Safety in Health 2016, **2**(Suppl 1):9
DOI 10.1186/s40886-016-0020-y

Safety in Health

MEETING ABSTRACTS Open Access

Abstracts from the 4th Grazer Risk Day: Patient Safety in Routine

Graz, Austria. 21/09/2016

Published: 20 September 2016

A1

Meet the needs: Important questions for ICU relatives

Magdalena M. Hoffmann[1,2], Anna K. Holl[3], Harald Burgsteiner[4], Thomas Pieber[1,5], Philipp Eller[6], Karin Amrein[1]
[1]Division of Endocrinology and Diabetology, Department of Internal Medicine, Medical University of Graz, Graz, Austria; [2]Department of Quality and Risk Management, University Hospital Graz, Graz, Austria; [3]Department of Psychiatry, Medical University of Graz, Graz, Austria; [4]Department of Health Informatics and E-Health, FH JOANNEUM, University of Applied Science Graz, Graz, Austria; [5]Joanneum Research, Institute HEALTH, Graz, Austria; [6]Intensive Care Unit, Department of Internal Medicine, Medical University of Graz, Styria, Austria
Correspondence: Magdalena M. Hoffmann (Magdalena.hoffmann@klinikum-graz.at) - Division of Endocrinology and Diabetology, Department of Internal Medicine, Medical University of Graz, Graz, Austria
Safety in Health 2016, **2(Suppl 1):**A1

Background

Relatives in intensive care units (ICUs) are important partners in the decision-making process on the treatment of critically ill patients and provide a significant resource in the care and rehabilitation of patients [1].
Symptoms of anxiety, stress and depression are common in affected relatives who often face excessive demands [2]. The majority of family members report some level of anxiety, depression and stress [3], sometimes even resulting in post-traumatic stress disorder (PTSD). Importantly, an association between lack of information and PTSD has been reported [4]. It is therefore critical to provide accessible and sufficient information to meet the needs of families [5]. Consequently, we surveyed relatives about their information needs. The survey results form the basis of a randomized controlled trial.

Material and methods

Based on a questionnaire of Peigne et al. 2011 among ICU professionals and relatives we asked (N = 336) people (relatives, nurses, doctors, members of an ICU related group on the social network facebook) for their opinion. The questions could be ranked on a scale of 1 for 'not important' to 5 for 'very important', with 0 signifying 'not interesting at all'.

Results

The assessment of the importance of the topic differed between all groups (Table 1). The top five topics for relatives were 'crisis', 'my help', 'hospital germs', 'pain' and 'probabilities and assumptions'.

Conclusions

We noted significant discrepancies with regard to the prioritization of topics. Therefore, there is a high risk for inadäquate information. None of the top five topics for relatives featured among the top five (as well as ten) topics for doctors. Similarly, important topics for nurses and carers only minimally overlapped with those of relatives. This shows that ICU staff views on the importance of topics differ notably from those of relatives. These insights could be taken into account and used for structuring conversations with relatives, with potentially high impact.

The results present the basis for a continuing double-blind randomized study testing the impact on stress, anxiety and depression among relatives of information made available online.

Acknowledgements

We would like to thank the entire organization and their employees for supporting the ICU-Families campaign.

Competing interests

The authors have no competing interests. There was no funding.

References

1. Scheunemann LP, McDevitt M, Carson SS, Hanson LC, Randomized, controlled trials of interventions to improve communication in intensive care: a systematic review. 2011 Chest 139:543–554
2. Verhaeghe S, Defloor T, Van Zuuren F, Duijnstee M, Grypdonck M, The needs and experiences of family members of adult patients in an intensive care unit: a review of the literature. 2005 J Clin Nurs 14:501–509
3. Hosseinrezaei H, Pilevarzadeh M, Amiri M, Rafiei H, Taghati S, Naderi M, Moradalizadeh M, Askarpoor M, Psychological symptoms in family members of brain death patients in intensive care unit in Kerman, Iran. 2014 Glob J Health Sci 6:203–208
4. Azoulay E, Pochard F, Kentish-Barnes N, Chevret S, Aboab J, Adrie C, Annane D, Bleichner G, Bollaert PE, Darmon M, Fassier T, Galliot R, Garrouste-Orgeas M, Goulenok C, Goldgran-Toledano D, Hayon J, Jourdain M, Kaidomar M, Laplace C, Larche J, Liotier J, Papazian L, Poisson C, Reignier J, Saidi F, Schlemmer B, Risk of post-traumatic stress symptoms in family members of intensive care unit patients. 2005 Am J Respir Crit Care Med 171:987–994
5. Azoulay E, Pochard F, Chevret S, Lemaire F, Mokhtari M, Le Gall JR, Dhainaut JF, Schlemmer B, Meeting the needs of intensive care unit patient families: a multicenter study. 2001 Am J Respir Crit Care Med 163:135–139

Table 1 (A1). Results-Top 5

	Relatives		Doctor		Nurse		Facebook	
TOPIC	Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean
Crisis (e.g. blood pressure , delir…)	1	4,9	25	3,88	22	3,95	23	4,14
My help (e.g. participate actively…)	2	4,84	11	4,5	16	4,1	11	4,47
Hospital germs (e.g. hands disinfection, isolation…)	3	4,71	18	4,15	21	3,98	8	4,52
Pain (e.g. Treatment…)	4	4,7	11	4,5	6	4,59	6	4,57
Probabilities, assumptions (e.g. Discharge…)	5	4,67	15	4,35	19	4,02	20	4,26

A2

Daily use of the Surgical Safety Checklist: results of a real-time audit

Gerald Sendlhofer[1,2,3], Karina Leitgeb[1], Veronika Gombotz[1], Peter Tiefenbacher[1], Lars-Peter Kamolz[2,3]
[1]Department of Quality and Risk Management, University Hospital Graz, Graz, Austria; [2]Division of Plastic, Aesthetic and Reconstructive Surgery, Department of Surgery, Medical University of Graz, Graz, Austria; [3]Research Unit for Safety in Health, Division of Plastic, Aesthetic and Reconstructive Surgery, Department of Surgery, Medical University of Graz, Graz, Austria
Correspondence: Gerald Sendlhofer (gerald.sendlhofer@klinikum-graz.at) - Department of Quality and Risk Management, University Hospital Graz, Graz, Austria
Safety in Health 2016, **2(Suppl 1):**A2

Background

The correct use of the Surgical Safety Checklist (SSC) in daily routine is important in order to create a safe environment. Within the University Hospital Graz, the use of the SSC became mandatory five years ago, and since then, in regular intervals unannounced audits took place [1]. The audits revealed that in more than 90% of operations a SSC is used, however, just approximately 50% of SSCs-items are totally ticked off. That's why, a new instrument was implemented, in order to evaluate the use of the SSC in "real-time" in an operating room (OR).

Material and methods

The new tool allows the evaluation of SSC-use in real-time [2]. The so-called "patient safety feedback" includes checklist items to proof the use of the pre-operative checklist, antibiotic prophylaxis and Sign-in, Team-Time-out and Sign-out. The observers proof, if all necessary patient safety steps are correctly performed by healthcare professionals. The observation takes place by two independent employees, not working in an operating room. They have comprehensive knowledge of the perioperative process and are experts in risk management. Each checklist item was ranked on a 5-point-Likert-scale ranging from "1 = compliance is given", "4 = none compliance" and "5 = cannot be evaluated". Six operations were observed within one day (results are shown in mean ± SD and median). According to our internal monitoring tool, mean values between 1 and 1.5 are highlighted as "very good" (green), mean values between 1.6 and 2.0 are highlighted as "bad" (yellow) and values above 2.1 are highlighted as "insufficient" (red).

Results

The preoperative checklist was used for all six planned operations, however, some items on the checklist were not ticked-off (1.2 ± 0.4; median: 1.0). Antibiotic prophylaxis was given in most cases (1.3 ± 0.5; median: 1.0) in the time-frame as supposed (30–60 minutes before skin incision). In general, the Sign-In was done very good (1.2 ± 0.4; median: 1.0), the Team-Time-out (2.2 ± 0.8; median: 2.0) and the Sign-out was done incorrectly in almost all cases (2.4 ± 0.9; median: 3.0) (Fig. 1).

Conclusions

The use of the SSC often evokes criticism as healthcare professionals still do not see a benefit of using the SSC. Therefore, the correct use of the SSC must be trained to overcome these hurdles. Results also show that only measuring SSC-compliance (proof of available SSC and prove if checklist items are ticked off correctly) [1] paints a different picture when compared to results of "real-time audits" in an OR.

Acknowledgements

We would like to thank the entire organization and their employees for supporting patient safety initiatives.

Competing interests

The authors have no competing interests. There was no funding.

References

1. Sendlhofer G, Lumenta DB, Leitgeb K, Kober B, Jantscher L, Schanbacher M, et al. (2016). The Gap between Individual Perception and Compliance: A Qualitative Follow-Up Study of the Surgical Safety Checklist Application. PLoS ONE 11 (2): e0149212. doi:10.1371/journal.pone.0149212
2. Sendlhofer G, Leitgeb K, Kober B, Brunner G, Tax C, Kamolz LP. New ways to evaluate patient safety relevant topics: Patient-safety feedback. Z. Evid. Fortbild. Qual. Gesundh. Wesen (ZEFQ) 2016, in press. doi:10.1016/j.zefq.2016.05.008.

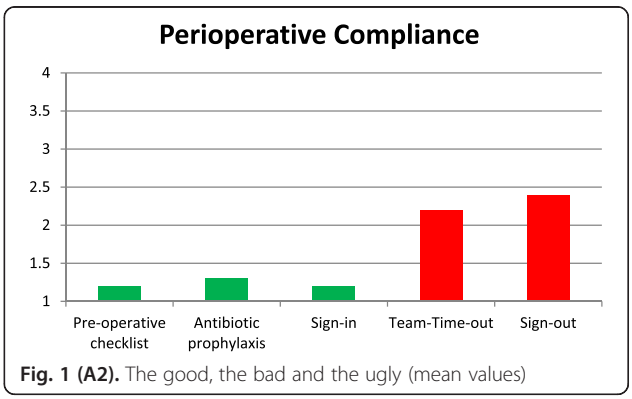

Fig. 1 (A2). The good, the bad and the ugly (mean values)

A3

Best-practice projects concerning patient safety in Austria

Gerald Sendlhofer[1,2,3,4], Karina Leitgeb[1,4], Magdalena Hoffmann[1,4], Sabine Papst[1,4], Susanne Gasteiner[1,4], Lars Peter Kamolz[2,3,4]
[1]Department of Quality and Risk Management, University Hospital Graz, Graz, Austria; [2]Division of Plastic, Aesthetic and Reconstructive Surgery, Department of Surgery, Medical University of Graz, Graz, Austria; [3]Research Unit for Safety in Health, Division of Plastic, Division of Plastic, Aesthetic and Reconstructive Surgery, Department of Surgery, Medical University of Graz, Graz, Austria; [4]Austrian Society for Quality and Safety in Healthcare (ASQS), Graz, Austria
Correspondence: Gerald Sendlhofer (office@asqs.at) - Department of Quality and Risk Management, University Hospital Graz, Graz, Austria
Safety in Health 2016, **2(Suppl 1):**A3

Background

In 2014 the *Austrian Society for Quality and Safety in Healthcare* (ASQS) was founded. The aim of ASQS is to connect healthcare experts especially in the field of quality and risk management. Thereby, ASQS focus on nationwide discussions concerning quality as well as patient safety tools and initiates implementation and sustainability science for patient safety relevant topics in Austria. A nationwide survey amongst Austrian healthcare experts was performed in order to identify "best-practice projects" in hospitals, which might be suitable to join it with others.

Material and methods

300 healthcare professionals were interviewed using an online-survey tool (Table 2), whereas one out of seven questions is shown here. The survey was open for one month and three reminders were sent out to all, who did not answer to the survey in the meantime.

Results

60 healthcare professionals (20%) responded to the online survey, whereas 53 (18%) answered to the given question. In total, 308 patient safety relevant projects were mentioned by Austrian healthcare professionals. The use of patient surveys seems to be the most frequently used tool in Austrian hospitals. Furthermore, safety tools to avoid medication errors, wrong patient identification and falls were also mentioned very often as "best-practice projects". Safety tools to avoid therapeutic induced infections, wrong site/wrong patient, patient handover failures or hand over and projects concerning patient empowerment were underrepresented when compared to others (Fig. 2).

Conclusions

More than 300 patient safety relevant projects were reported by 53 healthcare experts. In mean, approximately 6 projects were mentioned by each survey participant. Much effort is invested by each of these organizations in order to best implement projects to increase patient safety. However exchange of ideas and common science on implementation and sustainability is not available, so far. Healthcare experts, i.e. quality and risk managers would profit from a network of experts.

Competing interests
The authors have no competing interests. There was no funding.

Table 2 (A3). Question regarding "patient safety projects" in Austrian hospitals?

Item	ASQS will publish best-practice projects. Which project is in your healthcare environment a so-called „best-practice"-project, which you would like to join with others? 1. Safety tools to avoid a. Medication errors b. therapeutic induced infections c. wrong site/wrong patient d. wrong patient identification e. patient handover failures f. errors with Look-alikes, Sound-alikes g. hygiene aspects h. falls i. decubitus 2. Communication with patients 3. Communication in teams 4. Handover 5. Patient surveys 6. Patient empowerment

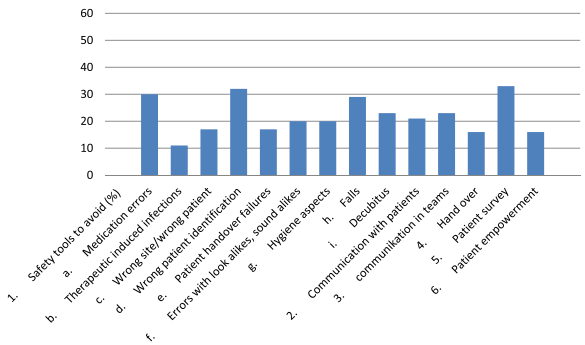

Fig 2 (A3). Counts of best-practice projects in Austrian hospitals

A4

Comprehensive Cancer Center Graz: evaluation of availability of mandatory healthcare professionals in tumorboards

Peter Tiefenbacher[1,2], Yvonne Müller[1,2], Gerald Sendlhofer[1,2,3,4]
[1]Department of Quality and Risk Management, University Hospital Graz, Graz, Austria; [2]Comprehensive Cancer Center Graz, University Hospital Graz and Medical University of Graz, Graz, Austria; [3]Division of Plastic, Aesthetic and Reconstructive Surgery, Department of Surgery, Medical University of Graz, Styria, Austria; [4] Research Unit for Safety in Health, Division of Plastic, Aesthetic and Reconstructive Surgery, Department of Surgery, Medical University of Graz, Graz, Austria
Correspondence: Peter Tiefenbacher (peter.tiefenbacher@klinikum-graz.at) - Department of Quality and Risk Management, University Hospital Graz, Graz, Austria
Safety in Health 2016, **2(Suppl 1):**A4

Background
Coordination of information, diagnosis and further treatment regime of patients with a malign tumor is essential and complex. Therefore, tumorboards (TB) are implemented, where representatives of radio-oncologists, oncologists, radiologists, pathologists and the respective surgical discipline meets in regular intervals to suggest the further management and treatment of patients with a malign tumor. For a working TB it is essential that all mentioned disciplines are present in the respective TB in order to discuss each case. At the Comprehensive Cancer Center Graz (CCC-Graz), twelve TB were available in 2014 and two of these were merged in 2015, which are hold in weekly intervals. The aim of this study was to evaluate the overall presence of requested disciplines retrospectively for each TB in order to generate further possible improvements.

Material and methods
Each TB as well as the presence of each discipline is documented in the hospital information system (HIS). Furthermore, the number of discussed patients and further suggestions for treatment for each case are documented (data not shown). Data from HIS were investigated for all TBs at the CCC-Graz in 2014 and 2015.

Results
Overall, the availability of mandatory disciplines increased when compared to 2014 (2014: 82.2%; 2015: 87.0%). In two TBs the availability of mandatory disciplines decreased (TB 4 and TB 10), which was most likely due to merging these two TBs (see TB 12 in Fig. 3).

Conclusions
To discuss malign cases in a teamwork approach, the contribution of all mandatory disciplines in each of the TBs is needed. These data show that the mandatory presence of disciplines was below 100% but increased within the observation period of two years. Reasons for not reaching 100% attendance might be that i) the documentation in HIS was not carried out properly with respect of presence or absence of a mandatory discipline and/or ii) that the availability of a certain discipline was not seen as essential for any reason. Therefore, in the future, documentation of disciplines taking part in a TB needs to improve. Furthermore, there seems a certain need to re-define the mandatory presence of certain disciplines in a given TB.

Competing interests
The authors have no competing interests. There was no funding.

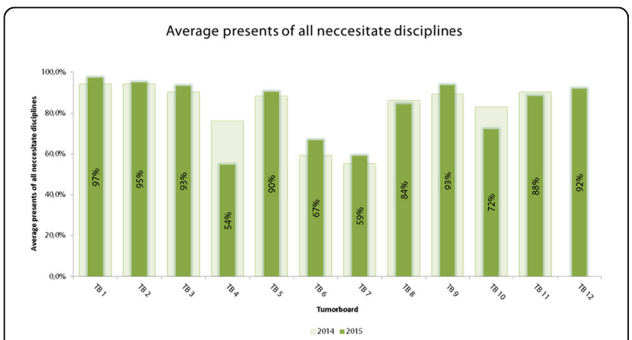

Fig 3 (A4). Average availability of all mandatory disciplines in 2014 and 2015

A5

Comprehensive Cancer Center Graz: protocol to evaluate communication and recommendation finding in tumorboards

Marlies Hart[1], Peter Tiefenbacher[1,2], Yvonne Müller[1,2], Gerald Sendlhofer[1,2,3,4]
[1]Department of Quality and Risk Management, University Hospital Graz, Graz, Austria; [2]Comprehensive Cancer Center Graz, University Hospital Graz and Medical University of Graz, Graz, Austria; [3]Division of Plastic, Aesthetic and Reconstructive Surgery, Department of Surgery, Medical University of Graz, Graz, Austria; [4]Research Unit for Safety in Health, Division of Plastic, Aesthetic and Reconstructive Surgery, Department of Surgery, Medical University of Graz, Graz, Austria
Correspondence: Marlies Hart (Marlies.hart@klinikum-graz.at) - Department of Quality and Risk Management, University Hospital Graz, Graz, Austria
Safety in Health 2016, **2(Suppl 1):**A5

Background
According to internal and external guidelines a tumorboard (TB) consists of representatives of radio-oncologists, oncologists, radiologists, pathologists and the respective surgical discipline. It is also defined that all TB-members should meet at least twice in a month and discuss pre- or postoperatively patients with a malign tumor in order to recommend a distinct treatment protocol for a patient. It's then the patients' decision if the recommended therapy should be carried out or not. For a TB it is also essential, that all requested healthcare professionals are available in a TB-discussion and it is also important that all relevant information for each patient is available at that time. In the Comprehensive Cancer Center

Graz (CCC-Graz), 11 TBs are implemented. In order to evaluate if TBs are well organized concerning quality of communication, availability of relevant information and recommendation finding, an instrument was identified and adjusted to our needs.

Material and methods

According to available literature, a checklist was designed, to evaluate TBs. In a pilot study, 4 out of 11 TBs will be evaluated with the new instrument. The checklist asks if the i) necessary infrastructure (technical equipment, hardware, software, etc.) and ii) relevant patient information are available. Furthermore, the quality of presenting the information, quality of teamwork and ability to reach a decision for treatment recommendation will be checked for each patient. All checks will be done by an employee of the Dep. for Quality and Risk Management, a graduand and a consultant.

Results

According to literature search, the instrument of Lamb et al. best suited our needs [1]. The validated decision making score was translated into German (Fig. 4).

Conclusions

The use of the checklist will be part of a diploma thesis. Approximately 240 TB-patients will be reviewed using the translated score. In order to evaluate if any differences in scoring occur, results of the graduand, consultant and the member of the administration will be compared.

Competing interests

The authors have no competing interests. There was no funding.

References

1. Lamb B, Green J, Benn J, Brown K, Vincent C, Sevdalis, N (2013). Improving decision making in multidisciplinary tumorboards: prospective longitudinal evaluation of a multicomponent intervention for 1,421 Patients. Journal of the American College of Surgeons, 217:412–420.

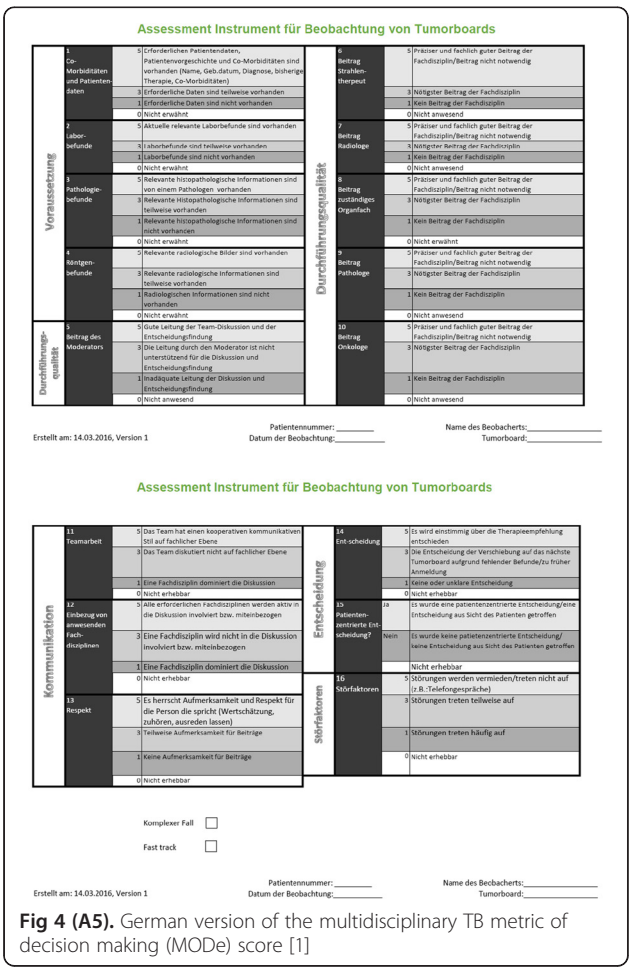

Fig 4 (A5). German version of the multidisciplinary TB metric of decision making (MODe) score [1]

A6

Generating a new insulin prescription chart at a university hospital

Julia Kopanz[1], Katharina M. Neubauer[1], Gerald Sendlhofer[2,3,4], Barbara Semlitsch[1], Andres Pak[5], Gerald Cuder[1], Thomas R. Pieber[1], Johannes Plank[6]
[1]Division of Endocrinology and Diabetology, Department of Internal Medicine, Medical University of Graz, Graz, Austria; [2]Department of Quality and Risk Management, University Hospital Graz, Graz, Austria; [3]Division of Plastic, Aesthetic and Reconstructive Surgery, Department of Surgery, Medical University of Graz, Graz, Austria; [4]Research Unit for Safety in Health, Division of Plastic, Aesthetic and Reconstructive Surgery, Department of Surgery, Medical University of Graz, Graz, Austria [5]Department of Controlling, University Hospital Graz, Graz, Austria [6]Division of Gastroenterology and Hepatology, Department of Internal Medicine, Medical University of Graz, Graz, Austria
Correspondence: Julia Kopanz (julia.kopanz@medunigraz.at) - Division of Endocrinology and Diabetology, Department of Internal Medicine, Medical University of Graz, Graz, Austria
Safety in Health 2016, **2(Suppl 1):**A6

Background

Insulin charts are the main tool for documentation of diabetes treatment in approximately 10% of all hospitalized patients [1–3]. Insulin charts are used to prescribe, document and interpret diabetes management. Variabilities in insulin charts can have an influence on the quality of care [4]. Prescribing errors, not legible handwriting, and abnormal blood glucose (BG) monitoring can occur [5].

At the University Hospital Graz, Austria, there is a high heterogeneity of 20 different charts for in-hospital insulin prescription. Our objective was to generate a new standardized paper-based insulin chart to improve safety and quality of diabetes management in hospitals.

Materials and methods

The new insulin chart was developed by an interdisciplinary team based on international literature [4, 6], local standards and results from audits at the University Hospital Graz in 2015 regarding structure and process quality. In an iterative process all relevant parts of the new chart were discussed before a consensus was found for the design of the final version.

Results

The new chart was conceptualized for insulin therapy only and is shown in Fig. 5. Because of structural deficits of the audited charts a limited process quality arose as a result (Table 3). Therefore the new chart comprises fields for five days of documentation for patient identification, BG monitoring, insulin orders and insulin administration as well as supplemental insulin orders. The field BG monitoring includes the option to prescribe the BG sampling frequency individual per day depending on patient's needs. BG levels can be displayed on a quasi-graph record with BG ranges to facilitate documentation and to quickly identify relevant deviations as hypo- or hyperglycemia. To ensure transparency in the process of insulin orders and insulin administration, the fields were separated. Structural conditions for identification of person and time were created for these fields. Space to document hypoglycemia treatment was generated.

Conclusions

The new standardized paper-based insulin chart is necessary to standardize documentation of a complex therapy and to ensure transparency. It should positively influence safety and quality of patient care and increase health care professional's safety. Therefore, the implementation and a subsequent evaluation are planned.

Acknowledgements

The authors thank all the participating departments for their collaboration.

Competing Interests

There are no competing interests.

References

1. Umpierrez GE, Hellman R, Korytkowski MT, Kosiborod M, Maynard GA, Montori VM et al.. Management of Hyperglycemia in Hospitalized Patients in Non-Critical Care Setting: An Endocrine Society Clinical Practice Guideline. J Clin Endocrinol Metab. 2012; 97:16–38.
2. Rayman G, Service NH. National Diabetes Inpatient Audit 2013. 2014. [http://www.hscic.gov.uk/catalogue/PUB13662/nati-diab-inp-audi-13-nat-rep.pdf] accessed June-30-2016

3. Umpierrez GE, Isaacs SD, Bazargan N, You X, Thaler LM, Kitabchi AE. Hyperglycemia: An Independent Marker of In-Hospital Mortality in Patients with Undiagnosed Diabetes. J Clin Endocrinol Metab. 2002; 87:978–982.
4. Christofidis MJ, Horswill MS, Hill A, McKimmie BM, Visser T, Watson MO. Task Analysis and Heuristic Analysis of Insulin Charts: Final report prepared for the Australian Commission on Safety and Quality in Health Care: 2 February 2012. [http://www.safetyandquality.gov.au/wp-content/uploads/2012/06/56679-Insulin-charts-heuristic-analysis-2-Feb-2011-Final-Report.pdf] accessed June-30-2016
5. Rushmer R, Voigt D. MEASURE IT, IMPROVE IT: the Safer Patients Initiative and quality improvement in subcutaneous insulin therapy for hospital in-patients. Diabet Med. 2008; 25: 960–967.
6. Horswill MS, Hill A, Christofidis M, Francis S, Watson MO. Development and initial evaluation of a new subcutaneous insulin form: final report. [http://www.safetyandquality.gov.au/wp-content/uploads/2015/08/Development-and-initial-evaluation-of-a-new-subcutaneous-insulin-form-Final-Report.pdf] accessed June-30-2016

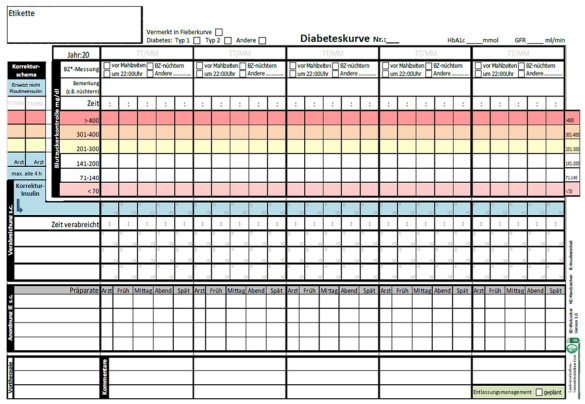

Fig. 5 (A6). New standardized paper-based insulin prescription chart

Table 3 (A6). Main results from structure and process quality audits of the insulin charts at the University Hospital Graz in 2015

	Structure quality (20 insulin charts in blank form)	Process quality (123 used insulin charts)
patient identification	no marked space provided for label or name (10%)	no patient identification given (17%)
BG monitoring	option to prescribe BG sampling frequency per day (0%)	performed BG measurements (min.-max.)/ day depending on type of therapy: total: 0–15 insulin: 0–15 oral antidiabetic medication: 0–7 diet: 0-5
	marked space for HbA1c[a]-field (35%)	HbA1c-value documented (11%)
insulin orders	not enough space to document names of used insulins (35%)	name of insulin was not complete/legible/ comprehensible (22%)
administration record	no marked field, to document initials by insulin administration (75%)	insulin administration not signed (70%)
hypoglycemia management	marked field for hypoglycemia-documentation (0%)	one out of six hypoglycemia treatments was documented (17%)

[a] glycated hemoglobin

A7

The Speech and Language Therapy teaching practice at the Institute for Speech and Language Therapy at FH JOANNEUM in Graz

Annemarie Schinko, Angelika Rother
[1]Institute Speech and Language Therapy, FH JOANNEUM, University of Applied Sciences in Graz, Graz, Styria, Austria
Correspondence: Annemarie Schinko (Annemarie.Schinko@fh-joanneum.at) - Institute Speech and Language Therapy, FH JOANNEUM, University of Applied Sciences in Graz, Graz, Styria, Austria
Safety in Health 2016, **2(Suppl 1):**A7

Background

An essential part of the educational program Speech and Language Therapy (SLT) is to provide students with practical experience so that they can apply theory knowledge acquired in lectures [1, 2]. The aim of the course "Integrative Process" (IGP) is to make sure, that the logopedic and diagnostic – therapeutic competences are applied in practice in a therapy practice setting, which is especially equipped for that purpose and located at the SLT institute at FH JOANNEUM. From the 4th to the 6th semester students conduct logopedic diagnostics and therapy in the areas of child language and voice under the permanent supervision of experienced Speech and Language Therapists (SLTs). The course "logopedic teaching practice" comprises identifying problems, planning, documenting, reflecting, evaluating and quality assurance.

Material and methods

The logopedic teaching practice is located in three therapy rooms and an audiometry chamber equipped up-to-date at FH JOANNEUM, with a modern transmission system to ensure quality of supervision. In mini groups of two students (therapist and co-therapist) patients are treated under the supervision of a lecturer. The SLT lecturer can observe the (therapy) sessions sitting behind a one-way-glass. After each (therapy) session the SLT lecturer and student reflect on the session, analyzing methodic – logopedic and social – communicative competences of the student and reactions of the patient, respectively. At the beginning of each semester students write a diagnostic report and at the end of the semester a final report, which is then send to the referring medical doctor.

Results

In order to adhere to medical data protection, each student has to sign a data privacy statement before the course starts. All procedures to protect patients' medical data are listed and possible legal consequences are stated. Patients and their relatives, who are treated in this course at FH JOANNEUM, are educated about the logopedic offer in the first session. This procedure is obligatory, because it is written down in the Allied Health Profession (MTD) regulations, stating that patients have to be educated about the planned treatment [3]. Additionally to being educated about logopedic procedures, the treatment contract also states that patients and their legal representatives, respectively, have access to all documents written in the course of the therapy teaching practice, which can be revoked any time.

Conclusions

In this course lecturers not only support students to develop practical competences, they are also constantly responsible for the well-being of the patients.

References

1. Bundesministerium für Gesundheit (2013). Gesundheitsberufe in Österreich. http://www.bmgf.gv.at/cms/home/attachments/2/9/2/CH1002/CMS1286285894833/gesundheitsberufe.pdf
2. FH-MTD-Ausbildungsverordnung (2006). http://www.ris.bka.gv.at/Dokumente/BgblAuth/BGBLA_2006_II_2/BGBLA_2006_II_2.pdf
3. MTD-Gesetz (2006). https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=Bundesnormen&Gesetzesnummer=10010701

A8

Development and implementation of a progress test in undergraduate dental education: a prospective Austrian pilot project

Barbara Kirnbauer[1], Petra Rugani[1], Norbert Jakse[1], Johannes Bernhardt-Melischnig[2], Rudolf Egger[3]
[1]Dental School, Division of Oral surgery and Orthodontics, Medical University of Graz, Graz, Austria; [2]Institute for Medical Informatics, Statistics and Documentation, Medical University of Graz, Graz, Austria; [3]Institute for Educational Science, Karl-Franzens University, Graz, Styria, Austria
Correspondence: Barbara Kirnbauer (barbara.kirnbauer@medunigraz.at) - Dental School, Division of Oral surgery and Orthodontics, Medical University of Graz, Graz, Austria
Safety in Health 2016, **2(Suppl 1):**A8

Background

Progress testing was developed during the 1970ies as an assessment tool to verify students' growth of knowledge during an educational programme and consequently to evaluate the programme's quality. Nowadays it is an established instrument in human medicine curricula throughout Europe and beyond. This useful tool is not, however, well established in dental education [1,2]. A pub med search revealed only one result concerning a dental progress test, in the Peninsula schools of medicine and dentistry in Plymouth [1]. The aim of this project is to establish a German-language dental progress test for the undergraduate dental curriculum at the Dental school of Medical University of Graz (Austria).

Material and methods

A pool of around 350 single best answer and K-type multiple-choice items at graduation-level from the specialist fields of Oral Surgery, Oral Medicine and Oral Radiology were compiled by a single author at the Division of Oral surgery and Orthodontics, Medical University of Graz. The author is a senior staff member with 10 years of experience in dental education. Special attention was paid to designing realistic case-vignettes and factual as well as practical knowledge at a higher cognitive level was targeted. Clinical pictures and radiographs were also included. Each question underwent a group and individual functional review by senior academics in house as well as external from the Medical University of Vienna and a formal review before final inclusion in the question pool.

Results

Progress testing starts in June 2016 and will continue for at least two further terms. Participation is compulsory for all dental students in terms 7 to 12, with 72 persons at most taking part, as approved by the local advisory committee of dental study affairs.
For each test, around 100 items will be randomly selected based on a predesigned blueprint. First results and item statistics will be presented.

Conclusions

This is the first report of the introduction of a dental progress test in a German speaking country. It is expected that progress testing will be a valid and reliable tool for the assessment of level of knowledge at the Dental School of Medical University of Graz. This test should also be a possibility to guarantee a high educational level of graduates and to raise patient safety. Although labour intensive, it is thought to be a desirable assessment tool in dental education from which students, educators and patients can profit [1,2].

References

1. Ali K, Coombes L, Kay E, Tredwin C, Jones G, Ricketts C, Bennett J. Progress testing in undergraduate dental education: The peninsula experience and future opportunities. Eur J Dent Educ 2015.
2. Bennett J, Freeman A, Coombes L, Kay L, Ricketts C. Adaptation of medical progress testing to a dental setting. Med Teach 2010;32:500–502.

A9

What they need and what they get: protocol to identify the needs of information of patients and what they receive so far

Magdalena M. Hoffmann[1,2], Karina Leitgeb[1,3], Esther Trampusch[4,5], Angelika Hofer[4], Regina Riedl[6], Karin Amrein[2], Christa Tax[7], Gernot Brunner[7], Gerald Sendlhofer[1,3,8]
[1]Department of Quality and Risk Management, University Hospital Graz, Graz, Austria; [2]Division of Endocrinology and Diabetology, Department of Internal Medicine, Medical University of Graz, Graz, Austria; [3]Research Unit for Safety in Health, Division of Plastic, Aesthetic and Reconstructive Surgery, Department of Surgery, Medical University of Graz, Graz, Austria; [4]Department of Dermatology, University Hospital Graz, Graz, Austria; [5]Department of Neurology, University Hospital Graz, Graz, Austria; [6]Institute for Medical Informatics, Statistics and Documentation, Medical University of Graz, Graz, Austria; [7]University Hospital Graz, Graz, Austria; [8]Division of Plastic, Aesthetic and Reconstructive Surgery, Department of Surgery, Medical University of Graz, Graz, Austria
Correspondence: Magdalena M. Hoffmann (Magdalena.hoffmann@klinikum-graz.at) - Department of Quality and Risk Management, University Hospital Graz, Graz, Austria
Safety in Health 2016, **2(Suppl 1):**A9

Background

Frequently, patient receive insufficient information about their health status when discharged [1] or do not adequately comprehend the information given (47% EU average struggle with information) [2]. Potential consequences are an increased risk of readmission [3], mistakes e.g. in the self-administration of medication, or an inadequate flow of information between health institutions providing further care [4]. The aim of this pilot study is to identify the information needs of patients, and current information given to the patients about their health state at discharge. A subsequent evaluation should elucidate whether the information given was adequately communicated on the health literacy level of patients, and whether the content corresponded to the information needs of the patients (Fig. 6).

Material and methods

The pilot study consists of two stages.

1. In the first stage, focus groups with patients are conducted after their discharge to evaluate patient needs.
2. In the second stage, a survey is conducted to gain patients insights after their discharge.

Results

Expected results are findings about patients' specific information needs obtained directly from those concerned. Further findings will include data on the number and length of actually conducted discharge conversations with patients, on the content of these conversations, and whether they met the needs of patients with regard to content and form of communication.

Conclusions

If patient information encouraging the maintenance or improvement of the patient's health state is not delivered adequately, there is an increased risk of the patient's being unable to sufficiently self-care or to take health-promoting measures.
Apart of the necessary space for patients to freely and confidentially discuss matters relevant to them [6], the adequacy of the informational content is vital as well. The findings regarding informational and explanatory needs, and actual situation provide the basis for further measures to improve discharge information. Not only the fulfilment of legal framework conditions such as ELGA [7], but a variety of other measures is necessary in order to reduce undesirable side effects, for instance readmission [8], and to improve patient safety.

Acknowledgements
We would like to thank the entire organization and their employees for supporting the Health Literacy campaign.

Competing interests
The authors have no competing interests. There was no funding.

References

1. Flacker J. et al., Hospital discharge information and older patients: Do they get what they need? 2007, J Hosp Med. 2007 Sep;2(5):291–6.. Access on: http://www.ncbi.nlm.nih.gov/pubmed/?term=flacker+AND+Discharge+2007
2. The HLS-EU Consortium, Final report Executive summary (D17), The European Health Literacy Project (HLS-EU), 2009–2012. Access on: http://ec.europa.eu/chafea/documents/news/Comparative_report_on_health_literacy_in_eight_EU_member_states.pdf, 18.05.2016
3. Hansen L. et al., Interventions to reduce 30-day rehospitalization: a systematic review, PubMed Health, Review published 2011. Access on: http://www.ncbi.nlm.nih.gov/pubmed/22007045, 18.05.2016
4. Pieper B., et al. Discharge information needs of patients after surgery, 2006, J Wound Ostomy Continence Nurs. 2006 May-Jun;33(3):281–9; quiz 290–1.
5. Sorensen K., et al. Integrated model of health literacy, BioMed Central Ltd.. BMC Public Health. 2012; 12: 80. Access on: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3292515/figure/F1/, 18.05.2016
6. Sator M., et al. Verbesserung der Gesprächsqualität in der Krankenversorgung, 2005, Gesundheit Österreich, GmbH
7. ELGA, Access on: http://www.elga.gv.at/technischer-hintergrund/technische-elga-leitfaeden/, 24.05.2016
8. Kripalani S., et al. , Reducing Hospital Readmission: Current Strategies and Future Directions, PMC, Annu rev Med.2014;65: 471–485

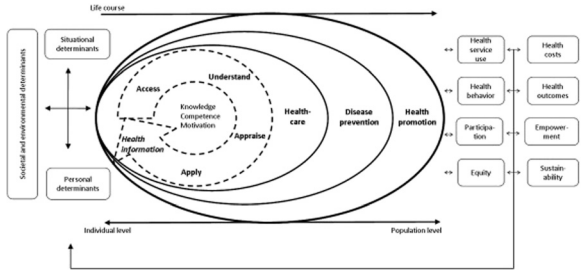

Fig. 6 (A9). Integrated model of health literacy Sorensen et al. 2012 [5]

A10

Medication-related problems resolved and money saved: results of a clinical pharmacy service evaluation in the surgical setting

Emilie Tudela-Lopez, Petra Pölzleitner, Klara Jadrna, Christina Labut, Maria Kundracikova, Helga Fend, Gunar Stemer
Pharmacy Department, Vienna General Hospital, Medical University Campus, Vienna, Austria
Correspondence: Gunar Stemer (gunar.stemer@akhwien.at) - Pharmacy Department, Vienna General Hospital, Medical University Campus, Vienna, Austria
Safety in Health 2016, **2(Suppl 1):**A10

Background
Clinical pharmacy services (CPS) are well established means to improve patient safety by systematically addressing medication-related problems (MRPs). Within the framework of the Austrian health care reform, a publicly funded project with the aim of resolving MRPs by in-hospital CPS was conducted. The aims of the study were firstly to detect MRPs and to analyse the clinical pharmacists' interventions, and secondly to retrospectively assess direct medication cost-savings.
Material and methods
CPS were implemented on three specialised surgical wards in a large academic teaching hospital: cardio (28 beds), trauma (28), and maxillofacial surgery (40). Services included medication review (MR) of newly admitted patients and patient counselling at discharge on weekdays. Ward round participation took place at least once weekly. All MRPs, interventions, and the physicians' acceptance rates (AR) were recorded during the study period (10/2014 to 09/2015) according to an adapted classification system [1]. 12-month direct medication cost-savings (social insurance prices) were calculated for three types of implemented interventions (i.e. discontinuation, dose reduction and switch to oral route) and for chronic use medicines. For temporary use medicines (e.g. analgesics, antibiotics) cost-savings were calculated for 5 days. Total savings were calculated for a sample of patients.
Results
MRs were performed in 5.194 patients, with 3.741 MRPs detected in 3.706 (71.4%) patients (43.9% female; average (±SD) age: 63.7 (±18.1) years; average (±SD) medicines/day: 9 (±4.4)). The five most common MRPs (%) and most frequently affected medicines were: wrong documentation of medicines in medical charts (34.2; tramadol, diclofenac, and esomeprazole), request of specific information and therapy discussion (13.4; sultamicillin, tramadol, and amoxicillin/clavulanate), supratherapeutic doses (9.3; proton pump inhibitors (PPIs) and allopurinol), unnecessarily prescribed medicines (8.1; PPIs and diclofenac) and suboptimal administration route (6.3; diclofenac, pantoprazole, paracetamol). The five most common clinical pharmacists' interventions and corresponding ARs (%) were optimisation of documentation (34; AR: 98), provision of information (16.3; AR: not applicable), recommendations to discontinue medicines (12.1; AR: 75.8), dose changes (11.3; AR: 60.1), and prescriptions of new medicines (6.2; AR: 87.8). The overall physicians' AR was 86.5%. 12-month cost-savings of all implemented interventions totalled about 50.270€. Approximately 680 (±280) € per patient could potentially be saved by CPS.
Conclusions
CPS have considerably contributed to the resolution of MRPs in surgical patients as illustrated by the high number of interventions performed and the high acceptance rate. CPS come with the potential for important direct medicines cost-savings, while indirect cost savings are not yet at all considered.

Competing interests
Financial support of the project by the Wiener Gesundheitsfond is acknowledged.

References

1. Allenet B et al. Pharm World Sci 2006; 28(4):181–188

A11

Intercultural communication management in radiology

Jutta Maria Lorenz (JuttaMaria.Lorenz@klinikum-graz.at)
Division of Pediatric Radiology, Department of Radiology, Medical University of Graz, Graz, Austria
Safety in Health 2016, **2(Suppl 1):**A11

Background
Due to the increasing population growth from the most different regions of the world, problems in communication with patients and their relatives are arising. Since there is not always the possibility or necessity to call for a translator/interpreter, the question is now, how you can explain to the patient what's going on. Even the common "talking with hands and feet" pushes boundaries these days. Therefore this problem was picked up and with simple but extremely effective means solved. To carry out a correct x-ray in radiology we use very often standard phrases. For example a lung x-ray with the wrong breath technique could lead to a false diagnosis and may lead to a wrong therapy for the patient.
Material and methods
To avoid this problem, we collected the most frequently used phrases and had them translated by an interpreter. You find the folders with the phrases, sorted by languages, in every treatment room. The interaction with the patient is much easier now.
Signs are another important tool for good communication management. Pictograms have always been very important in the culture of people. They can often transcend languages in that they can communicate to speakers of a number of tongues and language families equally effectively, even if the languages and

cultures are completely different. These days also health care has realized the importance of signs. Especially in critical situations are such striking hints very useful.
A well placed and good visible sign in the waiting area can help the patient and accompanying person to know in advance what to do and what to expect before the examination. But the most important aspect of a Pictogram is, that people guess without knowing the language with a simple graphic display what to do or what's going on. Nevertheless you should be aware of too much signs with too much information since it would only lead to more confusion and would not be very effective.
Results
These two methods are helping to get in a better inaction with the patient. The phrases are used since one year and it was still necessary to extend them by different languages due to the migrant crisis in Europe.
Conclusions
Is it really necessary to take a folder or is it even better to talk with "hands and feet"? Are patients really looking at signs while they are waiting for an examination?

A12

Spotlight on data quality: comparison of data input by physicians vs. non-physicians in the German Resuscitation Registry

Gerhard Prause[1], Paul Zajic, Philipp Zoidl, Geza Gemes
Division of General Anaesthesiology, Emergency Medicine and Intensive Care Medicine, Department of Anaesthesiology and Intensive Care Medicine, Medical University of Graz, Graz, Austria
Correspondence: Gerhard Prause (gerhard.prause@medunigraz.at) - Division of General Anaesthesiology, Emergency Medicine and Intensive Care Medicine, Department of Anaesthesiology and Intensive Care Medicine, Medical University of Graz, Graz, Austria
Safety in Health 2016, **2(Suppl 1):**A12

Background
In prehospital emergency medicine cardiopulmonary resuscitation (CPR) is regarded a key procedure. Quality management relies heavily on registry data [1,2]. However, documentation and registry data input may be unpopular tasks for all medical professions. This manuscript describes the differences in data quality in the German Resuscitation Registry (GRR) between data collected by prehospital emergency physicians versus the Emergency Medical Technicians (EMT).
Material and methods
In 2015 the emergency physician response system at the Medical University of Graz took part in the GRR and recorded all patients suffering from out-of-hospital cardiac arrest (OHCA). In the same time the regional Red Cross ambulance service was participating in the GRR too and instructed their EMTs to record all cardiac arrest patients. The Medical University's documentation was performed by the physicians themselves and was managed by the system's medical director continuously. EMTs were officially instructed and received training for data input before data entry started.
Results
In 2015 physicians recorded 110.5 cases of OHCA per 100,000 citizens per year, whereas only 70.1 OHCA cases per 100,000 citizens per year were documented by EMTs. The incidence of initiated CPR was higher than the GRR's average (74.2/ 100,000), yet EMTs documented only a rate of 37.9. Furthermore, a rate of bystander CPR of only 19.6% was found by emergency physicians, whereas the ambulance service's registry yields a rate as high as 40.1% (Fig. 7).
Conclusions
International registries are important tools for quality and risk management. However, correct and responsible data recording is an indisputable requirement and should be managed and controlled by physicians [3]. Incomplete or false data may result in incorrect interpretation and conclusions, undermining the value of such registries.

Competing interests
There are no competing interests.

References
1. Gräsner JT, Bossaert L. Epidemiology and management of cardiac arrest: What registries are revealing. Best Pract Res Clin Anaesthesiol. 2013 Sep; 27(3) 293–306; doi:10.1016/j.bpa.2013.07.008
2. Gräsner JT, Meybohm P., Lefering R, et al. ROSC after cardiac arrest-the RACA score to predict outcome after out-of-hospital cardiac arrest. Eur Heart J. 2011 Jul;32(13):1649–56. doi:10.1093/eurheartj/ehr107
3. Carlos M Soto, Kenneth P Kleinman and Steven R Simon. Quality and correlates of medical record documentation in the ambulance care setting. BMC Health Services Research 2002(2). 1–7. doi:10.1186/1472-6963-2-22

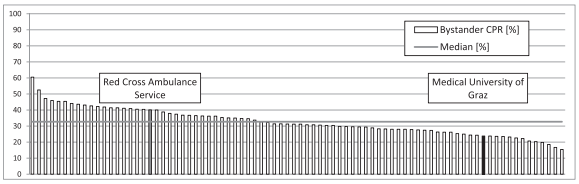

Fig. 7 (A12). Comparison of bystander CPR rates in the investigates emergency physician response systems

A13

MRSA prevalence and eradication with octenidine

Gerald Pichler[1], Christian Pux[1], Rita Babeluk[2], Brigitte Hermann[3], Eric Stoiser[3], Antonella De Campo[4], Andrea Grisold[5], Ines Zollner-Schwetz[6], Robert Krause[6], Walter Schippinger[4]
[1]Department of Neurology, Albert Schweitzer Hospital, Graz, Graz, Austria; [2]Department of Surgery, Medical University of Vienna, Vienna, Austria; [3]Department of Medical Geriatrics, Albert Schweitzer Hospital, Graz, Graz, Austria; [4]Department of Internal Medicine, Albert Schweitzer Hospital, Graz, Graz, Austria; [5]Department of Microbiology and Environmental Medicine, Institute of Hygiene, Medical, University of Graz, Graz, Austria; [6]Section of Infectious Diseases and Tropical Medicine, Department of Internal Medicine, Medical University of Graz, Graz, Austria
Correspondence: Gerald Pichler (gerald.pichler@stadt.graz.at) - Department of Neurology, Albert Schweitzer Hospital, Graz, Styria, Austria
Safety in Health 2016, **2(Suppl 1):**A13

Background
Current evidence based practice for methicillin-resistant *Staphylococcus aureus* (MRSA) decontamination consists predominantly of chlorhexidine bathing in combination with mupirocin nasal ointment application. However, there is a controversial discussion on potential risks derived from unrestricted use of these substances in daily clinical practice with increasing numbers for chlorhexidine- and mupirocin-resistant *Staphylococcus aureus* strains being reported [1–4].
Methods
In the present case-cohort-type observational study, MRSA presence was detected in a challenging and difficult to handle group of inpatients at the Albert Schweitzer Hospital in Graz, Austria. The MRSA screening protocol included swab sampling at different patient´s body sites. All of the MRSA positive patients were included in the following decontamination procedure with octenidine-based products which also included regular hand disinfection, daily bed linen changes and disinfection of patient-side surroundings such as glasses, hearing aid, remote controls and door handles as well as single use toothbrushes and combs.
Results
At baseline, MRSA presence was detected in 25/126 (20%) patients. MRSA was detected in 13/126 (10%) nose swab samples, in 12/126 (10%) skin swab samples, in 11/51 (22%) PEG-stomata or suprapubic catheters swab samples, and in 8/13 (62%) tracheostomata swab samples. Wound swab samples of 6 patients were negative for MRSA presence. Only 13/25 (52%) of patients with positive results showed MRSA in the nose, suggesting exclusive screening of the nose might lead to underreporting. Only MRSA positive patients were included in the following decontamination procedure with octenidine-based products. Strict application of the decontamination protocol resulted in a reduction of 68%. When non-compliant and deceased patients

were excluded, MRSA was reduced up to 93% in remaining 15 compliant patients. No adverse events occurred. 70% of all patients who were decontaminated and still hospitalized after 6 months, remained negative for MRSA presence.

Conclusions

The MRSA decontamination with non-antibiotic octenidine-based leave-on products showed to be safe and effective.

References

1. Hetem DJ, Bonten MJM. Clinical relevance of mupirocin resistance in Staphylococcus aureus. Journal of Hospital Infections. 2013; 85: 249–256.
2. McDanel JS, Murphy CR, Diekema DJ, Quan V, Kim DS, et al. Chlorhexidine and Mupirocin susceptibilities of MRSA from colonized nursing home residents. Antimicrobial Agents and Chemotherapy. 2013; 57(1): 552–558.
3. Lee H, Lim H, Bae K, Yong D, Hoon Jeong S, Lee K, Chong Y. Coexistence of mupirocin and antiseptic resistance in methicillin-resistant Staphylococcus aureus isolates from Korea. Diagnostic Microbiology and Infectious Disease. 2013; 75:308–312.
4. Fritz SA, Hogan PG, Camis BC, Ainsworth AJ, Patrick C, Martin MS, Krauss MJ, Rodrigez M, Burnham CAD. Mupirocin and chlorhexidine resistance in Staphylococcus aureus in patients with community-onset skin and soft tissue infections. Antimicrobial Agents and Chemotherapy. 2014; 57(1):559–568.

A14

QUIPS: a pain registry with impact in science and daily routine work

Alexander Avian[1,2], Brigitte Messerer[3], Claudia Weinmann[2], Winfried Meißner[2]

[1]Institute for Medical Informatics, Statistics and Documentation, Medical University of Graz, Graz, Austria; [2]Department of Anesthesiology and Intensive Care, Jena University Hospital, Jena, Germany; [3]Division of Anesthesiology for Cardiovascular Surgery and Intensive Care Medicine, Medical University of Graz, Graz, Austria

Correspondence: Alexander Avian (alexander.avian@medunigraz.at) - Institute for Medical Informatics, Statistics and Documentation, Medical University of Graz, Graz, Austria

Safety in Health 2016, **2(Suppl 1):**A14

Background

Postoperative pain is a common experience for both children and adults. In hospitalized adults up to 67% and in children up to 87% reported pain within the last 24h [1–6]. Furthermore, after certain interventions like orthognathic surgery up to 40% reported PONV within the first 24h after surgery [7]. Both pain medication and possible side effect are important issues in postoperative care.

To get new insights in actual pain management, identify surgeries with need for improvement in pain management and to give hospitals the opportunity to learn from other ones, the German QUIPS registry (Qualitätsverbesserung in der postoperativen Schmerztherapie/ quality improvement in postoperative pain management) was implemented.

Material and methods

The QUIPS registry exists since 2006. Demographic data (e.g. age, sex), clinical data (type of surgery, medication) and patient reported outcomes (e.g. pain, side effects like PONV) are included. Special tools are available for children (age: 4 to 18 years; QUIPS-*infant*), out-patients (QUPS-*ambulant*) and follow up assessments (6 and 12 months after hospitalization; QUIPS-*follow-up*). Furthermore, an English version for not German speaking countries (PAIN OUT, PAIN OUT-*infant*) is available (Fig. 8). Within these registries data are stored and each hospital (ward) has the opportunity to compare its results to (1) previous own results or (2) other hospitals (these other hospitals are anonymized) by using an implemented benchmark-server (Fig. 9). These comparisons can be made for the whole patient group our subgroups (e.g. type of surgery, age groups).

Results

Overall data of 520.742 patients (QUIPS: 459.513; QUIPS-*infant*: 6129; PAIN OUT: 55.100), 326 hospitals (QUIPS: 219, QUIPS-*infant*: 13; PAIN OUT: 94) and 35 countries (QUIPS: 3, QUIPS-*infant*: 3; PAIN OUT: 32) are included in these registries.

Based on these registries 51 manuscripts have been published in peer reviewed journals. These manuscripts cover a wide range of different research questions from basic psychometric questions (item order, number or response levels) [8,9], the analysis of a special type of surgery (e.g. septorhinoplasty) [10] to an overview of a wide range of surgeries [11]. Beside these scientifically high impact manuscripts several manuscripts have been published reporting the experience of single hospitals with the QUIPS registry [12].

Conclusions

QUIPS is a large acute pain registry. Analyzing QUIPS data can help identify deficits so that pain management in hospitals can be improved. QUIPS also serves as a database for answering different basic or applied research questions. Therefore, QUIPS can help minimizing both the experienced pain intensity and possible side effects (e.g. PONV).

Competing interests

The authors have no competing interests. There was no funding. Trial registration: DRKS00006153; NCT02083835.

References

1. Abbott FV, Gray-Donald K, Sewitch MJ, Johnston CC, Edgar L, Jeans ME. The prevalence of pain in hospitalized patients and resolution over six months. Pain. 1992;50:15–28.
2. Johnston CC, Abbott FV, Gray-Donald K, Jeans ME. A Survey of Pain in Hospitalized Patients. Clin J Pain. 1992;8:154–63.
3. Salomon L, Tcherny-Lessenot St, Collin E, et al. Pain Prevalence in a French Teaching Hospital. J Pain Symptom Manage. 2002;24:586–92.
4. Strohbuecker B, Mayer H, Evers GCM, Sabatowski R. Pain Prevalence in Hospitalized Patients in a German University Teaching Hospital. J Pain Symptom Manage. 2005;29:498–506.
5. Taylor EM, Boyer K, Campbell FA. Pain in hospitalized children: A prospective cross-sectional survey of pain prevalence, intensity, assessment and management in a Canadian pediatric teaching hospital. Pain Res Manag. 2008;13:25–32.
6. Wadenstein,B, Fröjd C, Swenne ChL, Gordh T, Gunningberg L. Why is pain still not being assessed adequately? Results of a pain prevalence study in a university hospital in Sweden. J Clin Nurs. 2011;20:624–34.
7. Silva AC, O'Ryan F, Poor DB. Postoperative nausea and vomiting (PONV) after orthognathic surgery : A retrospective study and literature review. J Oral Maxillofac Surg. 2006; 64: 1385–97.
8. Avian A, Messerer B, Weinberg A, Meissner W, Schneider C, Berghold A. The impact of item order and sex on self-report of pain intensity in children. Health Psycho. 2016;35:483–91.
9. Rothaug J, Weiss T, Meissner W. How simple can it get? Measuring pain with NRS items or binary items. Clinical Journal of Pain. 2013; 29: 224–232.
10. Wittekindt D, Wittekindt C, Schneider G, Meissner W, Guntinas-Lichius O. Postoperative pain assessment after septorhinoplasty. Eur Arch Otorhinolaryngol. 2012; 269:1613–21.
11. Gerbershagen HJ, Aduckathil S, van Wijck AJM, Peelen LM, Kalkman CJ, Meissner W. Pain Intensity on the First Day after Surgery: A Prospective Cohort Study Comparing 179 Surgical Procedures. Anesthesiology. 2013; 118: 934–944.
12. Oppitz F, Meißner W, Sarmiento C, Höhne M., Hamann U, Mescha S. QUIPS als Werkzeug zum kontinuierlichen Qualitätsmonitoring in einer kinderchirurgischen Klinik. [QUIPS a tool for continuous quality monitoring in a hospital for pediatric and adolescent surgery] Anästhesiologie und Intensivmedizin. 2013; 11: 564–571.

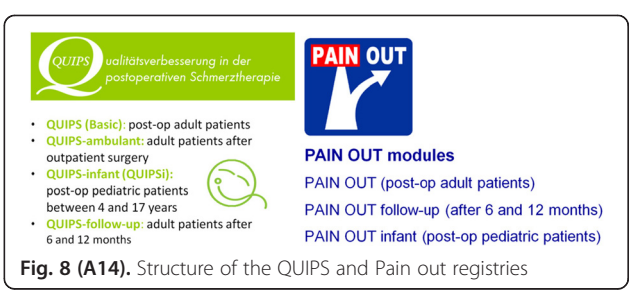

Fig. 8 (A14). Structure of the QUIPS and Pain out registries

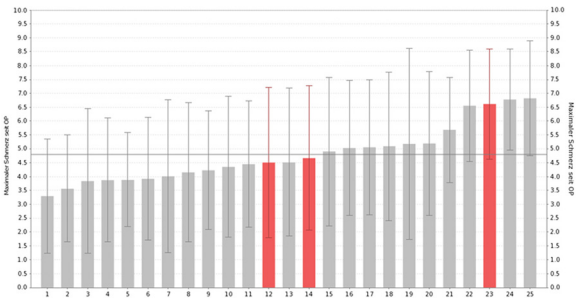

Fig. 9 (A14). Example for the comparison of the postoperative worst pain of three wards of a hospital (red bars) to 22 other hospitals (gray bars). The horizontal line represents the mean pain over all hospitals

A15

Patient empowerment for the youngest

Karina Leitgeb[1], Magdalena Hoffmann[1], Gerald Sendlhofer[1,2,3]
[1]Executive Department for Quality and Risk Management, University Hospital Graz, Graz, Austria; [2]Division of Plastic, Aesthetic and Reconstructive Surgery, Department of Surgery, Medical University of Graz, Graz, Austria; [3]Research Unit for Safety in Health, Division of Plastic, Aesthetic and Reconstructive Surgery, Department of Surgery, Medical University of Graz, Graz, Austria
Correspondence: Karina Leitgeb (karina.leitgeb@klinikum-graz.at) - Executive Department for Quality and Risk Management, University Hospital Graz, Graz, Austria
Safety in Health 2016, **2(Suppl 1):**A15

Background

Children's admission to the hospital is often combined with severe illness, pain and fear. In order to ease some of the fear and worry of children and their parents a patient information film for children was made. The aim of "Fredi Fox in the Children's Center" is to visualize and explain the main steps during a hospital stay in a way appropriate for the developmental stage of the children admitted [1]. The film was made in cooperation with the University Hospital Graz, Department of Quality and Risk Management and the FH Joanneum University of Applied Sciences Graz, Institute of Design and Communication, Department of Media and Design.

Material and methods

A user survey, involving interviews with patients, parents, nurses, surgeons and a psychologist, as well as a competitor analysis were carried out in the research phase. In the concept phase, preliminary sketches were created, and a concept presentation meeting and the selection of the artistic style took place. Illustration, video and sound development was followed by the video production and animation. Before the finalisation of the video, a phase involving feedback collection and usability testing was carried out.

Results

The video is shown on the hospital channel three times a day. Moreover, the video can be watched on mobile devices upon scanning a QR-code. Posters with broadcasting times of the children information video and the QR-Code are displayed on wards, in the entrance area and the outpatients department. The video is also available on the homepage and the Youtube channel of the University Hospital Graz [2, 3] (Figs. 10 and 11).

Conclusions

Patients, whether they are children or adults, want to be seen as partners in decision making regarding their health process. Children are encouraged to ask and stand up for themselves, nurses and doctors are urged to engage with patients on a more individual basis. Empowering children in a competent, mature and partnership-oriented way is a key factor for developing patients' health literacy in patient centred health care systems [4].

Acknowledgements

We would like to thank the entire organization and their employees for supporting Patient Empowerment for the Youngest.

Competing interests

The authors have no competing interests. There was no funding.

References

1. Bundesministerium für Gesundheit: Kinder- und Jugendgesundheitsstrategie 2011. Wien. Vereinbarung zur Sicherstellung der Patientenrechte (Patientencharta) (2002). 2011; BGBl. I Nr. 153/2002. Download: https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=Bundesnormen&Gesetzesnummer=20002164; Accessed 18 May 2016
2. https://youtu.be/jUDDBQtOBCU; Accessed 20 May 2016
3. http://www.klinikum-graz.at; Accessed 20 May 2016
4. Bundesministerium für Gesundheit: Health Literacy erhöhen. Capacity Building bei VertreterInnen von PatientInnen und KonsumentInnen von Gesundheitsleistungen. Pilot im Auftrag von und in Kooperation mit dem Bundesministerium für Gesundheit. Endbericht. 2014; Graz. Download: http://www.bmgf.gv.at/cms/home/attachments/9/4/3/CH1473/CMS1421673601207/healthliteracy_bericht_2015.pdf; Accessed 18 May 2016

Fig. 10 (A15). Video "Fredi Fox in the Children's Center"

Fig. 11 (A15). QR-Code to the Video "Fredi Fox in the Children's Center"

A16

Development of a pocket guide for parenteral nutrition in hospitalized adults

Anna Maria Eisenberger *[1], Siegrid Fuchs [2]
[1]University Hospital Graz, Graz, Styria, Austria; [2]Medical University of Graz, Graz, Styria, Austria
Correspondence: Anna Maria Eisenberger (anna.eisenberger@klinikum-graz.at) - University Hospital Graz, Graz, Styria, Austria
Safety in Health 2016, **2(Suppl 1):**A16

Background
According to current guidelines, oral and enteral feeding and therefore using the gastrointestinal tract is preferential in hospitalized patients, in contrast to parenteral feeding (PN). Nevertheless, there are cases where oral and enteral routes are not succeeding or patients simply do not meet their nutritional requirements with oral and enteral nutrition. Therefore, PN represents a safe alternative or additional approach. The primary aim of parenteral nutrition is to offer a nutrient mixture according to the patients' requirements and, subsequently, to achieve an adequate nutritional status of the patients. Furthermore, adequate nutritional care aims at reducing the risk for complications and adverse outcomes [1]. In clinical practice, there is great diversity in the use of PN and health personnel has often uncertainties towards the application of PN. This stems from the fact that PN carries the risk of overfeeding which can lead to serious complications [1,2]. Therefore it was the purpose to develop a practical pocket guide for PN in hospitalized adults. With this pocket guide our aim was to standardize the application of PN at the University Hospital Graz and moreover to improve patient safety and outcomes.
Material and methods
The pocket guide for PN was developed by the nutrition team of the University Hospital Graz. Different professions, including dieticians, physicians, pharmacists and nurses were involved in the development process. The pocket guide is based on a comprehensive literature review of the latest literature and includes evidence based recommendations for safe and effective parenteral nutritional care.
Results
The pocket guide on PN includes indications and contraindications for PN and recommendations for laboratory monitoring such as special measures in case of metabolic complications, like high triglycerides, high urea or high blood sugar. Beside that, the application of different infusion regimes, the handling of PN, composition of different all-in-one bags for PN and the calculation of energy and fluid requirements of patients are described. PN is indicated in the case of a fasting period of more than 3–5 days, in case of a lack of oral/enteral nutrition, as well as in case of contraindications for enteral nutrition [1].
Conclusions
PN represents a highly sensitive topic in clinical nutrition which needs expertise from specialists in the field. The development of the pocket guide for PN within the expert group of the nutrition team and the implementation at the University Hospital Graz led to a standardized and evidence based application of PN in patients with need.

Competing interests
No conflict of interest declared

References
1. Singer P et.al. ESPEN Guidelines on Parenteral Nutrition: Intensive care. 2009; 4:387–400
2. McClave SA et.al. ASPEN Guidelines for the Provision and Assessment of Nutrition Support Therapy in the Adult Critically Ill Patient. 2016; 40: 159–211

A17

Safety and efficacy of a clinical decision support system for blood glucose management in patients with diabetes mellitus type 2 at a plastic-surgical ward

Alexandru-C. Tuca[1], Katharina M. Neubauer[2], Julia K. Mader[2], Felix Aberer[2] , David B. Lumenta[1], Birgit Bauer[1] ,Klaus Donsa[3] , Thomas Augustin[3] , Bernhard Höll[3] , Lukas Schaupp[2], Peter Beck[4], Johannes Plank[2] , Thomas R. Pieber[2,3] , Lars-P. Kamolz[1,5]
[1]Division of Plastic, Aesthetic and Reconstructive Surgery Graz, Medical University of Graz, Graz, Austria; [2]Division of Endocrinology and Diabetology, Department of Internal Medicine, Medical University of Graz, Graz, Austria; [3]Institute for Biomedicine and Health Sciences, HEALTH, JOANNEUM RESEARCH Forschungsgesellschaft mbH, Graz, Austria; [4]decide Clinical Software GmbH, Graz, Austria; [5]Research Unit for Safety in Health, Division of Plastic, Aesthetic and Reconstructive Surgery, Department of Surgery, Medical University of Graz, Graz, Austria
Safety in Health 2016, **2(Suppl 1):**A17

Background
Blood glucose management and avoidance of hypo-and hyperglycemic derailments are not only at wards for internal medicine a challenging task for the treatment team – also at surgical wards patients with diabetes mellitus type 2 have to be treated. A decision support system that supports doctors and nurses concerning blood glucose management could improve the treatment of these patients. The aim of this study was to evaluate the efficacy and safety of the GlucoTab-system at a plastic-surgical ward.
Material and methods
A total of 18 patients (9 women, age 65 ± 10 years, HbA1c 62 ± 21 mmol/mol, BMI 29.5 ± 5.5 kg/m2, diabetes duration 13 ± 10 years, duration of hospitalization 9.9 ± 9.2 days) with diabetes mellitus type 2 were treated for the length of their hospital stay with the GlucoTab system, an automated decision support system for the basal-bolus insulin therapy.
Results
At hospital admission, the average blood glucose (BG) was 177 ± 76 mg/dl. After applying the GlucoTab system in routine medical care at the plastic-surgical ward, the average BG was 138 ± 30 mg/dl. 83% of the BG measurements lay within 70–180 mg/dl. 0%, 1.9%, 14.5% and 0.8% of the BG measurements lay in the BG-ranges <40 mg/dl, <70 mg/dl,> 180- <300 mg/dl and ≥300 mg/dl. The suggested procedures and insulin doses were accepted and carried out by the staff in > 87.4% and > 95.4% of the cases.
Conclusions
The results of this study show that efficacy and safety of GlucoTab system are given on a plastic-surgical ward. The GlucoTab system leads to an optimization of BG management in the routine medical care of patients with diabetes mellitus type 2.

Acknowledgements
The study was supported by the FFG (Research Studios Austria "GlucoTab" Project 844 737).

A18

Urban dwellers show higher readiness in participating actively in the shaping of the healthcare system in Austria

Christian Smolle[1], Frederike Reischies[2], Gudrun Pregartner[3], Daryousch Parvizi[2], Gerald Sendlhofer[1,4], Lars-Peter Kamolz[1,4]
[1]Research Unit for Safety in Health, Division of Plastic, Aesthetic and Reconstructive Surgery, Department of Surgery, Medical University of Graz, Graz, Austria; [2]Division of Plastic, Aesthetic and Reconstructive Surgery, Department of Surgery, Medical University of Graz, Graz, Austria; [3]Institute for Medical Informatics, Medical University of Graz, Graz, Austria; [4]Austrian Society for Quality and Safety in Healthcare, Graz, Austria
Correspondence: Christian Smolle (christian.smolle@gmail.com) - Research Unit for Safety in Health, Division of Plastic, Aesthetic and Reconstructive Surgery, Department of Surgery, Medical University of Graz, Graz, Austria
Safety in Health 2016, **2(Suppl 1):**A18

Background
Involvement of the patient in healthcare decisions is the principal goal of patient empowerment in patient centered medicine [1,2]. Whilst the offers for shared decision making are ever increasing, there still is uncertainty whether patients are willing to avail themselves of those opportunities [3]. The aim of this study was to assess the public readiness for active participation in shaping the healthcare system.
Material and methods
A telephone survey amongst Austrian inhabitants was conducted. Demographic parameters were assessed including age, gender, highest education degree, monthly income and number of inhabitants at place of residence. The question asked was "If you could, which orders would you place with the Austrian Society for Safety in Health?". Participants could choose anything up to two from the given options (Table 4).
Statistical analysis was conducted with SPSS 23.0 for Windows (Armonk, NY: IBM Cooperation). All results were ranked and Spearman-correlation test was applied.

Results
1021 people participated in the study. 52% were female and the majority (58%) was from a city with more than 5,000 inhabitants. The biggest proportion had a technical school degree (47%) and 60% stated to earn more than 1,500€ per month (Table 5).
729 (71%) selected two answers, 261 (26%) selected one and 31 (3%) chose no answer. The only demographic parameter associated with choosing two answers was living in a big city ($p = 0.031$). The most frequently selected option was "Improvement of patient safety standards" (n = 437, 43%). The most frequent combination of options was "Improvement of patient education and communication" with "Improvement of patient safety standards" (Fig. 12). Only one correlation could be found between demographic parameters and given answers: participants with higher education chose option number five significantly less often ($p = 0.020$).
Conclusions
There seems to be high public interest in participating actively in future patient safety decisions which was reflected by the great proportion (nearly ¾) of participants choosing the maximum of two options. The willingness for active participation is probably higher in bigger cities. Whether the higher degree of education in the urban regions may be a reason for this trend can only be speculated upon [4,5]. Interestingly, high education was associated with a decreased readiness to participate in regular surveys.

Acknowledgement
Special thanks go to "*Das Österreichische Gallup- Institut*" for conducting the survey.

Competing interests
None.

References
1. Jotterand F, Amodio A, Elger BS. Patient education as empowerment and self-rebiasing. Med. Health Care Philos. 2016;
2. Deccache A, van Ballekom K. From patient compliance to empowerment and consumer's choice: Evolution or regression? An overview of patient education in French speaking European countries. Patient Educ. Couns. 2010;78:282–7.
3. Bravo P, Edwards A, Barr PJ, Scholl I, Elwyn G, McAllister M, et al. Conceptualising patient empowerment: a mixed methods study. BMC Health Serv. Res. 2015;15:252.
4. Wong PKK, Christie L, Johnston J, Bowling A, Freeman D, Joshua F, et al. How well do patients understand written instructions?: health literacy assessment in rural and urban rheumatology outpatients. Medicine (Baltimore). 2014;93:e129.
5. Eyüboğlu E, Schulz PJ. Do health literacy and patient empowerment affect self-care behaviour? A survey study among Turkish patients with diabetes. BMJ Open. 2016;6:e010186.

Table 4 (A18). Questionnaire

Option no.	If you could, which orders would you place with the Austrian Society for Safety in Health? (2 answers possible)
1	Improvement of patient education and communication.
2	Improvement of patient safety standards.
3	Involvement of patients in processes for patient safety improvements.
4	Introduction of a uniform quality seal for patient safety for Austrian hospitals.
5	Regular surveys on patient satisfaction and release of the results.

Table 5 (A18). Demographic parameters

Demographic parameter	%
Female gender	52
Age (years)	
14-30	23
31-50	40
>50	37
Number of inhabitants at place of residence	
≤2,000	19
≤5,000	23
≤50,000	20
>50,000	16
capital (Vienna)	22
Highest level of education	
compulsory school	26
technical school	47
university degree	27
Monthly income	
≤1,500€	18
≤2,400€	21
≤3,000€	12
>3,000€	27
not specified	22

	Option 5 (260)	Option 4 (330)	Option 3 (269)	Option 2 (437)	Option 1 (423)
Option 1 (423)	**72**	**85**	**70**	**125**	
Option 2 (437)	**49**	**108**	**66**		
Option 3 (269)	**50**	**49**			
Option 4 (330)	**55**				
Option 5 (260)					

Fig. 12 (A18). Chart showing how often each option and combinations of options were selected. 1 = "Improvement of patient education and communication", 2 = "Improvement of patient safety standards", 3 = "Involvement of patients in processes for patient safety improvements", 4 = "Introduction of a uniform quality seal for patient safety for Austrian hospitals", 5 = "Regular surveys on patient satisfaction and release of the results"