare workers

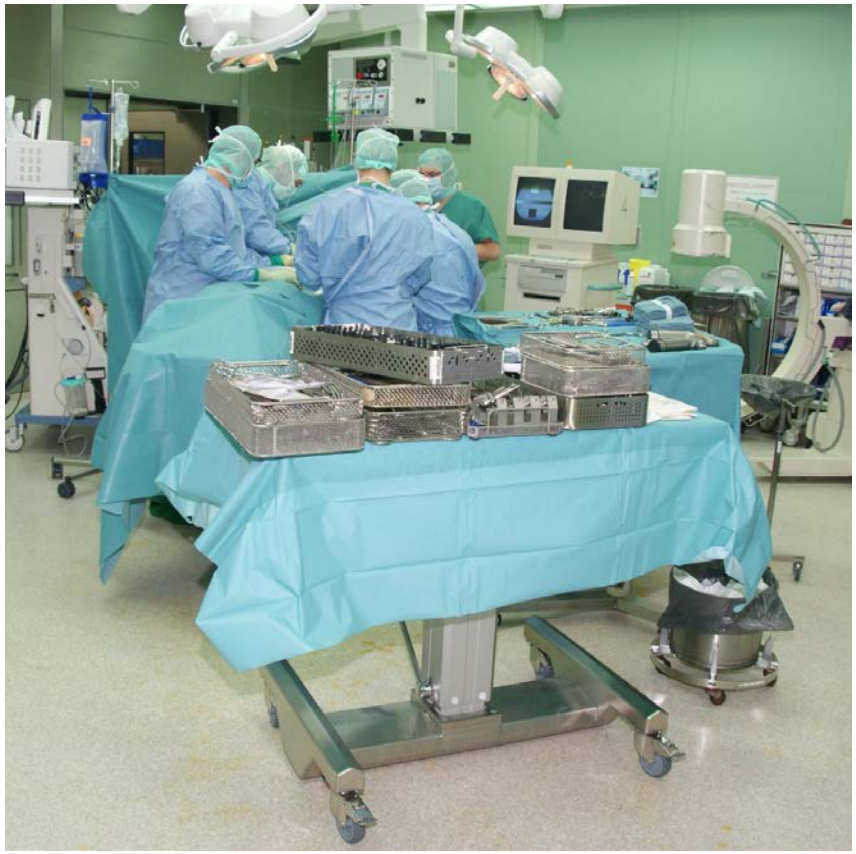
- **Healthcare professionals are at increased risk of developing latex allergies because of repeated exposure to latex.**
  - **12 % to 17 % of healthcare workers are latex sensitised**
  - **2,9 % - 9,7 % show allergic reactions when exposed to latex**
  - **15 % is the latex prevalence in OR personnel**



Anna K.S. von Eiff/Wilfried von Eiff
Center for Hospital Management University of Muenster (Germany)

# Evidence-based Findings:

- **Sensitivity to latex remains a serious burden of disease.**
- **Latex-associated episodes in patients worsen the patient outcome, come along with additional costs, an extension of ALOS, and opportunity costs.**
- **Health care workers are at increased risk of developing latex allergies because of repeated exposure to latex.**



Anna K.S. von Eiff/Wilfried von Eiff
Center for Hospital Management University of Muenster (Germany)

# Effects of Banning Latex

Decline down to 5 % if latex-sensitised children are no longer exposed to latex materials.

After conversion to latex-free gloves

- 83 % of persons affected from contact dermatitis
- 90 % allergic rhinitis and conjunctivitis
- 86 % asthma

felt completely pain-free

Decrease of latex-specific antibodies (IgE: Immunglobulin E) by 88 % in latex-sensitive persons by consequently using non-latex products.

Anna K.S. von Eiff/Wilfried von Eiff
Center for Hospital Management University of Muenster (Germany)

# A ban of latex-based products seems to be a promising approach!

# Why not switch the entire gloves portfolio to latex-free products completely ?

Anna K.S. von Eiff/Wilfried von Eiff
Center for Hospital Management University of Muenster (Germany)

# Business Case: Latex vs Non-Latex

**Data describing the empirical setting of the hospital:**

- **12.300 surgical procedures/interventions p. a.**
- **60.000 pairs of gloves p.a.**
- **Costs per pair: -latex gloves = 0,54 €; -latex-free gloves = 1,18 €**
- **CMI = 1,35; Occupancy level = 89.790 days p. a.; ALOS = 7,3 days**

**Cost Situation:**
**-80% latex gloves (48.000)**
**= 25.920 €**
**-20% latex-free gloves (12.000)**
**= 14.160 €**

**40.080 €**

**- 30.720 €**

**Cost Situation:**
**100% latex-free gloves**
**=**
**70.800 €**

**70.800 €**

**Does it pay-off to switch ?**

# VBP: The Price of Non-Conformity (Repair-driven Approach)

CENTRUM FÜR KRANKENHAUS MANAGEMENT

- Gloves used in OR and ICU = 60.000
- Surgical Procedures 12.000
- Latex-associated post-ponements of operations
- Latex-related complications in patients
- Latex-associated absence from work

| 20 % Latex-free Portfolio | | 100 % Latex-free Portfolio |
|---|---|---|
| 68.681 € | TCO | 71.000 € |
| 41.040 € | Price | 71.000 € |
| | CoP | |
| Hidden Costs 27.641 € | Purchasing and Logistics (Complexity Effect) | No Hidden Costs 0,0 € |
| | Costs of Loss of Productivity and Opportunity Costs | |
| | Direct Additional Costs | |
| | Costs of non-availability of staff | |
| negative | Community Effect | Hospital Level: 7 Mio € Community Level: 10 to 58 Mio € |

# Discussion and Limitations

**Whom can we trust:**
**Different prevalences**
**lead to different results!**

Anna K.S. von Eiff/Wilfried von Eiff
Center for Hospital Management University of Muenster (Germany)

# Whom can we trust:
# Different prevalences lead to different results!

| 12.000 Patients | Setting | 500 Health Care Workers |
|---|---|---|

| | | | |
|---|---|---|---|
| Illinois = 4,3% | 516 latex episodes | Illinois = 14 % | 70 latex episodes |
| Homerton = 1,01% | 121 latex episodes | Homerton = 4,3% | 22 latex episodes |

Anna K.S. von Eiff/Wilfried von Eiff
Center for Hospital Management University of Muenster (Germany)

# THANK YOU

Anna K.S. von Eiff/Wilfried von Eiff
Center for Hospital Management University of Muenster (Germany)

EHMA 2025

Taking action to improve health for all

# Authors and Affiliations


**dr. med.**
**Anna K.S. von Eiff**

**Assistant Physician, St. Marien Hospital Lüdinghausen (St. Franziskus Group Münster, Germany)**



**Univ.-Prof. Dr. Dr. Wilfried von Eiff**

**>Center for Health Care Management and Regulation HHL Leipzig Graduate School of Management**

**>Center for Hospital Management University of Münster (Germany)**
**von.eiff@uni-muenster.de**
**www.krankenhaus-management.de**