Bulletin de veille n° 75

1er novembre 2025 – 31 décembre 2025

Surveillance biologique de l'exposition professionnelle aux médicaments cytotoxiques. Etude de terrain.

Objectif : *Disposer d'une connaissance actualisée du sujet en accompagnement des demandes d'assistance qui découlent de la valorisation de l'étude sur la surveillance biologique de l'exposition aux médicaments cytotoxiques en milieu hospitalier.*

La validation des informations fournies (exactitude, fiabilité, pertinence par rapport aux principes de prévention, etc.) est du ressort des auteurs des articles signalés dans la veille. Les informations ne sont pas le reflet de la position de l'INRS. Les éléments issus de cette veille sont fournis sans garantie d'exhaustivité.

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- ***Articles de périodique***

Doležalová L., Bláhová L., Kuta J., Hojdarová T. and Bláha L.
Proposal of limit values for surface contamination by cytotoxic drugs in pharmacies and hospitals.
Ceska a Slovenska Farmacie, Volume 74, Numéro 2, 2025, page 96-102

Résumé: *INTRODUCTION: Cytotoxic drugs (cytostatics), widely used in the treatment of not only cancer diseases, are substances with potentially dangerous properties for healthcare personnel. Long-term daily exposure to cytostatics is associated with the possible manifestation of their genotoxic, carcinogenic and teratogenic effects. Handling of these drugs (during receipt, storage, preparation, packaging, transport, administration) can lead to contamination of the workplace and thus to exposure of healthcare personnel present. OBJECTIVE: The aim of our work was to propose, based on previous results and experience gained from long-term monitoring, a limit threshold value for surface contamination with cytotoxic drugs. METHODOLOGY: As part of the long-term monitoring (2008-2021) of surface contamination by cytostatics in pharmacies and hospitals in the Czech and Slovak Republics, the presence of eight drugs (cyclophosphamide, ifosfamide, methotrexate, irinotecan, paclitaxel, fluorouracil, gemcitabine and platinum as a representative of platinum cytostatics - oxaliplatin, carboplatin, cisplatin) was monitored. Samples were taken by employees of individual healthcare facilities and surface contamination was evaluated by the RECETOX Research Center of Masaryk University Brno using liquid chromatography with tandem mass spectrometry and inductively coupled plasma mass spectrometry. RESULTS: our study evaluated the surface contamination of cytostatics in 40 pharmacies (N = 1,277 samples) and 43 hospitals (N = 946 samples). Based on the results obtained and in accordance with currently known knowledge, we propose a threshold value of 100 pg/cm2 as the limit value of permissible contamination of cytostatics for most areas in pharmacies and hospitals (reception, storage, packaging, transport, application). On the one hand, contamination in isolator areas, where cytostatics are prepared in a controlled environment and using effective protective equipment and where their increased presence can therefore be "expected", should be perceived differently, and on the other hand, areas in administrative facilities and day rooms, where no protective equipment is used and contamination should therefore be zero. CONCLUSIONS: Knowledge of the level of contamination in healthcare facilities working with cytotoxic drugs helps to set up work processes so that the working environment is safe for employees. Regular monitoring is an important tool. The proposal of a value of 100 pg/cm2 as an exposure hygiene limit represents the first step towards implementing mandatory monitoring into national legislation.*

https://doi.org/10.36290/csf.2025.013

Senarath N., De Silva D., Rathnayake R., Warnakulasuriya S., Meegoda M. and Jayasinghe S.S. (Préprint dans Bulletin n° 72)
Perceptions of occupational exposure and adherence to safety measures of handling systemic anti-cancer therapy (SACT) among oncology nurses at the national cancer institute, Sri Lanka.
Internation Journal of Risk and Safety in Medicine, Volume 36, Numéro 4, novembre 2025, page 248-259

Résumé: *Background : Chemotherapy is a well-known treatment modality against cancer. Occupational exposure to chemotherapy and related adverse effects are widely reported. Safe handling is vital in the reduction of possible risks.ObjectiveTo assess perceptions of occupational exposure and adherence to*

safety measures of handling Systemic Anti-Cancer Therapy (SACT) among nurses.MethodsA phenomenological study was carried out using a semi-structured, in-depth interviewer guide following the Health Belief Model (HBM) components. The study adopted a purposive sampling method, and data was collected until it reached the saturation point. A thematic analysis was carried out, preserving the study's trustworthiness. Results : The nurse's main role was to administer chemotherapy. The primary learning sources were clinical experience and follow-up with seniors. Nurses accept that they are occupationally exposed to chemotherapy and believe that safety measures are protective against exposure. Surgical gloves and masks were common PPE, and chemotherapy-specific masks and gowns were mainly used in mixing drugs. Staffing, safe work practices, separate waste disposal, and seniors' guidance are identified as protective measures. Headache, vomiting, hair loss, skin irritation, and miscarriages were commonly perceived as adverse effects of handling SACT. Conclusions : An increased patient count, frequent complex doses, a lack of PPE and facilities, and discomfort with PPE might increase exposure.

https://doi.org/10.1177/09246479251346172

Tanigawa H., Kanatani Y., Ikesue H., Hayashi T. and Yamaguchi M.
Patient Education to Prevent Exposure to Anticancer Drugs among Patients and Caregivers during Outpatient Chemotherapy in Japan: A Cross-Sectional Survey.
Biological and Pharmaceutical Bulletin, Volume 48, Numéro 12, décembre 2025, page 1972-1977

Résumé: *In Japan, education on preventing exposure to anticancer drugs should be conducted for outpatients receiving chemotherapy, based on the "Guideline for Preventing Occupational Exposure in Cancer Chemotherapy Drugs, 2019 Edition (guidelines 2019)." However, the educational content at each facility remains unclear. This study aimed to investigate the educational system and content in 461 cancer hospitals nationwide. We conducted a cross-sectional survey using a web questionnaire consisting of 27 questions covering four categories (background, patient educational system, content of patient education handouts, and issues in exposure prevention education). In total, 310 (67.2%) facilities responded, and 306 facilities were surveyed. Among the facilities surveyed, 96.7% (296/306 facilities) provided protection against exposure to injectable anticancer drugs, whereas only 33.4% (99/296 facilities) provided protection against exposure to oral anticancer drugs. Moreover, we analyzed the references and contents of the handouts used at the facilities. A total of 85% (209/244 facilities) of the facilities were creating handouts based on the 2019 guidelines. Approximately 85% of the facilities included "preventing exposure for body fluids and excretions" and "recommended preventing exposure period" in their handouts, but <60% included "handling of injectable agents" and "handling of oral anticancer agents." Furthermore, in the free description section on issues in education, 27 responses mentioned "insufficient of evidence," which was thought to be related to differences in educational content between facilities. In conclusion, it is necessary to establish a system for improving education to prevent exposure to oral anticancer drugs and standardize educational content through the creation of evidence.*

https://doi.org/10.1248/bpb.b25-00521

Naegele M.
German cancer nurses and occupational exposure to cytotoxic drugs: A cross-sectional study with a mixed-methods approach.
European Journal of Oncology Nursing, Volume 79, décembre 2025, article 103014

Résumé: *PURPOSE: Cytotoxic drugs (CDs) pose considerable occupational health risks to oncology nurses due to their carcinogenic, genotoxic, and teratogenic properties. This study investigates the prevalence of CD-related symptoms among German oncology nurses and assesses the implementation of safety measures in clinical practice. METHODS: A mixed-methods, cross-sectional survey was conducted among 400 oncology nurses attending 14 CD safety training courses in Germany. Quantitative data captured demographics, symptom prevalence, and workplace safety measures, while qualitative data were derived from open-ended questions on specific exposure events. Descriptive statistics and qualitative content analysis (Mayring method) were applied. RESULTS: One-third (33.75 %) of nurses reported symptoms attributed to CD handling, mainly skin reactions (51.58 %), headaches (41.48 %), and altered taste sensations (28.15 %). Qualitative data revealed that exposure mainly occurred during CD administration (35 %) and was linked to improper management (56 %), especially through defective or incorrectly handled infusion systems. Protective measures were inconsistently applied: while 80.47 % of institutions had SOPs, 64.12 % provided safety training, no site implemented all recommended measures. Only 60.42 % of the nurses used cytotoxic-proof gloves; other PPE components were rarely used. Subgroup analyses indicated that nurses with CD-related symptoms were more likely to work in settings with fewer technical and organizational safeguards. CONCLUSION: This study highlights critical gaps in CD safety protocols in German oncology practice. Inadequate training, insufficient technical controls, and inconsistent PPE use contribute to occupational exposure risks. Enhancing protective strategies, promoting a strong safety culture, and improving institutional accountability are essential to safeguard oncology nurses and reduce CD related health risks.*

https://doi.org/10.1016/j.ejon.2025.103014

Saker M., Dayekh A., Alrayshouni Z., El-Tassi A. and Pakai A.

Educational intervention effects on nurses' knowledge, attitudes, and practice toward handling cytotoxic drugs in their workplace.

BMC Nursing, Volume 25, Numéro 1, décembre 2025, page 27

Résumé: *BACKGROUND: Cytotoxic drug (CD) hazard is a significant concern in healthcare provision, affecting nurses through various exposure means. It is important to limit the risks of exposure by enhancing nurses' knowledge of CD and improving compliance with evidence-based practices. METHODS: This study aimed to assess the knowledge, practice, and attitude of nurses working in an oncology specialty hospital by implementing an educational program. This is a pre-post test quasi-experimental study design without a control group. We utilized a simple random sampling approach to select 160 nurses. The research team compared the results before and after the intervention. RESULTS: Most of the nurses acquired their knowledge on the use of antineoplastic agents through organizational mandatory training programs. While knowledge improved significantly post-intervention ($p = 0.002$), changes in self-reported practice ($p = 0.11$) and attitude ($p = 0.22$) were not statistically significant. This suggests that a single educational session is sufficient to improve knowledge but insufficient to change behavior or attitudes in the short term. All three knowledge, practice, and attitude scores were positively and significantly correlated with years of work experience and the age of nurses. Both academic education and training programs have a significant impact on the knowledge and behavior of nurses. CONCLUSION: Nurses demonstrated greater awareness after the education intervention. Nursing continuous education and safety professionals are advised to adopt such educational interventions within a holistic organizational behavioral change program to impact long-term nurses' behavior. SUPPLEMENTARY INFORMATION: The online version contains supplementary material available at 10.1186/s12912-025-04180-9.*

https://doi.org/10.1186/s12912-025-04180-9

Almashat S., Horch M., Chen B. and McDiarmid M.
Exposure Registries as a Prevention Tool for Occupational Cancers: Establishing a New Hazardous Drug Registry for Oncology Personnel.
American Journal of Industrial Medecine, Volume 68, Numéro 12, décembre 2025, page 1037-1047

Résumé: *Public health registries collect and maintain demographic and health data on a cohort of people with a common disease or exposure. While disease registries have proliferated in recent decades, registries comprising persons with potentially hazardous exposures-known commonly as exposure registries-are rare. Occupational exposure registries allow for hazardous work exposures to toxicants, including carcinogens, to be systematically tracked to facilitate preventive and mitigating interventions for exposed workers. However, the virtual absence of such registries, combined with the fact that state-based cancer registries do not systematically collect occupational or other exposure information, hinders efforts to study the role of occupation in US cancer cases or undertake appropriate medical surveillance for exposed workers. Given the considerable, and under-recognized, risk of occupational cancer, exposure registries focused on workplace carcinogens could fill this gap. A recent initiative at the authors' home institution has established a national exposure registry of oncology personnel handling hazardous drugs, most notably antineoplastic drugs, many of which are themselves known human carcinogens. The registry aims to facilitate the comprehensive collection of data on exposure scenarios; aid in raising awareness of, and tracking compliance with, best practices in hazardous-drug handling to mitigate risks; and assess long-term cancer, reproductive, and other potentially exposure-associated health outcomes in this worker population. Occupational exposure registries are an underutilized tool in occupational health surveillance. The development of such a registry for hazardous drug exposures is a feasible and scalable model for registry development in other high-risk work environments.*

https://doi.org/10.1002/ajim.70029

Shirkosh S., Mahmoodi-Shan G. and Jouybari L. (Préprint dans Bulletin n° 74)
Caring Under Challenges: Exploring the Experiences of Oncology Nurses in a Tertiary Hospital in Northern Iran.
Seminars in Oncology Nursing, Volume 41, Numéro 6, décembre 2025, article 15204418

Résumé: *OBJECTIVES: Oncology nursing, as one of the most challenging areas of healthcare, requires special attention to nurses' caregiving experiences. This study was conducted to explore the care challenges of oncology nurses in northern Iran. METHODS: This qualitative descriptive study, with a conventional content analysis approach, was conducted with the participation of 12 nurses working in oncology wards in northern Iran from August to December 2024. Data were collected through in-depth semi-structured interviews and analyzed using Graneheim and Lundman's (2004) method. Sampling was purposive and continued until data saturation was reached. RESULTS: Data analysis revealed four main themes with twelve subthemes of oncology nurses' care challenges: Supportive Care Paradox (conflict between the therapeutic communication standard and reality: mismatch between patient expectations and system capabilities, and patients' informational conflicts), Educational Paradox in the Healthcare System (inadequate specialized training, lack of clinical skills, and educational system limitations), Multilayered Occupational Burnout (adverse effects of cytotoxic exposure, emotional-cultural burnout, and ethical-systemic burnout), and Organizational Incongruence in the Healthcare System (imbalanced resource distribution, imbalanced responsibility distribution, and insufficient systemic support). These findings show deep-rooted systemic and cultural barriers affecting care quality. CONCLUSION: This study reveals systemic and emotional challenges of oncology nurses that impede the provision of sustainable*

care. The pressure to compensate for shortcomings exacerbates nurses' burnout. The health system must strengthen the sustainable care and professional health of nurses through specialized training, human resource optimization, psychological support, and equitable allocation of resources. IMPLICATIONS FOR PRACTICE: Implementing targeted educational programs and systemic reforms can enhance care quality and nurses' well-being, providing implications for policy and practice in similar resource-limited settings.

https://doi.org/10.1016/j.soncn.2025.152044