



Reducing Medication Errors

Comprehensive solutions
for preparing, storing
and dispensing medicines

Prescribing



Preparing



Storing



Dispensing



Improving patient safety

The WIEGAND® system offers comprehensive and flexible solutions to increase medication and, ultimately, patient safety. Parallel to providing an improvement in the quality of care, the simple, modular system components are applicable to inpatient and ambulatory healthcare environments. Our systems reduce the work load of nurses and pharmacy assistants, resulting in a reduction in medication errors while substantially decreasing costs.



The nurse is certain to provide the best care for the patient.

Sustainable know-how

WIEGAND® has been studying medication processes for over forty years. Through close collaboration with care specialists, pharmacists and physicians across Europe, we continually develop our concepts to find new and practical solutions for our customers' ever changing requirements.

WIEGAND®'s concepts increase efficiency and improve the working process of nurses, thus leading to a decrease in medication errors.

The WIEGAND® products are durable and have an outstanding cost-benefit ratio, which effectively facilitates the lowering of health care costs.



Reducing liability risks

The frequency of medication errors occurring between writing a prescription to the administration of medicines is alarmingly high. For years, various statistics from the USA and Europe refer to this harmful and costly problem. Only by integrating these factors into a health care institution's risk management process, the reduction of medication errors will become an achievable strategic goal.

Medication errors are costly

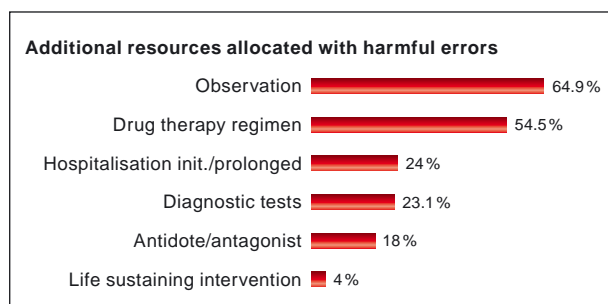
According to different estimates, 60-80% of all errors in the health care sector can be attributed to human failure. The consequences of medication errors are disturbing. In an extensive report by D.W. Bates and colleagues, the following extrapolations were made:

- Estimated annual costs of Adverse Drug Events (ADE) for a 700-bed hospital: \$ 5.6 million
- ADEs were recorded in 6.5 % of all patients
- Overall costs: \$ 2,595 per ADE
- ADEs lead to 2.2 additional days of hospitalisation
- Preventable ADEs (28% of all ADE) annual cost: \$ 2.8 million
- Costs for each preventable ADE: \$ 4,685
- Preventable ADEs result in additional 4.6 days of hospitalisation
- 57 % of all ADEs were judged significant (30 % serious, 12 % life-threatening and 1 % fatal)

«These estimates do not include costs of injuries to patients, malpractice costs, or the costs of less serious medication errors or admissions related to ADEs. These results suggest that hospitals can justify devoting additional resources to develop systems that reduce the number of preventable ADEs not only to improve patient care but also to reduce ADE-related expenses.»

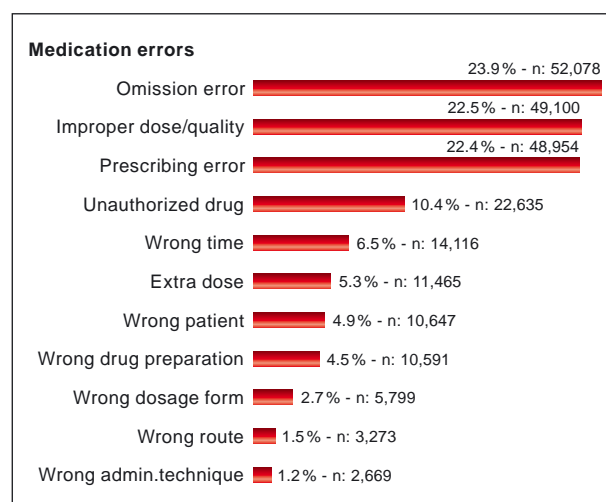
Source: Cost of adverse drug events; D.W. Bates et. al., JAMA, Jan 22/29, 1997 – Vol277, No. 4

MEDMARX® (USA) analyzed 21,084 cases with ADEs and highlighted the consequences of the harmful cases.



Allocation of medication errors

The following data from MEDMARX® (USA) are based on 218,347 reported cases and the frequency of the different sources of error was analyzed.



Quelle: Hicks, R.W., Santell, J.P., Cousins, D.D., and Williams, R.L. (2004). MEDMARXSM 5th Anniversary Data Report: A Chartbook of 2003 Findings and Trends 1999–2003. Rockville, MD: USP Center for the Advancement of Patient Safety.

The Swiss Foundation for Patient Safety carried out a survey in 2006 on patient safety in Swiss hospitals. The six most pertinent sources of medication errors (number of entries x weighting) are listed below:

1. Error while preparing medicines
2. Administration of medicines to the wrong patient
3. Wrong dosage (calculation error in potencies of 10)
4. Bad legibility of drug prescriptions
5. Faulty/missing information of drug therapy with/after discharge
6. Transfer errors when copying prescriptions

Source: Stiftung für Patientensicherheit: Problemfelder (Hot-Spots) in der Patientensicherheit; Schweizerische Ärztezeitung 2008;89: 24

Day medication prepared according to administration times

In order to guarantee a smoothly running day on the ward, the medication must be well planned and prepared in advance. Based on correct care documentation, all drugs for a whole day are put into the appropriate compartments of the medicine dispensers according to the prescribed administration times. Control of the prepared medication and their administration times is thus secured.



Absolute concentration while preparing the medications.



Avoiding errors

- Check the patient's identity
- Ensure that dosage calculations are checked independently by another health care professional before the drug is administered
- Make sure that prescription, drug, and patient match
- Make certain that the medication is given at the correct time
- Minimise interruptions during drug rounds

Source: Medication errors, DJP Williams, J R Coll Physicians Edinb 2007; 37:343–346

Reducing errors through the four-eyes principle

Drug therapies (medications) for all patients should be ideally prepared during a calm period. This task requires the highest level of concentration and should never take place at a patient's bedside. Before administering medicines to a patient, drugs prepared in a medication dispenser should be controlled by a second person to aid in reducing medication errors.



Donati, Ruth

Birth Date: 23.01.1926
Address: Senior Residences Bellevue, Seestrasse 23, 8002 Zürich, Ward 3B, Room No. 24

Doctor: Dr. Pierre Lamaze
Pharmacy: Löwenapotheke, Bahnstrasse 8, 8000 Zürich

Prepared on: 06.12.09
Prepared by: B. Smeets

valid: 07.12.09 - 13.12.09

Medication	07:00	10:00	12:00	16:00	21:00	Information	Stock
ACTOS 300 Tab. (Dose)	0	0	1	0	0	Tab. - round, white, oval, double Ch: 710450 (1, 8.06)	1000 Stk. 13.12.09
RUTHYRDA 120 mg Tab. (Dose)	1	0	0	0	0	Tab. - round, white, double, double beveled Ch: 146552 (1, 8.06)	1000 Stk. 13.12.09
DAIN 49 retard Naloxone Caps. (Dose)	0	0	1	0	0	Hard caps. - yellow, opaque, with double Ch: 203814 (1, 8.06)	1000 Stk. 07.03.10
SILBARTY Caps. (Dose)	0	1	0	1	0	Hard caps. - yellow, opaque, with double Ch: 203814 (1, 8.06)	1000 Stk. 07.03.10
METOPROLOL 200 retard Tab. (Dose)	0	0	0	1	0	Soft caps. - yellow, opaque, top double Ch: 301005 (1, 8.06)	1000 Stk. 02.01.10
MAGNE SIOCARD Powder (Dose)	0	0	0	0	1	Powder - white, round, double in diameter Ch: 004452 (1, 8.06)	1000 Stk. 04.01.10
GLIPAZIN ER (Dose)	0	0	0	0	1	Powder, granules in water Ch: 001044 (1, 8.06)	1000 Stk. 07.02.10
MEFOPRAN AL 500 Tab. (Dose)	0	1	0	0	0	Tablets - round, white, double in diameter Ch: 302700 (1, 8.06)	1000 Stk. 21.12.09
MEFOPRAN AL 500 Tab. (Dose)	0	1	0	0	0	Tablets - round, white, double in diameter Ch: 302700 (1, 8.06)	1000 Stk. 26.12.09
MEFOPRAN AL 500 Tab. (Dose)	0	1	0	0	0	Tablets - round, white, double in diameter Ch: 302700 (1, 8.06)	1000 Stk. 22.01.10
MEFOPRAN AL 500 Tab. (Dose)	0	1	0	0	0	Tablets - round, white, double in diameter Ch: 302700 (1, 8.06)	1000 Stk. 22.01.10

Additional order: Decubitus Patch 1 OP

Important: Penicillin Allergy, Plaster Allergy, Lactose intolerance

WIEGAND® MediDispenser

- The sliding lid opens in one direction only
- This secures the administration sequence
- 4 to 12 flexibly adjustable compartments (1 for each administration)
- Hygienic and economical (semi disposable)
- Tight sliding lid



Adaptable medication processes

Medication processes differ substantially in terms of the logistical framework in which they are applied. A nursing home, operating with centrally or even externally prepared medications has different workflows to the medical or surgical department of a hospital. The more acute the treatments are, the shorter are the processes and operating times and thus the higher are the corresponding needs for quality in care and the costs of an incorrect treatment.



Decentralised ward- and satellite pharmacies – cost-efficient, organised and space-saving

- Provide an excellent overview and fast access
- Low stocks and good availability due to Kanban principle (always 2 units/OP)
- Application of “first in - first out” principle of storage, provides an effective control of expiry dates and lots of the drugs
- The central pharmacy steers the quantity of supplies and determines the permitted pharmaceutical products (cost control)
- Individual drug costs are charged at time of consumption
- Fast turnover of drugs without temporary storage in BIN System



WIEGAND® Medication Prepare Station for 40 patients

Improving efficiency

When using the Day System for the medication process, the nurses prepare the prescribed drugs – after the doctor’s visits – for the next 24 hours. Preparing for a 7-day period (Week System) significantly optimises operational flows in retirement- and nursing homes. To keep patients in a «normal condition», a long-term therapy with a regular, stabilizing drug therapy is applied. Therefore medications are preferably prepared for a whole week.

Professional WIEGAND® Medication Prepare Stations

Empirical research illustrates that when using a professionally furnished Medication Prepare Station, medicines for 20 patients can be prepared in approximately one hour. Decentralised ward- and satellite pharmacies with a Medication Prepare Station are set up to manage between 40 and 100 patients.



WIEGAND® Distribution Tray
8 patients - 24 hours

WIEGAND® Week Tray
1 patient - 7 days

BIN System combined with WIEGAND® Medication Distribution System

When using BIN Systems, a patient’s drugs are kept in individual containers. Although these systems need additional storage space, they are quite commonly used and can be easily combined with the WIEGAND® Medication Distribution System in order to be able to prepare medications in advance. In this way, patient safety can be substantially increased.



WIEGAND® medication concepts

- Enhance existing systems, in order to increase patient safety
- Cost efficient investment to reduce the expense of medication errors
- Replace inefficient and outdated systems to reduce liability risks
- Sustainable, modular system leading to greater flexibility in application and investment security

Improvements in medication- and patient safety
can only be achieved using the correct tools
and applying clearly defined work processes.

www.wiegand.ch



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WIEGAND®
+ Medication Safety