

## Multi-patient disposables in everyday practice – way to improve safety and efficacy

Use of power injectors for injection of contrast media (CM) in radiology is well established practice that allow specific flow rates for uniform vascular and visceral enhancement.

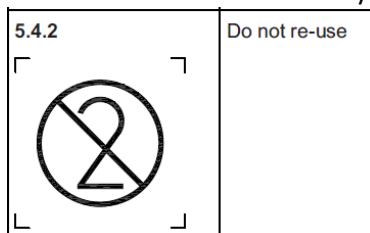
Although based on different technologies, all power injectors share a common trait in form of disposable materials used for contrast injection such as syringes, patient tubes, spikes etc.

At first, single use disposables were exclusively produced and used.

High costs per exam associated with such praxis caused various off-label practices to appear worldwide, resulting with routine use of single-use disposables for more than one patient, with or without additional components such as one-way valves, generic patient tubes etc.

Such practice may have significant negative impact on patients' health.

That is the reason why regulatory bodies, like EEC, uniformly claim that 'single use device' means a device intended to be used once only for a single patient.<sup>1</sup>



If the device bears an indication (picture 1) that the device is for single use, information about known characteristics and technical factors known to the manufacturer means that it could pose a risk if the device were to be re-used.

Picture 1

Relevant guidelines strongly advocate against re-use of single-use disposables.

**Do not administer medications from a syringe to multiple patients, even if the needle or cannula on the syringe is changed. Needles, cannulas and syringes are sterile, single-use items; they should not be reused for another patient nor to access a medication or solution that might be used for a subsequent patient<sup>2</sup>**

**Category IB: Strongly recommended for implementation and supported by some experimental, clinical, or epidemiologic studies and a strong theoretical rationale.<sup>2</sup>**

Off-label use has also legal impact

**„If devices labelled ‘single use’ are reused, the responsibility for adverse effects related to the recycling process is transferred from the manufacturer to the user and the hospital”<sup>3</sup>**

Few relatively recent incidents showed that threat of transmission of infectious agents is real.

For example, study from Taiwan showed that 7 patients who were diagnosed as malaria cases had been undergoing computed tomography (CT) examination.<sup>4</sup>

**Conclusions: This nosocomial outbreak of malaria was most likely due to transmission via a contaminated catheter and contrast medium used for CT scanning. Use of disposable catheters may avoid such nosocomial outbreaks in the future.<sup>4</sup>**

It is much harder, but possible, to prove that common iatrogenic infections, like hepatitis, are transferred during CM applications.

For example, six cases of acute hepatitis C related to computed tomography scanning with contrast were identified in 3 hospitals in Spain. A patient with chronic hepatitis C had been subjected to the same procedure immediately before each patient who developed acute infection.<sup>5</sup>

Measures undertaken by regulatory bodies in order to prevent further transmissions includes:

**The first set of measures, which emphasized appropriate use of health products and stressed the importance of following manufacturer’s instructions (a contrast injection syringe for each patient)<sup>5</sup>**

Experience from Poland showed that “...the most common possible transmission route were still medical procedures. In 2017, the outbreak of HCV infection in the Lubelskie was registered. (8 patients, 291 exposed persons, with whom computer tomography with a contrast from multi-dose packaging was conducted, using an automatic injection device).<sup>6</sup>”

**“In all cases, single use disposables were used in non-appropriate way, as suggested by manufacturer.”<sup>6</sup>**

More recently, multi-use CT and MR contrast injectors were developed. These injectors offer the option to use larger bottles, injecting multiple patients from the same bottle.

Apart from greater safety for the patients, those multi-use solutions may offer greater efficacy in everyday practice through the:<sup>7</sup>

- Shorter preparation time
- Optimised use of CM through personalized dosing and use of cheaper large CM containers
- Lower amount of waste

Bayer has also developed multi-use solutions for its contrast injection platforms. Apart from already widely used Multi-patient kit for Stellant injector, new multi-patient solution is recently available for MR injector MEDRAD MRXperion. Detailed review of both multi-patient solutions are available in relevant videos. Please click each box or follow the link below to watch the video.



[MEDRAD Stellant with MP kit](#)



[MEDRAD MRXperion MP kit](#)

Reference:

1. Consolidated text: Council Directive 93/42/EEC of 14 June 1993 concerning medical devices [EUR-Lex - 01993L0042-20071011 - EN - EUR-Lex](#)
2. Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings 2007, Jane D. Siegel, MD; Emily Rhinehart, RN MPH CIC; Marguerite Jackson, PhD;
3. Reuse of single-use sterile medical devices decreased in Danish hospitals after report discouraged it , Christensen M, Meyer M, Jepsen O B. Reuse of single-use sterile medical devices decreased in Danish hospitals after report discouraged it. Euro Surveill. 1999;4(10):pii=57. <https://doi.org/10.2807/esm.04.10.00057-en>
4. A nosocomial outbreak of malaria associated with contaminated catheters and contrast medium of a computed tomographic scanner, Infect Control Hosp Epidemiol 1999 Jan;20(1):22-5. doi: 10.1086/501557
5. Panella et al, Transmission of Hepatitis C Virus during Computed Tomography Scanning with Contrast, Emerg Infect Dis. 2008 Feb;14(2):333–336. doi: 10.3201/eid1402.060763
6. Zakrzewska et al Hepatitis C in Poland in 2017, Przegl Epidemiol 2019;73(2):167-178. doi: 10.32394/pe.73.16.
7. Struik, F., Futterer, J.J. & Prokop, W.M. Performance of single-use syringe versus multi-use MR contrast injectors: a prospective comparative study. Sci Rep 10, 3946 (2020). <https://doi.org/10.1038/s41598-020-60697-w>

Kompanija Bayer veoma vodi računa o bezbjednosti svojih proizvoda. Molimo Vas da svaku prijavu neželjenog događaja u vezi sa primjenom Bayer medicinskog proizvoda pošaljete Agenciji za lijekove i medicinska sredstva Bosne i Hercegovine ([www.almbih.gov.ba](http://www.almbih.gov.ba)).

Prijavu neželjenog događaja možete poslati i kompaniji Bayer na [pv.see@bayer.com](mailto:pv.see@bayer.com).

Ovu poruku ste dobili nakon što ste se prijavili za našu elektronsku komunikaciju. Više o obradi Vaših osobnih podataka možete pročitati u [Informacije o privatnosti podataka](#).

Ako više ne želite primati naše poruke, odjavite se putem sljedećeg linka:

[ODJAVA](#)

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