INCOMPATIBILITIES OF PARENTERAL DRUGS IN INTENSIVE CARE - ANALYSIS AND OPTIMISATION **OF ADMINISTRATION SCHEDULES** tirolkliniken **OF CENTRAL VENOUS CATHETERS** MEDIZINISCHE AND FREQUENTLY USED DRUG COMBINATIONS UNIVERSITÄT universitätskliniken

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What was done?

• To optimize the drug therapy at four intensive care units (ICUs) of the University Hospital, the pharmacy department, physicians, and care management, jointly implemented a quality assurance project. In multidisciplinary teams, we had to overcome various challenges in different wards to develop standards regarding administering drugs via multi-lumen catheters. We analyzed all frequently used drugs (n=72) for their compatibility and summarized findings in a crosstable.

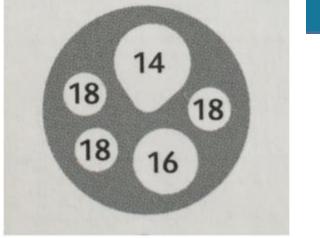
Why was it done?

- Due to the limited number of ports, it is necessary to administer several drug solutions via the same access.
- Incompatibility reactions can occur an may lead to a reduction or loss of drug efficacy and severe damage to the patient's health.

How was it done?

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- The current situation was recorded using a questionnaire and collecting individual cases of protocols for central vein catheters.
- About 2000 drug-drug-combinations were analyzed using three databases, KiK 5.1, Micromedex, Stabilis 4.0, corresponding specialist information, and manufacturer data. Nevertheless, the compatibility check based on the databases is subject to some restrictions. In several cases, the databases give different or contradictory results, and compatibility data are rarely available for some combinations. The project revealed that although infusion therapy is standardized in intensive care units, there are fewer standards regarding administering drugs via multi-lumen catheters.
- The objective was to create standardized administration protocols for central venous catheters and verify parenterally administered drugs' incompatibility reactions.
- A further purpose was to build multidisciplinary cooperation to improve the drug administration processes.
- There are significant differences between theory and practice in terms of handling infusion therapy.



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varying compatibility data

insufficient data



Note: The compatibility information is only valid for the indicated drugs in combination with the indicated carrier solution

What has been achieved?

What next?

The awareness towards the need for

- The incompatibility table allows a quick assessment.
- The results were presented in a clinic-wide interdisciplinary training.
- Different hazardous practices got identified and eradicated.
- The advantages/disadvantages of varying software systems were broadly discussed.
- KiK 5.1 was implemented in the ICUs, Micromedex in the pharmacy department.
- The team agreed that existing uncertainties must be decided jointly. Different practices in different wards may pose a threat to patient safety.

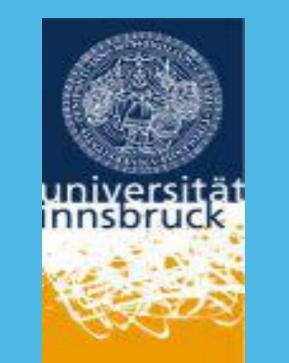
cooperation and hospital pharmacists, competence concerning incompatibility reactions strongly increased, leading to more standardization in the infusion therapy and avoiding incompatible drug combinations.

The aim is to initiate a continuous improvement process.

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