GOOD MEDICATIONS SAFETY PRACTICES IN EUROPE

COMPENDIUM I

RESULTS OF THE IMPLEMENTATION

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THE IMPLEMENTATION PROCESS

EUNetPaS (European Union Network for Patient Safety) is a 30-month project involving all 27 EU Member States and EU Stakeholders co-financed by the European Commission. It started in February 2008 and is coordinated by the French *Haute Autorité de Santé*. The selection and implementation of good practices in reducing medication errors in European hospitals is one of the four core activities of EUNetPaS.

In this project, the work devoted within work package 4 (WP 4) to medication safety is supervised by the European Hospital and Healthcare Federation (HOPE) and involves partners representing nurses (European Federation of Nurses), hospital pharmacists (European Association of Hospital Pharmacists) and pharmacists (Pharmacist Group of the European Union), as well as 11 Member States (Austria, Belgium, Denmark, Finland, France, Greece, Ireland, Lithuania, Portugal, the Netherlands and Italy).

One of the aims of WP 4 was to build medication safety recommendations on the basis of the implementation of a limited number of good selected practices from one country to another.

At an early stage of the project it was intended that three Member States would provide good practices for seven others. Finally all Member States as well as European stakeholders were invited to take part in collecting good practices reducing medication errors. 63 good practices originating from 16 Member States were collected. The selection was done with the help of a matrix differentiating three aspects in each good practice: systematic approach (prescription, communication and administration), actors' involvement (doctors, nurses, pharmacists and patients and transferability (question of refinement and resources). It was also considered that the selected good practices should be limited in number, adapted to the time frame of the project, easy and not expensive to implement. On those bases, the partners selected seven good practices.

Regarding the hospitals for the implementation, the partners agreed on a single selection criterion: the hospital should commit itself to implement the good practice and to evaluate its implementation. Hospitals involved in the implementing process of the selected good practice(s) were recruited with the help of the WP 4 partners. It was then up to each hospital to choose the good practice(s) to implement. They then received implementation tools corresponding to the good practice. Hospitals did not get any financial support from the EUNetPaS project for the implementation. The hospitals that volunteered had in theory nine months starting in April 2009 to implement one or several of the seven good practices.

Originally, it was intended in the project that three hospitals in each participating Member States would implement a good practice. At a later stage there were finally more than three hospitals in each of eight Member States expressing an interest. So instead of 30 implementations it was 107 implementations that were supposed to be carried out. Finally, at the end of the process 75 evaluation forms were gathered coming from 66 hospitals of 11 Member States.

THE EVALUATION PROCESS

Evaluation forms of each of the seven good practices were designed by the WP 4 partners. The forms for each of the seven evaluation forms were slightly adapted to their respective good practice. But all forms had in common to be divided into three parts: description of the situation before, during and after the implementation.

- **Before the implementation**

a) Can you describe the situation or problem in medication safety you wanted to address by implementing the good practice you have chosen?
b) Could you give some indications on the baseline situation in medication safety in your unit?

- **During the implementation**

a) Which procedure was followed to identify/select where good practice will take place?
b) Who (role and position in the organisation) and/or which committee has been in charge at all steps of implementation?
c) Was the time appropriate, i.e., was there enough time to put the practice into place?
d) Have you used the example given by the good practice?
e) Have you used any existing elements in the hospital?
f) Have you created your own initiative? If yes, why? What was needed to adapt?
g) What is the process and who were the professionals involved?
h) What have been the specific actions to reach each target group? (e.g.: intranet, newsletter, staff meetings)
i) Involved persons in this meetings
j) Which activities and by whom have been taken to implement the good practice?
k) How did you organise it to implement it into the daily routine?

- **After the implementation**

a) Can you describe the outcome situation after the implementation period?
b) On the basis of your experience do you consider that this good practice would be transferable in other units in the hospital? In other hospitals in your country?
c) Have you been using evaluation tools already available in the hospital to evaluate the impact (even subjective) of the initiative?
d) If yes, have you noticed any impact?
e) Have you been using evaluation tools already available in the hospital to evaluate the impact (even subjective) of the initiative?
f) In case the initiative was done only in one (some) unit(s), will the hospital expand the initiative to other units?

Once they had selected the good practice(s), hospitals received as background documents, the description of the good practices they had chosen, as well as their respective evaluation forms.
The hospitals finally sent back 75 evaluation forms. The first analysis of those evaluation forms was done by Carita Linden-Lahti (M. Sc. Pharm, Division of social pharmacy, Faculty of Pharmacy, University of Helsinki), then by the WP 4 core group (HOPE, EFN, EPHA, PGEU, AT, FI and BE).

THE RESULTS OF THE EVALUATION: GENERAL OVERVIEW

As mentioned, the aim of this component of the project was to implement a limited number of good selected practices from one country to another to build medication safety recommendations.

The results expected from the evaluation of the implementation was then to see what worked, what did not and, most important, why. In general it proved possible to transfer good practice to hospitals over the borders and to get a useful feedback.

The present analysis had of course to face several challenges (language issues, missing answers for example) but the evaluation forms collected provide all the necessary ingredients to feed the recommendations.

66 hospitals implemented a total of 75 good practices. In most cases they considered the implementation a success (n=51, 77%). In a limited number of cases the implementation failed (n=4, 6%). Some implementations were not completed or at least not completed in all the forecasted units (n=11, 17%).

Compared to the ambitious 113 good practices were planning on implementing, over half (58%) of them were finally implemented in the hospitals. In 9 out of 38 cases (24%) evaluation forms were sent explaining why hospitals were not able to complete the implementation. The resources problems or the difficulties in approving or planning the implementation were often reported as a main reason; in particular for implementations that requested major changes of the processes or new equipments or material. Urgent situation such as influenza pandemic was also mentioned.

Table 1. Implementation of the seven good practices (n=75 evaluation forms)

Good Practice	**Hospitals planning to implement the practice** (n)	**Members States involved in implementing the practice - report given** (n)	**Hospitals that started implementation** (n, %)	Implementation failed (n, %)	Implementation partly succeeded or still on-going (n, %)	Implementation succeeded (n, %)
Bed dispensation° 1	10	Ireland, Portugal (3), Austria	5 (50%)	0	0	5 (100%)
Bed dispensation° 2	10	Lithuania, Ireland (2), Italy (2), Greece (3)	8 (80%)	0	1 (14%)	7 (86%)
Safety vest	28	Finland (4), Ireland (6), Lithuania (2), Italy (2), Portugal (4), France	16 (57%)	3 (19%)	4 (25%)	9 (56%)
Medication reconciliation at admission and discharge	17	Ireland (2), Portugal (5), France (3), Italy, Belgium	12 (71%)	1 (8%)	2 (17%)	9 (75%)
Discharge medication list for patients	21	Finland, Ireland (2), Portugal (4), Italy (2), France	8 (38%)	0	1 (13%)	7 (87%)
Medication reconciliation at discharge	23	Denmark (5), Lithuania, Ireland, Italy (3), Portugal (4), Austria, The Netherlands (2)	16 (70%)	0	3 (19%)	13 (81%)
Sleep card	4	Ireland (2), Italy, Austria	2 (50%)	0	0	2 (100%)
Total	**113**	**75 (66%)**	**66 (58%)**	**4 (6%)**	**11 (17%)**	**51 (77%)**

To implement a good practice, four to seven meetings had to be organized: decision meetings, planning meetings, meetings with the head of units, staff meetings, training and individual meetings.

The planning and implementation process engaged in almost all hospitals a multidisciplinary or an interdisciplinary professional team, with different kinds of healthcare professionals: hospital board members, managers, heads of departments, members of committees, heads of units, doctors, nurses, ward and clinical pharmacists, members of safety development groups, safety coordinators, members of accreditation teams, quality department workers, education facilitators, residents and students.

The selection of the units that implemented the good practices was usually done on a voluntary basis. In a few cases the selection was done by the central decision makers. The evaluation forms showed different kind of motivations: identified medication safety problems; estimated risk of medication errors; potential positive impact on a large number of healthcare professionals; potential positive impact on high risk patients; complex medication management. Others mentioned facilitators more than motivations: having a team and knowledge at their disposal at unit level, access to IT services needed for the implementation or even having already implemented a similar practice.

The hospitals that did not manage to start the implementation process in the suggested time frame explained that they had faced other big changes or were involved in other projects at the same time. In some cases internal resistance delayed the implementation. Originally several hospitals planned to implement more than one good practice but they did not succeed arguing that they had limited resources.

If the practice was successfully implemented in one or more units (Table 1.), the hospitals were confident in most cases that it could be implemented also in other units or hospitals, with adaptation to local reality. When practices have been successfully implemented, some hospitals tried or are trying to motivate professionals to continue using the practice as part of daily routine and to spread it to all healthcare professionals. When they mention planning to expand the practice to other or all units, they sometimes wait the impact results on medication safety or the availability of resources.

In most cases they do not mention using systematic evaluation tools. But in reality staff and patient/family members' interviews or surveys, audit tools, observational studies or medication errors reports before and after implementation are mentioned. Collection of information on the impact of the good practice on medication safety was then in most hospitals based on the perceptions of professionals or patients. Only few hospitals used the evaluation tools and the evaluation was systematic.

In several hospitals the evaluation of the impact was still ongoing and there was little information about the implementation. Especially when major changes in medication processes happened, the implementation timeframe was considered too tight to evaluate the impact. The hospitals that volunteered had in theory nine months starting in April 2009 to implement one or several of the

seven good practices. In reality, for various reasons, most hospitals had less than nine months to cover all the implementation including the evaluation.

Each good practice and each implementation faced its specific barriers and challenges to overcome. Some of them were common, within or between the countries. There are of course practical, organisational and resources issues, but also cultural issues, relating to general, professional and patient safety cultures.

THE RESULTS OF THE EVALUATION: BY GOOD PRACTICE

BED DISPENSATION 1

Administration of medications per dose directly at patient's bed.

	Name	Description of the good practices	Reference country
GP 1	Bed dispensation 1	This good practice reduces the risk of confusion: patients receiving wrong medication or dose; or possible intake by wrong patient. The right patient gets the right medication at the right time. The healthcare professional preparing the medication is also administering it. Medications are administered per dose directly at the patient's bed. Mobile carts are used to bring a laptop and a box with the prescribed medications (in original packaging) to the patients' rooms. The implementation of reference times for medication administration was a requirement. The physicians decided about the reference times per ward. An evaluation is done quarterly (per dose, per day): do patients get their medication at the right time and do they take them?	Austria

The good practice "Bed dispensation 1" was implemented in 5 hospitals (Table 2). The problems identified in those hospitals before the implementation were: different nurses were involved in preparing and administering the medication; there were medication errors and near misses; there was a need to improve IV medication administration practices.

Table 2. Evaluations of *Bed dispensation 1* implementation
(n=5, + yes, - no, +/- partly/maybe)

Hospital	Example used	Initiative needed to adapt	Time schedule appropriate	Evaluation of the impact made	Practice transferable	Plans to expand the practice to other units	Added value for unit/hospital/patient
1	+	-	-	+	+	+	+
2	+	-	+	+	+	+	+
3	-		+	+	+	Already in use	+
4	+	-	+	-	+	+	+
5	+	-	+	+	+/-	already in use	+

The good practice appeared to be consistently followed in most hospitals. However some of them were in fact using the existing hospital practices and others slightly adapted it to their internal needs.

Some implementations were similar to the good practice "Bed dispensation 2", because it involved also the electronic record accomplishment at the bedside. The difference between "Bed dispensation 1" and "Bed dispensation 2" was not considered as obvious for some hospitals. Perceived originally as involving mostly nurses, it was in fact noticed that the implementation process was not possible without the involvement of other healthcare professionals. Changes affected also other healthcare professionals' activities and needed their expertise.

For this good practice possible barriers to be considered included: resistance to change (but it is true for all good practices) and the availability of (trained) human resources.

The given time frame was assessed as appropriate for most hospitals. Some hospitals had the possibility to link it to their use of online prescriptions, which was considered an added value for the implementation.

Hospitals gathered professionals and patients perceptions and some used evaluation tools. When they evaluated the impact, they noticed an improved patient satisfaction in the dispensation process and a reduction in risks and errors. This good practice was considered transferable to other hospitals and units. The hospitals that implemented the practice only in some units were planning to expand the practice to the other units.

BED DISPENSATION 2

Administration of medications per dose directly at patient's bed.

	Name	Description of the good practices	Reference country
GP 2	Bed dispensation 2	This good practice reduces the risk of confusion: patients receiving wrong medication or dose; or possible intake by wrong patient. The right patient gets the right medication at the right time. The same nurse, using a mobile cart, is responsible for the preparation, checking "right patient, right medicine," the administration, the supervision of the administration and then the documentation of the medication. This is done directly on location (in patient's room, or directly in front of the door) the medications are taken out of the original packaging and put into the medicine cups. It is immediately administered and the documentation of the step follows very soon afterwards. Each administered medicine is signed off by the nurse, and then put into the journal with the date, time, and name of the acting person. Definite administration times have been set: in the morning, at noon, at dinnertime and at night. When these times are not kept, this results in a medication error entry.	Austria

The good practice "Bed dispensation 2" was implemented in 8 hospitals (Table 3).

Pre implementation medication safety issues included: look-alike medicines, safety concerns in medicine dispensing and administration, problems with medicines' allergies and interactions or staff problems (more than one nurse responsible for medicine administration). Medication carts were not always brought to the bedside and patients were not always supervised when receiving medications. In one case, the evaluation form mentioned the aim of raising awareness of the nurses regarding their professional and legal responsibility during the medication administering.

Table 3. Evaluations of *Bed dispensation 2* implementation (n=5, + yes, - no, +/- partly/maybe)

Hospital	Example used	Initiative needed to adapt	Time schedule appropriate	Evaluation of the impact made	Practice transferable	Plans to expand the practice to other units	Added value for unit/hospital/patient
1	+	-	+	No information available	No information available	No information available	No information available
2	+	-	+	Ongoing staff question.	+	+	No information available
3	No information available	No information available	No information available	-	+	No information available	No information available
4	+	No information available	+	+	+/-	-	-
5	+	-	+	+	+	+	+
6	-	+	+	ongoing	+	+	+
7	-	+	+	ongoing	+	+	+
8	-	+	+	ongoing	+	+	+

Three hospitals did not use the good practice as a model for implementation, four did. In all cases some adaptations were made. Some already had bed dispensing elements in their medication processes. Some had already used the bed dispensation practice, but wanted to be sure that the practice was followed in a proper way.

Barriers to the implementation were identified. Frequent changes in staff, resistance to change, lack of space for carts, other important changes taking place were mentioned as factors to be taken into account in the implementation.

Timeframe seemed to be appropriate to implement this practice.

According to the evaluations received, this practice seems transferable. But its impact on medication safety is not clearly described in the evaluation forms.

3. SAFETY VEST

	Name	Description of the good practices	Reference country
GP 3	Safety vest	This good practice aims at avoiding difficulties experienced during the dosing in medicine in wards. There is potentially a lot of disruptions, usually due to the location where dosing takes place and to the circulation in the ward. Disruptions are very stressful and increase the risk of medication errors. Errors are not a reflection of the nurse's qualifications, but of the environment and working conditions. The solution is then not to change the behaviour of the person dosing, but to create more awareness of the need to be undisturbed. To minimize the noise level and the disturbance for the staff when dosing medicine, it is suggested to implement the use of a (yellow) Safety Vest with "Do Not Disturb" written on the back in the ward. The nurse doing the dosing is wearing a safety vest with "Do Not Disturb" on the back.	Denmark

The good practice "Safety vest" was implemented in 16 hospitals (Table 4).

The problem of the disturbance, while nurse or pharmacist was dispensing, dosing or preparing the medicine, was noted in all hospitals as a reason to implement the good practice. Medication administration was also considered as unsafe because of other colleagues, patients and their families' interruptions. In one case the safety vest was already implemented earlier, but had not been successful.

Before the implementation, some hospitals had done baseline studies on the medication safety situation in wards. But few of them suggested that dispensing errors were the most prevalent type of errors in wards. The disturbance rate ranged between 3,2 to 8 times per distribution (or 26 interruptions/hour).

The evaluation of the impact of this practice was based on filled evaluation forms and observations. The implementation in those hospitals reduced disturbances although other activities than the safety vest practice affected also the results. The reduction of interruptions seemed in some cases to depend on the ward's structure. The implementation of the safety vest was more successful in a rather stable ward environment or in wards where there was no separate dispensing rooms.

Table 4. Evaluations of *Safety vest* implementation (n=16, + yes, - no, +/- partly/maybe)

Hospital	Example used	Initiative needed to adapt	Time schedule appropriate	Evaluation of the impact made	Practice transferable	Plans to expand the practice to other units	Added value for unit/hospital/patient
1	-	[redacted]	+	+	+/-	Already in use	+/-
2	+	No information available	+	+	+/-	No information available	+/-
3	+	-	+	-	+	+/-	No information available
4	-	[redacted]	+	+/-	No information available	No information available	No information available
5	+	-	+	+	+	+	+
6	+	+	+	+	-	-	-
7	+	-	-	+	+	+	+
8	+	-	+	-	+/-	-	No information available
9	+	+	-	+	No information available	No information available	+/-
10	+	+	-	-	+	+	+
11	-	[redacted]	+	+	+	+	+
12	No information available	No information available	+	-	+/-	No information available	+/-
13	+	-	No information available	+	+	-	+/-
14	+	-	-	+	+	+/-	+
15	-	[redacted]	+	+	+	+	+
16	No information available	+	+	+	+	+	+

The hospitals that planned to continue the pilot were satisfied with the outcome and stressed its added value and the reduction of medication errors. They estimated that the patients felt more satisfied with the new situation. But on the opposite, the utility of this practice was not clear for other hospitals. There were still many units where professionals did not see the added value of the vest and their hospitals were uncertain to expand this practice. They had doubts that all the nurses would continue to use the practice once the project ends.

This practice was often piloted only in some units of the hospital. The original model of the safety vest was usually followed, but was modified in four hospitals. In one case the hospital followed the practice it had already developed. The colour of the vest and the material was different depending on the country and its culture. Some hospitals thought that the vest itself was not usable and changed it to trolley signs or pins.

The barriers mentioned referred to cultural issues such as the colour, or the vest itself, or the resistance to change but also to organisational issue and even the perception of a risk of infection.

The timeframe for the implementation was considered appropriate, except when the hospital faced other changes at the same time. It was however considered too short for an extensive evaluation.

The safety vest was viewed as an easy practice to transfer to other units or hospitals. Some of the units which were not able to implement the practice in one ward said that good practice may be applicable in another ward or hospital. But the major challenge remained with the reaction of the healthcare professionals.

Although there have been some difficulties to implement the safety vest and to put it in place permanently, the implementation process changed many other work processes that will ensure a more peaceful distribution situation. Implementation of this initiative was delayed in some instances because of the issue of source a suitable vest or tabard.

4. MEDICATION RECONCILIATION AT ADMISSION AND DISCHARGE

	Name	Description of the good practices	Reference country
GP 4	Medication reconciliation at admission and discharge	A pharmacist, nurses and a physician in an acute care ward work together in a team about medication reconciliation of medicine at the admission and the discharge. The team members look at the medication with different perspectives. They learn from each other and experience where the errors occur. A pharmacist visits the ward every day. The pharmacist goes through medical records by admission and medical records at discharge. Audit of some medical records is performed each month. Then every month the result of the audit is given during a meeting to the physicians and the nurses. New nurses and physicians are offered information and education every month about medication reconciliation. It takes place one month after they started at the hospital. Teaching is done by a nurse who is a specialist in medical record and by a pharmacist.	Denmark

The good practice "Medication reconciliation at admission and discharge" was implemented in 12 hospitals (Table 5).

The lack of effective way to detect and reduce medication errors was identified as the main problem before the implementation of this practice. Other specific problems were observed: clinical/ward pharmacist not involved in an effective way; problems identified in patients' admission and transfer; pharmacists in the community or GPs informed about the changes in medication; lack of discharge medication records; insufficient patient education and consequences on adherence to therapy.

Table 5. Evaluations of Medication reconciliation at admission and discharge practice (n=12, + yes, - no, +/- partly/maybe)

Hospital	Example used	Initiative needed to adapt	Time schedule appropriate	Evaluation of the impact made	Practice transferable	Plans to expand the practice to other units	Added value for unit/hospital/patient
1	-	[redacted]	+	+	No information available	No information available	+
2	No information available	No information available	+	-	-	-	-
3	+	+	+	-	+	+	+
4	-	[redacted]	-	-	+/-	+/-	No information available
5	No information available	No information available	+	-	+/-	No information available	No information available
6	+	+	-	+/-	+	+/-	+
7	-	[redacted]	-	-	+/-	+/-	+/-
8	-	[redacted]	-	+	+	No information available	+
9	-	[redacted]	+	+	+	+/-	+
10	-	[redacted]	+	+/-	+	+	+
11	+	+	-	+	+/-	-	+
12	No information available	No information available	-	+	+	+	No information available

Most of the hospitals did not use the good practice as presented but used it as a guideline for implementation. They modified it according to their needs and the nature of the hospital. In some, elements or parts of reconciliation process were already there. The patient education and connection with other health care professionals was observed in some evaluation forms, this was however lacking in many.

Medication reconciliation (both at admission and/or discharge) was a practice in which pharmacists played a major role in the implementation as well as in the execution. The implementation required a permanent presence of the pharmacist in the unit. It was then seen transferable to other hospitals or units, assuming that the unit had pharmacist in the unit.

The implementation of the practice on medication reconciliation at admission and discharge created important changes in the medication process. The timeframe was then perceived as too short and as a consequence half of the evaluations forms were incomplete and were not able to evaluate the impact.

Barriers mentioned were mostly related to resources, in particular staff as this is facilitated with the presence of hospital pharmacists, is time consuming and much more difficult without

electronic health record. The mobility of patients between units was also perceived as an additional barrier.

Almost all hospitals considered that this practice is transferable to other units and hospitals, if there is a possibility of the pharmacists' services or greater involvement of nurses and doctors. The ideal situation was perceived as involving a pharmacist in every unit. Those who considered this practice as not transferable argued that it is too time consuming or that it has no extra value for professionals or patients.

5. DISCHARGE MEDICATION LIST FOR PATIENTS

	Name	Description of the good practices	Reference country
GP 5	Discharge medication list for patients	This good practice aims at reducing the risks linked to the fact that discharged patients have limited knowledge on what medication they were taking, why they were taking it and at what time they should take it. The doctor writes a discharge medication list for the patient, in accordance with the patient's medical record that clearly states the indication and at which time the medicine should be taken. By discharge the health professional orally goes through the discharge medication list with the patient. To be sure that this was followed through, a tick box secure that the patient really got the information. This list precise what medication they are taking, why they are taking it and at what time they should take it. The patient should be remembered to show this list when visiting a health professional after discharge from the hospital. The discharge medication list should clearly highlight the issuing date.	Sweden

The practice "Discharge medication list for patients" was implemented in 8 hospitals (Table 6).

The hospitals that choose this practice for implementation had different perspectives regarding the medication safety problems. The perception that patients were not aware of their medication, its purpose or use and affected their compliance was the most common observed issue. This was perceived as affecting especially older patients and special patients' groups. In other settings, patients had only a medication list of the new medications. The problem occurred also at the patients' admission to the hospital where they did not have any updated medication list. This lack of patients' knowledge related to the medication has been seen as a risk factor in medication errors. The situation review was mostly based on the notice of the problem, but some hospitals did also preliminary investigation on the patients´ medication knowledge.

Table 6. Evaluations of Discharge medication list for patients practice (n=8,+ yes, - no, +/- partly/maybe)

Hospital	Example used	Initiative needed to adapt	Time schedule appropriate	Evaluation of the impact made	Practice transferable	Plans to expand the practice to other units	Added value for unit/hospital/patient
1	-	[redacted]	+	+	No information available	No information available	+
2	+	+	-	+/-	+/-	No information available	+
3	-	[redacted]	No information available	+/-	+	+/-	+
4	-	[redacted]	+	+	+	+/-	+
5	+	+	+	+	+	+	+
6	-	[redacted]	-	+	No information available	+	No information available
7	-	[redacted]	-	-	+	-	+
8	+	-	No information available	-	No information available	No information available	No information available

Only few hospitals used the given good practice as a model. They had to adapt it to their own processes, as the healthcare professional (pharmacists, nurse and doctor) that gives the medication information to the patient varies. It was observed that the procedures were slightly different within the hospital that implemented the practices in more than one unit. Some hospitals also put into practice the possibility of the medication reconciliation or "the check up" calls to the patient after his/her discharge. In some cases the hospitals had already the medication reconciliation process in place, but they wanted to add this practice as a part of the process.

The implementation needed in most cases a multi-professional agreement regarding the changes in the process. In all hospitals this practice was piloted only in a few units, but after the implementation the practice was evaluated as transferable to the other units and hospitals when there were appropriate resources. It took time to find a common approach with all professional groups and to plan the practice implementation so the timeframe was viewed as rather short. Because of tight time period, the evaluation of the impact of the practice on medication safety was ongoing or missing in many hospitals.

All kind of barriers were identified: organisational, cultural, and practical ones. However, all hospitals that started the implementation of the practice were able to complete it. They were also very satisfied with the implementation stressing the added value for health care professionals and patients. Patients and their relatives also perceived this as a good system and the discharge medication list increased the awareness of the medicines that have to be taken at home. Some hospitals noticed that there was a need for further changes or development of practice: implementation in a daily routine, and pharmacists' interventions before planning the discharge.

6. MEDICATION RECONCILIATION AT DISCHARGE

	Name	Description of the good practices	Reference country
GP 6	Medication reconciliation at discharge	Written discharge information including a Discharge Medication Report is mandatory when a patient is discharged from the hospital. This information is structured, written for the patient, given to the patient and a copy is sent with the patient's consent to the General Practitioner, community pharmacists or other healthcare professional of the choice of the patient on the day of discharge. This information contains a Medication Report, a summary of relevant medication changes (due to allergies, resistencies, etc) actively performed during the hospital stay (what and why). The Medication Report is the result of the reconciliation process between healthcare professionals.	Sweden

The good practice "Medication reconciliation practice at discharge" was implemented in 16 hospitals (Table 7).

The main reason for the implementation was the lack of systematic approach for medication reconciliation. At patient's discharge there was an uncertainty whether the medication list was correct or not. Updating could increase the risk of a wrong or duplicated medication. Other problems identified by the hospitals were the lack of patient's education in discharge situations or the lack of a single patient's document where all medication notices and changes are made. The goal of this practice was to improve the medication safety and to reduce the readmissions in hospital, especially of older patients.

Half of the hospitals did not consistently implement the good practice. In most cases the hospitals implemented parts of the good practice e.g. a medication list for patient or an electronic patient medication record. The communication with other health care professionals after the discharge was in most cases limited or at least was not described in the evaluation forms. Although the practice related to the medication reconciliation at discharge, some hospitals when implementing it included also some kind of reconciliation at admission or in other cases the admission part was set up earlier. In some countries the hospitals preferred to follow the national safety programs focusing on the medication reconciliation, some other hospitals expressed their preference to use the medication reconciliation models developed already within the country or a border country. Many hospitals involved a pharmacist in the medication reconciliation practice which was not really indicated in the given example.

Table 7. Evaluations of Medication reconciliation at discharge practice (n=16, + yes, - no, +/- partly/maybe)

Hospital	Example used	Initiative needed to adapt	Time schedule appropriate	Evaluation of the impact made	Practice transferable	Plans to expand the practice to other units	Added value for unit/hospital/patient
1	+	-	-	+/-	+	No information available	+
2	-	[redacted]	-	+/-	+	+	+
3	-	[redacted]	+	+	+	+	+
4	No information available	+	-	-	+	No information available	No information available
5	-	[redacted]	-	+	+	Already in use	No information available
6	-	[redacted]	No information available	+	No information available	+	No information available
7	-	[redacted]	No information available	+	+	+	No information available
8	+	+	+	+	+/-	+	+
9	-	[redacted]	+	+/-	+	No information available	+
10	-	[redacted]	No information available	No information available	No information available	No information available	+
11	+	+	-	+/-	+/-	+	+
12	+	-	-	+/-	+	No information available	+
13	-	[redacted]	-	-	+	+/-	+/-
14	+	No information available	+	+	+	+/-	No information available
15	-	[redacted]	-	-	+	No information available	+
16	-	[redacted]	-	+	+	+	+

Barriers identified here were mostly related to human resources and training. Culture hindering factors were also mentioned as well as organisational ones such as communication with other healthcare providers.

The timeframe given for the implementation was considered as too tight. It was in most cases appropriate for the practice's implementation, but not for the evaluation of the impact. The hospitals were very satisfied with the practice and the effects it had on medication processes. Many hospitals already expanded it to other or to all the units of the hospital or were planning to

implement it. Hospitals with error reporting systems, observed that Adverse Drug Events numbers' decreased. All hospitals consider this practice as bringing added value to patient care and increasing patient's compliance.

7. SLEEP CARD

	Name	Description of the good practices	Reference country
GP 7	Sleep card	This good practice aims at reducing the risks due to unnecessary treatment by sleeping pills. A team consisting of representatives from the unit and the pharmacist has designed a small plastic "leaflet" (the "sleep card"). On the "sleep card", different tips are given on measures that can be taken to help the patient sleep better, what sleeping medication is appropriate for older people and what options there are to medication, including avoiding medication. This "sleep card" is carried around by healthcare professionals.	Sweden

Only 2 hospitals completed the implementation (Table 8.)

The reason for selecting this good practice was for hospitals that the majority of their patients were elderly with sleeping disorders. Some units wanted more precisely to implement this good practice for the night shifts where there is often a need for the rapid solutions for sleeping problems.

Table 8. Evaluations of sleep card practice (n=2, + yes, - no, +/- partly/maybe)

Hospital	Example used	Initiative needed to adapt	Time schedule appropriate	Evaluation of the impact made	Practice transferable	Plans to expand the practice to other units	Added value for unit/hospital/patient
1	+	-	+	-	-	Already in use	+
2	+	+	+	-	No information available	+	+

The team implementing the good practice was defining the sleep disorders and then adapted the tool to those situations.

The sleep card is mainly meant for the health care professionals, but it was useful also for patients or their families. They could be trained or at least informed on correct sleep behaviour, proper use of medicines or medication interactions.

The implementation timeframe of the “sleep card” was viewed as appropriate, but not sufficient for the evaluation of the impact of the practice on medication safety. The evaluation of the impact was still ongoing in both hospitals, but they estimated that a sleep card brought an added value in the unit and to the patient. The acceptance of the staff for non drug solutions and measures to support the sleep has increased or the use of sleeping pills has been reduced.

One hospital implemented the sleep card in all units at the same time. It used the sleep card example as a model for its card. It stressed however that the example was hardly transferable as such in other hospitals with different structures and length of stays of patients. The other hospital was planning to expand the practice to the other units.