Requirements for Health Care Organisations for participation in the WP5 implementation of Safe Clinical Practices

Health Care Organisations (HCOs) participating in the implementation of the selected Safe Clinical Practices (SCPs)[1] should meet the specific requirements listed in the following. A letter of interest (Annex 1) should be signed by the Chief Executive Officer (CEO) or President of the HCO (i.e. the highest legal representative of the HCO) in order to declare that these requirements have been fully understood and accepted. In a large organisation (e.g. academic medical center), the letter can alternatively be signed by the Head of Department. The letter of interest should be submitted to the PaSQ NCP.

1. Coordinator

The HCO should nominate a Coordinator. The Coordinator will represent the HCO, will be the main contact point and responsible for the implementation and evaluation process.

2. Implementation & evaluation acceptance

The HCO takes the responsibility to implement and evaluate the implementation of at least one of the selected SCPs, according to the WP5 concept.

Implementation:

- The SCP should not have been fully implemented in the HCO.
  "Fully implemented" is defined as: All process steps of the SCP have been put into effect in all eligible locations and for all eligible patient populations in the HCO.
- The implementation should start between July 1st and September 1st, 2013.
- It is expected that the HCOs will implement the SCP(s) according to the description provided for each SCP in Annexes 2a-2d
- There will be a tool box for each SCP, available from the beginning of July 2013 via log-in onto the wiki on the PaSQ website, with example tools which the HCOs can use to support the SCP implementation. In addition to the information provided in Annex 2, the tool boxes will include SCP-specific as well as generic tools which assist the planning, implementation, monitoring and evaluation stages of the implementation process.

Evaluation:

Each HCO is expected to take part in the overarching WP5 evaluation activities which consist of:

1) A baseline **questionnaire** containing questions related to baseline status (i.e. the level of implementation at the start of the WP5 implementation process) and demographic data (e.g. type of organization, number of beds)
   This will have to be completed in **September 2013**.
2) A final evaluation **questionnaire** containing questions related to:

[1] WHO Surgical Safety Checklist, Medication Reconciliation, Multimodal intervention to increase hand hygiene compliance, Paediatric Early Warning Scores (PEWS)

- status and local timeline of implementation;
- process / tools that have been implemented;
- barriers / drivers for implementation;
- impact on organizational culture / process quality / patient outcomes (perceived and/or measured);
- needed resources.

This will have to be completed in September 2014.

3) Exchange of indicator data

The HCOs are encouraged to share quantitative data they are collecting, especially quantitative data on outcomes. The objective of this sharing of quantitative data is on the one hand to see what kind of data the various HCOs are collecting on these practices. On the other hand it will support the exchange between HCOs, who can contact each other to receive more information, e.g. successful strategies of more experienced "high achievers". It is planned that the submitted quantitative data will be displayed on the log-in area of the PaSQ website.

3. Leadership involvement

The HCO should confirm the commitment of the leadership at the highest level of the HCO and agree the HCO participation. To this end, the letter of interest should be signed by the CEO or President of the HCO (i.e. the highest legal representative of the HCO). In a large organisation (e.g. academic medical center), the letter can alternatively be signed by the Head of Department.

4. Legal entity

The HCO should be a legal entity and not a component of a legal entity (for example a unit in a hospital).

5. Capacity to work in English

Since English is the common language of PaSQ and the language used in the implementation tool boxes, the HCO should confirm having understood this aspect and that at least the project coordinator is able to work in English.

6. Patient involvement

The HCO should aim for patient involvement, according to the definition provided by the PaSQ glossary and conceptual framework: Patient involvement is defined as the extent to which patients and their families or caregivers, whenever appropriate, participate in decisions related to their conditions (e.g. through shared decision-making, self-management) and contribute to organisational learning through their specific experience as patients (e.g. patient reporting of adverse events or participation in root cause analysis related to their care). For example, the HCO could demonstrate an effort for patient involvement by putting into use patient involvement interventions like fact sheets, cards, films or folders for patients containing information on the role they can play in preventing medical errors and tips for communicating with their health care provider, or making available feedback sheets for patients (to provide their concerns and opinion during interaction with the HCO).

Guidance to match the selected SCP(s) and HCOs

This document helps you in your work as PaSQ NCP to match the selected SCP(s) and HCOs. You should complete the following checklist to ensure that each HCO willing to take part in the implementation process complies with the requirements for participation.

Please note:
You need to recruit 3 or more HCOs in your country.
If you plan to implement 2 or more SCPs, then you need to recruit at least 2 HCOs per SCP.

Checklist

Requirements for participation	
The CEO or President of the HCO (i.e. the highest legal representative of the HCO) or Department Head in a large HCO will sign a letter of interest	☐
The HCO has nominated a Coordinator	☐
The Coordinator is able to work in English	☐
The HCO has not fully implemented the SCP	☐
The HCO accepts to implement and evaluate the selected SCP(s) according to the WP5 concept	☐
The HCO is able to start implementation before September 1st, 2013	☐
The HCO is a legal entity	☐
The HCO accepts the implementation tools will be provided in English	☐
The HCO aims for patient involvement, according to the definition provided by the PaSQ glossary and conceptual framework	☐

Annex 1
Letter of interest

[Title and Name]
[Name of the organisation]
[Address]

Dear PaSQ NCP,
Mr. / Mrs. [*Please insert name*]

This letter confirms that the organisation I represent, [*Please insert name*], will take part in the SCP implementation process within WP5 of PaSQ Joint Action.

With the present letter, I declare that the organisation I represent:

- takes the responsibility to implement and evaluate the implementation of the following SCP(s): *[please tick the relevant one(s)]*
  - ☐ WHO Surgical Safety Checklist;
  - ☐ Medication Reconciliation;
  - ☐ Multimodal Intervention to increase hand hygiene compliance;
  - ☐ Paediatric Early Warning Scores.
- has not fully implemented the selected SCP;
- will start the implementation no later than September 1st, 2013;
- is a legal entity;
- will aim for patient involvement, according to the definition provided by the PaSQ glossary and conceptual framework;
- will nominate a Coordinator.

The Coordinator, whose contact details are provided here below, will represent the organisation, will act as the main contact point and will be responsible for the implementation and evaluation process.

Coordinator Information
Name:
Position:
Telephone:
E-mail:

I agree that the implementation tool boxes will be provided in English and I declare that the Coordinator is able to work in this language.

Sincerely,
Date, Place
Signature CEO or President of HCO (i.e. the highest legal representative of the HCO) or Department Head in a large HCO

Annex 2
Descriptions of Safe Clinical Practices and implementation processes for WP5 tool boxes

The descriptions of the SCPs and implementation processes are provided in separate documents.

Annex 2a: SCP WHO Surgical Safety Checklist

Annex 2b: SCP Medication Reconciliation

Annex 2c: SCP Multimodal intervention to increase hand hygiene compliance

Annex 2d: SCP Paediatric Early Warning Scores

Title of the SCP	**WHO Surgical Safety Checklist**
Objective of the SCP (the underlying problem that the SCP addresses)	To improve the safety of surgical care around the world by defining a core set of safety standards that can be applied in all countries and settings (WHO 2009a). Each year an estimated 234 million major operations are performed around the world, corresponding to one operation for every 25 people alive. While surgical procedures are intended to save lives, unsafe surgical care can cause substantial harm. In industrialized countries major complications are reported to occur in 3-22% of inpatient surgical procedures, with permanent disability or death rates of approximately 0.4-0.8% (WHO 2009a). According to a systematic review, several studies report that approximately 50% of surgical adverse events can be considered preventable (Borchard et al 2012).
Innovator of the SCP, country of origin	In 2007, the World Health Organization (WHO) Patient Safety Group started to work on the Second Global Patient Safety Challenge – Safe Surgery Saves Lives (AHRQ 2013). Based on this work, WHO published the first edition of WHO guidelines for safe surgery in 2008 that was used as basis for the WHO Surgical Safety Checklist which was launched in the same year (World Alliance for Patient Safety 2008, AHRQ 2013). Updated versions of the guidelines, checklist and implementation manual were released in September 2009 (WHO 2013).
Short description of the SCP and information on implementation	The WHO Surgical Safety Checklist is a perioperative checklist which is intended to ensure safe surgery and to minimize complications (Haynes et al 2009). Due to its generic nature, the WHO Surgical Safety Checklist is applicable to a variety of settings and health care systems (Borchard et al 2012). **Health care organisations (HCOs) which will implement this SCP within Work Package 5 of the PaSQ Project are <u>expected</u> to apply the WHO Surgical Safety Checklist with the following three phases for surgical patients** (WHO 2009b, AHRQ 2013): **1. Before induction of anesthesia ("Sign In"),** o with at least nurse and anesthesist, further operating team members could be involved, o covering areas such as patient identification, site marking and anesthesia equipment check **2. Before skin incision ("Time Out"),** o with nurse, anesthesist and surgeon, further operating team members could be involved, o covering areas such as team introductions, review of critical steps, and antibiotic prophylaxis **3. Before patient leaves operating room ("Sign Out"),** o with nurse, anesthesist and surgeon, further operating team members could be involved, o covering areas such as checking counts of instruments, specimen

Title of the SCP	**WHO Surgical Safety Checklist**

labeling, and concerns for recovery

The following information contains <u>additional (optional)</u> guidance for HCOs implementing the WHO Surgical Safety Checklist:

- The checklist should be locally adapted to take into account differences among facilities with respect to their processes, the culture of their operating rooms and the degree of familiarity each team member has with each other (WHO 2009c).
- Removing items because they cannot be fulfilled in the existing environment or circumstances is strongly discouraged. Operating teams may consider adding other safety checks for specific procedures – e.g. regarding medical means such as heparin or warfarin (WHO 2009c).
- Principles for modifying the WHO Surgical Safety Checklist (WHO 2008):
  - *Focused* – The checklist should be concise, addressing those issues that are most critical and not effectively checked by other safety mechanisms. Ideally, there should be five to nine items in each phase of the checklist.
  - *Brief* – It should take no more than a minute to complete each phase of the checklist.
  - *Actionable* – Every checklist item should be linked to a specific, directly associated action so that the surgical team members know exactly what they are expected to do.
  - *Verbal* – The checklist is intended to promote and guide a verbal interaction among the surgical team members.
  - *Collaborative* – The modification of the checklist should be done in collaboration with representatives from groups who might be involved in its use. This is also important for creating the feeling of "ownership" which is central to adoption and permanent change in practice.
  - *Tested* – Prior to rollout of a modified checklist, it should be tested e.g. through a simulation (running through the checklist with operating team members sitting around a table) and through a use for a single day by a single operating team in order to collect feedback. This process should be continued until the operating team is comfortable that the checklist works in the given environment.
  - *Integrated* – Many institutions already have strategies that ensure the reliable execution of many of the processes which are part of the WHO Surgical Safety Checklist. Integrating new safety checks into the processes is a challenge but possible in nearly all settings. The major additions include the integration of team communication, briefings as well as debriefing. These items are of critical importance and should not be deleted from the checklist.
- Logistic considerations: For some HCOs, it could be useful to incorporate

Title of the SCP	**WHO Surgical Safety Checklist**
	the checklist in the existing system of the HCO or adjusted in the flow of care. For other HCOs, it could be essential that the checklist is short, simple and straightforward (Borchard et al 2012). • In addition to the logistic considerations, other factors exist that may increase the successful implementation in the HCOs, e.g., to hang a poster in every operation room with the aim of facilitating the whole team viewing the checklist and becoming familiar with it; to display a checklist screen saver on all computer screens for many weeks (Borchard et al 2012). • The success of the checklist implementation is much higher when it is managed by a multidisciplinary team which meets regularly as well as spontaneously, than when the implementation is managed by a single member of the surgical staff (Borchard et al 2012). • Training sessions of checklist use are platforms where common causes of surgical adverse events can be discussed, as well as "how" the checklist has to be conducted to prevent those events and to answer any questions around these topics (Sewell et al 2011, Borchard et al 2012). • Involving patients enhances the effectiveness of this practice. For example, patients should be actively engaged in the informed consent process, identity verification and surgical site marking, and be educated about the risks and what to look for. It is very important to inform patients about the checklist use and its intention; otherwise, some patients could perceive questions like "What's your name?" or "What is the site of your surgery?" as a lack of professionalism or even daunting (Borchard et al 2012).
Stepwise approach to implementation	**The following outlines the <u>key steps</u> for getting started on implementation of WHO Surgical Safety Checklist** (modified from the "Implementation Manual WHO Surgical Safety Checklist", WHO 2009c). More detailed information can be found within the tools included in this tool box. **1. Secure senior leadership commitment** Successful implementation of the WHO Surgical Safety Checklist requires sincere commitment by the HCOs' leaders. The chiefs of surgery, anaesthesia and nursing departments should publicly embrace the belief that safety is of high priority and that the use of the checklist can help to make it reality. **2. Form a team** The commitment by all team members that are involved in surgical procedures is essential. There should be a core group of people who are enthusiastic about the WHO Surgical Safety Checklist. At this early stage it is recommendable to work with those who are interested rather than trying to convince the most resistant people.

Title of the SCP	**WHO Surgical Safety Checklist**
	Representation of the core group could include: o colleagues from as many relevant clinical disciplines (surgery, anaesthesia, nursing) as possible; it would be good to include at least one member from each of the disciplines o HCOs' leaders o administrators **3. Start small, then expand** *Start small* Test out the WHO Surgical Safety Checklist in one operating room with one team. *Expand* Move forward, when... o one team is comfortable using the checklist, o problems have been addressed, o enthusiasm builds. Discuss the efforts with different surgical departments and surgeons and make sure that those team members who were originally involved in the process are using the checklist in their own operating rooms. Address resistance as it arises. Involve clinicians who have used the checklist and have had good experiences with it as champions for promoting the checklist and for defending its use and spread in the HCO. **4. Track changes and improvements (evaluation)** HCOs should collect data for process and outcome measures to see if the standards are being followed and implementation has been successful. *Process measures:* Process measures may help identify safety lapses and areas for improvement. Suggestions for measurement are the frequencies of compliance with e.g. verbal confirmation of patient, site and procedure immediately before incision with all team members present (further suggestions can be found in the WHO Implementation Manual which is included in this tool box). *Outcome measures*: The monitoring and evaluation of outcomes is an essential component of surgical care and WHO highly recommends the establishment of a monitoring system. For example, death on the day of a surgery and postoperative in-hospital mortality deaths should be collected systematically.
Information on needed	The WHO Surgical Safety Checklist is free to download from the WHO website in six languages (English, Arabic, Chinese, French, Russian, Spanish). The website also contains examples of locally adapted checklists (WHO 2013).

Title of the SCP	**WHO Surgical Safety Checklist**
resources	Human resources are required in order to implement the checklist in the whole HCO (WHO 2009d). Costs of implementing the checklist mostly involve the modification of the WHO Surgical Safety Checklist, formal staff notification that the use of the checklist is expected and staff training (AHRQ 2013). Semel et al. estimated in 2010 (based on a performed hypothetical decision analysis of checklist introduction in a hospital in the USA) that US $ 103 829 (€ 80 080 as of March 18th 2013) could be saved annually in a hospital which conducts 4000 noncardiac operations.
References	Agency for Healthcare Research and Quality (AHRQ). Making Health Care Safer II: An Updated Critical Analysis of the Evidence for Patient Safety Practices. 2013. Available from: http://www.ahrq.gov/research/findings/evidence-based-reports/ptsafetyII-full.pdf (Accessed March 15th 2013) Borchard A, Schwappach DLB, Barbir A, Bezzola P. A Systematic review of the effectiveness, compliance, and critical factors for implementation of safety checklists in surgery. Ann Surg. 2012; 256(6):925-33 Haynes AB, Weiser TG, Berry WR, Lipsitz SR, Breizat AH, Dellinger EP, Herbosa T, Joseph S, Kibatala PL, Lapitan MC, Merry AF, Moorthy K, Reznick RK, Taylor B, Gawande AA. A surgical safety checklist to reduce morbidity and mortality in a global population. N Engl J Med 2009;360(5):491-9 Semel ME, Resch S, Haynes AB, Funk LM, Bader A, Berry WR, Weiser TG, Gawande AA. Adopting a surgical safety checklist could save money and improve the quality of care in U.S. hospitals. Health Aff (Millwood). 2010; 29:1593-99. Sewell M, Adebibe M, Jayakumar P, Jowett C, Kong K, Vemulapalli K, Levack B. Use of the WHO surgical safety checklist in trauma and orthopaedic patients. Int Orthop. 2011; 35:897–901. World Health Organization. Patient safety. Safe Surgery Saves Lives. The Second Global Patient Safety Challenge. 2013. Available from: http://www.who.int/patientsafety/safesurgery/en/index.html (Accessed March 19th 2013) World Health Organization. WHO Guidelines for Safe Surgery 2009. Safe Surgery Saves Lives. 2009a. Available from: http://whqlibdoc.who.int/publications/2009/9789241598552_eng.pdf (Accessed March 15th 2013) World Health Organization. Surgical Safety Checklist. 2009b. Available from: http://whqlibdoc.who.int/publications/2009/9789241598590_eng_Checklist.pdf (Accessed March 15th 2013) World Health Organization. Implementation Manual WHO Surgical Safety Checklist. 2009c. Available from:

Title of the SCP	**WHO Surgical Safety Checklist**
	http://whqlibdoc.who.int/publications/2009/9789241598590_eng.pdf (Accessed March 15th 2013) World Health Organization. Safe Surgery Saves Lives FAQ. 2009d. Available from: http://www.who.int/patientsafety/safesurgery/knowledge_base/faq.pdf (Access March 18th 2013) World Health Organization. Checklist Adaption Guide. 2008. Available from: http://www.who.int/patientsafety/safesurgery/checklist_adaptation.pdf (Accessed March 15th 2013) Word Alliance for Patient Safety. The Second Global Patient Safety Challenge. Safe Surgery Saves Lives. World Health Organization. 2008. Available from: http://whqlibdoc.who.int/hq/2008/WHO_IER_PSP_2008.07_eng.pdf (Accessed March 15th 2013)

Title of the SCP	**Medication Reconciliation**
Objective of the SCP (the underlying problem that the SCP addresses)	To identify and correct medication errors (unintentional medication discrepancies) across transitions of care. Transitions in care, such as admission to and discharge from the hospital, put patients at risk for errors due to poor communication and inadvertent information loss. Up to 67% of patients admitted to the hospital have unintended medication discrepancies, and these discrepancies remain common at discharge (Kwan et al 2013). Almost one-third of medication discrepancies occurring at hospital admission or discharge have the potential to cause patient harm (i.e., potential adverse drug events) (Mueller et al 2012). Adverse drug events associated with medication discrepancies can prolong hospital stays and, in the postdischarge period, may lead to emergency department visits, hospital readmissions, and use of other health care resources (Mueller et al 2012).
Innovator of the SCP, country of origin	Medication Reconciliation has been established in the past decade particularly in the USA, Canada and Australia. The majority of publications come from the USA and Canada; further publications are available from Europe.
Short description of the SCP and information on implementation	Medication Reconciliation is the process of identifying the most accurate list of all medications a patient is taking and using this list to provide correct medications for patients within the health care system (IHI 2011). The majority of the available literature on Medication Reconciliation focuses on hospital-based transitions in care (Kwan et al 2013). For this reason, the below information is most applicable to hospital care. However, Medication Reconciliation can also be implemented in facilities in other settings i.e. primary care, long-term care and home care (see below for more information). **Health care organisations (HCOs) which will implement this SCP within Work Package 5 of the PaSQ Project are <u>expected</u> to introduce the following three-step Medication Reconciliation process** (ISMP Canada 2011): **1. Create a complete and accurate Best Possible Medication History (BPMH)** of all the patient's prescribed and nonprescribed medications including name, dosage, route and frequency. More comprehensive than a routine primary medication history, the BPMH involves two steps: I. a systematic process of interviewing the patient/family and II. verification of this information with at least one other reliable source of information (for example, patient medication lists, a community pharmacy, a primary care physician, a government medication database, medication vials) **2. Reconcile medications:** Use the BPMH to create admission orders or compare the BPMH against admission medication orders, transfer medication orders, or discharge medication orders; identify and resolve all differences or discrepancies; and

Title of the SCP	**Medication Reconciliation**

3. **Document and communicate** any resulting changes in medication orders to the patient, family/caregiver and to the next provider of care.

The following information contains <u>additional (optional)</u> guidance for HCOs implementing Medication Reconciliation:

- The literature shows that most successful Medication Reconciliation interventions rely heavily on pharmacists (Mueller et al 2012, Kwan et al 2013). A multidisciplinary team approach including physicians and nurses is needed to ensure Medication Reconciliation is completed successfully (ISMP Canada 2011).

- Patient involvement, including patient interviews, is important in the Medication Reconciliation process. The patient is the only constant participant across the system and is critical to the success of this major system change (ISMP Canada 2011). Medication counseling to patients and follow-up is recommended (Mueller et al 2012).

- In the hospital setting, Medication Reconciliation can be applied for patients in any wards (e.g. medical wards, surgery wards, pediatric wards, critical care units etc.) (Kwan et al 2013). Focusing on high risk patients may assist in directing resources efficiently. Examples for selection criteria for high risk patients are advanced age, presence of chronic illnesses, or use of multiple medications. However, in the literature there are conflicting results as to whether focusing on high risk patients improves the effect of Medication Reconciliation (Kwan et al 2013, Mueller et al 2012).

- Guidance suggests Medication Reconciliation should occur within 24 hours of hospital admission (ISMP Canada 2011).

- Communication with postdischarge providers regarding the discharge medication regimen is recommended, including how and why the regimen differs from before admission (Mueller et al 2012).

Little guidance exists for Medication Reconciliation in primary care. According to a systematic review, few studies have examined systematic Medication Reconciliation in the primary care setting. The following intervention was described in the two studies conducted in the ambulatory setting which were included in this review: All clinic team members (including receptionists, nurses and physicians) performed Medication Reconciliation at each patient visit. Patients were asked to bring an updated list of their drugs or their medication bottles to clinic appointments. Nurses and physicians then reconciled the patient medication list with the electronic medical record (Bayoumi et al 2009).

The website of ISMP Canada provides guidance and tools for implementing Medication Reconciliation in further settings, e.g. long-term care and home care (http://www.ismp-canada.org/medrec/ (March 13 2013)).

Title of the SCP	**Medication Reconciliation**
Stepwise approach to implementation	**The following outlines the <u>key steps</u> for getting started on implementation of Medication Reconciliation** (modified from the „Medication Reconciliation in Acute Care Getting Started Kit", ISMP Canada 2011). More detailed information can be found within the tools included in this tool box (e.g. Getting Started Kits of ISMP Canada). **1. Secure senior leadership commitment** Implementing a successful Medication Reconciliation process requires clear commitment and direction from the highest level of the organisation. **2. Form a team** Teamwork is an integral part of the Medication Reconciliation process. Medication Reconciliation is not owned by one discipline. Clinical champions can contribute significantly to successful implementation. *Representation of the coordination team could include:* o Senior Administrative leadership (executive sponsor) o Clinical leaders representing physicians, nursing and pharmacy staff o Front line caregivers from key settings of care, and from all shifts o Representatives from other work units or committees whose responsibilities/mandates include the improvement of patient safety (e.g. Patient Safety Officer, representatives from Quality Improvement/Risk Management, Patient Representatives, Pharmacy and Therapeutics committee) o Patient and/or family member **3. Define the problem** *Set aims (goals and objectives)* The aims/goals should be SMART – <u>s</u>pecific (e.g. regarding the population of patients that will be affected), <u>m</u>easurable, <u>a</u>ccepted, <u>r</u>easonable and <u>t</u>ime-bound. *Collect baseline data* It is critical to collect baseline data to get a sense of what some of the issues are, at each interface of care, in the facility. "Baseline data" reflects the types of discrepancies that exist prior to the implementation of the Medication Reconciliation process and will provide the information the team needs to build the case for Medication Reconciliation, and help to identify areas of focus. **4. Start with small projects and build expertise in reconciling medications** Initially implement a Medication Reconciliation process on a smaller scale with selected groups of patients, on selected units or during a specific point in the continuum of care to develop forms and tools that work in your organisation

Title of the SCP	**Medication Reconciliation**
	and to gain expertise in the Medication Reconciliation process. Although Medication Reconciliation can occur at any of the transition points in care (e.g., admission, transfer, discharge), it is suggested that one starts at the admission process. If Medication Reconciliation is not done right at admission, the process could be continued using inaccurate information. As patients may be admitted to the hospital from a number of points, select one area (e.g. pre-operative screening or the emergency department). *Map the current and ideal process* Use process flow diagrams to outline the current process in place and a new ideal process that can be trialed and tested using a model for improvement (plan-do-check-act). *Adapt and test a Medication Reconciliation form* The purpose of these forms is to aid in the collection of a Best Possible Medication History (BPMH), to share the information with prescribers, and to facilitate reconciliation (the documentation of prescriber decisions about medication orders). Examples for forms can be found within the tools included in this tool box (e.g. in the Getting Started Kits of ISMP Canada). **5. Evaluate improvements being made – collect data** In order to determine if the implementation has been successful, measurements should be made on an ongoing basis (e.g. monthly). Tracking a few key measures over time is the single most powerful tool a team can use and will help it to see the effects of the changes it is making (see the tools included in this tool box, e.g. the Getting Started Kits of ISMP Canada, for detailed measurement tips). **6. Spread** As experience develops and measurement of the success of your medication reconciliation process reflects sustained improvement the process can be implemented for more patients in more areas. Evaluate at each new step before adding more units to the process. Organise information and communication activities around the initiative at the different stages of implementation: o For the staff involved o For other staff in the unit o For patients and families
Information on needed resources	The implementation of Medication Reconciliation is resource-intensive. This is especially true if pharmacists are involved in conducting Medication Reconciliation, because this requires substantial investment of resources beyond usual care. Nevertheless, a systematic review of economic analyses of patient safety strategies came to the conclusion that pharmacist-led Medication

Title of the SCP	**Medication Reconciliation**
	Reconciliation is one of five economically attractive strategies for improving patient safety (Etchells et al 2012). In one model-based study, which was included in the systematic review, the authors estimated the cost for implementing pharmacist-led Medication Reconciliation at £ 1897 (ca. € 2200 as of March 14th 2013) per 1000 prescription orders (Karnon et al 2009). Medication Reconciliation can be integrated into applications as Computerized Physician Order Entry (CPOE) and Electronic Medical Records (EMR), although it can also be conducted paper-based if such systems have not been introduced in the facility. Thorough training of staff, e.g. on creating the BPMH, is of utmost necessity.
References	Bayoumi I, Howard M, Holbrook AM, Schabort I. Interventions to improve medication reconciliation in primary care. Ann Pharmacother. 2009;43(10):1667-75 Etchells E, Koo M, Daneman N, McDonald A, Baker M, Matlow A, Krahn M, Mittmann N. Comparative economic analyses of patient safety improvement strategies in acute care: a systematic review. BMJ Qual Saf. 2012; 21(6): 448-56 Institute for Healthcare Improvement. Medication Reconciliation Review. 2011. Available from: http://www.ihi.org/knowledge/Pages/Tools/MedicationReconciliationReview.aspx (Accessed March 14th 2013) Institute for Safe Medication Practices Canada (ISMP Canada). Medication Reconciliation in Acute Care Getting Started Kit. Version 3.0. 2011. Available from: http://www.ismp-canada.org/medrec/ (Accessed March 14th 2013) Karnon J, Campbell F, Czoski-Murray C. Model-based cost-effectiveness analysis of interventions aimed at preventing medication error at hospital admission (medicines reconciliation). J Eval Clin Pract. 2009;15:299-306 Kwan JL, Lo L, Sampson M, Shojania KG. Medication Reconciliation During Transitions of Care as a Patient Safety Strategy. A Systematic Review. Ann Intern Med. 2013;158:397-403. Available from: http://annals.org/article.aspx?articleid=1656444 (Accessed March 14th 2013) Mueller SK, Sponsler KC, Kripalani S, Schnipper JL. Hospital-Based Medication Reconciliation Practices. A Systematic Review. Arch Intern Med. 2012;172(14):1057-69

Title of the SCP	**Multimodal intervention to increase hand hygiene compliance**
Objective of the SCP (the underlying problem that the SCP addresses)	To reduce the number of health care associated infections (HCAI) by the use of multimodal interventions to increase hand hygiene compliance. The primary measure for the reduction of HCAI and of the spread of antimicrobial resistance is hand hygiene. Although it is well-accepted that hand hygiene is a critical patient safety practice for reducing HCAI, compliance with this practice is often low (AHRQ 2013, Allegranzi et al 2009). Adherence of health care workers to recommended hand hygiene procedures has been reported as averaging 39% (WHO 2009a). HCAI are a major problem for patient safety and its surveillance and prevention must be a first priority for settings and institutions committed to making health care safer (WHO 2009a). The European Centre for Disease Prevention and Control (ECDC) reported that approximately 4 131 000 patients are affected by about 4 544 100 episodes of HCAI every year in Europe. According to these estimates HCAI cause 16 million extra-days of hospital stay and 37 000 attributable deaths annually, but also contribute to an additional 110 000 deaths. Financially, these infections account for approximately € 7 billion per year, including direct costs only (ECDC 2008).
Innovator of the SCP, country of origin	Several major hand hygiene compliance programmes have been developed and made publicly available, e.g. from the World Health Organization (WHO), the U.S. Centers for Disease Control, and the Institute for Healthcare Improvement (IHI). In 2009 WHO launched a global campaign called SAVE LIVES: Clean Your Hands to improve hand hygiene amongst health care workers. It is a major component of the First Global Patient Safety Challenge: Clean Care is Safer Care initiative which was started in 2005 (WHO 2013). Based on these initiatives the WHO published amongst other tools Guidelines on Hand Hygiene in Health Care (WHO 2009a) and a guide to the implementation of the WHO multimodal hand hygiene improvement strategy (WHO 2009b).
Short description of the SCP and information on implementation	Hand hygiene is a general term for removing microorganisms with a disinfecting agent such as alcohol or soap and water (AHRQ 2013). **Health care organisations (HCOs) which will implement this SCP within Work Package 5 of the PaSQ Project are <u>expected</u> to introduce the WHO multimodal hand hygiene improvement strategy as outlined below** (WHO 2009a, WHO 2009b): • Based on WHO Consensus Recommendations, hands should be washed with soap and water when visibly dirty or visibly soiled with blood or other body fluids or after using the toilet. Also if exposure to potential spore-forming pathogens is strongly suspected or proven, including outbreaks of *Clostridium difficile*, hand washing with soap and water is the preferred means. In all other clinical situations an alcohol-based hand rub should be used as the preferred means for routine hand antisepsis.

Title of the SCP	**Multimodal intervention to increase hand hygiene compliance**

- WHO has identified **five crucial moments for hand hygiene** in health care:
  1. Before touching a patient;
  2. Before a clean/aseptic procedure;
  3. After body fluid exposure risk;
  4. After touching a patient;
  5. After touching patient surroundings.

- WHO recommends that a **multimodal strategy** is necessary to induce sustained hand hygiene practice improvements; therefore recommendations for proper hand hygiene address different levels. Multimodal interventions to increase hand hygiene compliance are applicable to any health care setting or health care institution[1]. Based on the WHO Guidelines on Hand Hygiene in Health Care a number of components make up an effective multimodal strategy for hand hygiene; **HCOs are expected to implement features of each of the below components:**
  - **System change:** ensuring that the necessary infrastructure is in place to allow health care workers to practice hand hygiene. This includes two essential elements: access to a safe, continuous water supply as well as to soap and towels; readily-accessible alcohol-based hand rub at the point of care. Availability of alcohol-based hand rub at the point of care is usually achieved through staff-carried hand rubs (pocket bottles), wall-mounted dispensers, containers affixed to the patient's bed or bedside table or to dressing or medicine trolleys that are taken to the point of care.
  - **Training/education:** providing regular training on the importance of hand hygiene, based on the "My five moments for hand hygiene" approach and on the correct procedures for handrubbing and handwashing to all health care workers. HCOs should also provide information to health care workers regarding hand hygiene practices that reduce skin irritation and provide lotions or creams to minimize the occurrence of skin irritation.
  - **Evaluation and feedback:** monitoring hand hygiene practices and infrastructure, along with related perceptions and knowledge among health care workers, while providing performance and results feedback to the staff. WHO recommends using a validated methodology for training observers to directly monitor hand hygiene

[1] WHO has produced the document "Hand Hygiene in Outpatient and Home-based Care and Long-term Care Facilities" to address considerations specific to these settings and provide practical explanations to understand the concepts for the implementation of the "My five moments for hand hygiene" approach and the WHO Multimodal Hand Hygiene Improvement Strategy in outpatient care (WHO 2012).

Title of the SCP	**Multimodal intervention to increase hand hygiene compliance**
	compliance using "My five moments for hand hygiene". o **Reminders in the workplace:** prompting and reminding health care workers about the importance of hand hygiene and about the appropriate indications and procedures for performing it (for example "How to" and "5 Moments" posters from the WHO toolkit are displayed in all test wards, including patients' rooms, staff areas and out-patient/ambulatory departments). o **Institutional safety climate:** creating an environment and the perceptions that facilitate awareness-raising about patient safety issues while guaranteeing consideration of hand hygiene improvement as a high priority at all levels, including: active participation at both the institutional and individual levels; awareness of individual and institutional capacity to change and improve (self-efficacy); and partnership with patients and patient organisations depending on cultural issues and the resources available. • Detailed information on each of the above components and tools developed specifically for these components can be found in the WHO Guide to Implementation (WHO 2009b) and online on the corresponding WHO site (http://www.who.int/gpsc/en/ and http://www.who.int/gpsc/5may/tools/en/ (April 2nd 2013)). All of the tools are available in French and a number of them also in Spanish and Russian (http://www.who.int/gpsc/5may/tools/fr/, http://www.who.int/gpsc/5may/tools/es/ and http://www.who.int/gpsc/5may/tools/ru/ (April 2nd 2013)). • Patient awareness and understanding of hand hygiene are important aspects to be considered in the action plans of a multimodal hand hygiene improvement programme. Positive encouragement by patients of health care workers to motivate them to implement good hand hygiene could improve compliance with the "My 5 Moments for Hand Hygiene" approach. Performing correct hand hygiene in view of the patient can promote patient confidence and partnership between patients and health care workers to make care safer. More information on engaging patients in the hand hygiene programme can be found in the WHO tool "Guidance on Engaging Patients and Patient Organizations in Hand Hygiene Initiatives", as part of the component "Institutional safety climate" (http://www.who.int/gpsc/5may/tools/safety_climate/en/ (April 12th 2013)).
Stepwise approach to implementation	**The following outlines a step-wise approach as a model to gradually implement a comprehensive hand hygiene programme at the facility level** (taken from the „Guide to Implementation of the WHO Multimodal Hand Hygiene Improvement Strategy", WHO 2009b). More detailed information can be found within this document and within the tools provided in this tool box. The approach represents a cycle that should be adapted locally and renewed periodically by any facility aiming to sustain hand

Title of the SCP	**Multimodal intervention to increase hand hygiene compliance**

hygiene improvement.

1. Facility preparedness

This includes obtaining necessary resources, putting infrastructure in place, and identifying key leadership to head the programme including a coordinator and his/her deputy. Proper planning must be done to map out a clear strategy for the entire programme. Facilities are recommended to consider implementing initially in wards where motivation and interest are high and the health gain is likely to be substantial and subsequently have an impact on others.

2. Baseline evaluation

A baseline evaluation of hand hygiene practice, perception, knowledge and the infrastructure available should be conducted. This will provide reference information for any comparison and assessment of progress as the multimodal strategy is being implemented.

3. Implementation

This is the key phase to achieve improvement and it consists of implementing all the interventions planned in step 1 and using the core findings from step 2 to motivate improvement. Ensuring the availability of an alcohol-based hand rub at the point of care is vitally important, as is conducting staff education and training and displaying reminders in the workplace. Well-publicized events involving endorsement and/or signatures of commitment from leaders and individual health care workers will generate great participation.

4. Follow-up evaluation

A follow-up to the baseline evaluation should be conducted to assess the effectiveness of the programme (i.e., infrastructure, perception and knowledge surveys should be conducted and hand hygiene observation and soap/hand rub consumption data collected according to the plans). Since this evaluation will be carried out shortly after implementation, it will provide information only about the immediate impact of the programme. To gather long-term impact data it is necessary to undertake further evaluation on the basis of a longer follow-up and to invest in continuous monitoring of key indicators.

5. Ongoing planning and review cycle

Developing and implementing ongoing action plans while ensuring that there is a constant review cycle is essential if the overall aim to embed hand hygiene as an integral part of the health care facility culture is to be achieved long-term. Hand hygiene improvement is not a time-limited process: hand hygiene promotion and monitoring should never be stopped once implemented.

Title of the SCP	**Multimodal intervention to increase hand hygiene compliance**
Information on needed resources	The costs of hand hygiene promotion programmes include the costs of hand hygiene installations and products plus the costs associated with health care workers' time and the educational and promotional materials required by the programme (WHO 2009a). It was estimated by Pittet and colleagues that direct and indirect costs associated with a hand hygiene programme are less than US $ 57 000 per year for a 2600-bed hospital, approx. US $ 1.42 per patient (€ 1.11 as of April 2nd 2013). The authors concluded that the hand hygiene programme was cost-saving if less than 1% of the reduction in HCAI observed was attributable to improved hand hygiene practice (Pittet et al 2000).
References	Agency for Healthcare Research and Quality (AHRQ). Making Health Care Safer II: An Updated Critical Analysis of the Evidence for Patient Safety Practices. 2013. Available from: http://www.ahrq.gov/research/findings/evidence-based-reports/ptsafetyII-full.pdf (Accessed March 28th 2013) Allegranzi B, Pittet D. Role of hand hygiene in healthcare-associated infection prevention. Journal of Hospital Infection. 2009; 73: 305-15 European Centre for Disease Prevention and Control (ECDC). Annual epidemiological report on communicable diseases in Europe 2008. Report on the state of communicable diseases in the EU and EEA/EFTA countries. Stockholm 2008. Available from: http://www.ecdc.europa.eu/en/publications/publications/0812_sur_annual_epidemiological_report_2008.pdf (Accessed April 12th 2013) Pittet D, Hugonnet S, Harbarth S, Mourouga P, Sauvan V, Touveneau S, Perneger TV. Effectiveness of a hospital-wide programme to improve compliance with hand hygiene. Infection Control Programme. Lancet 2000; 356(9238):1307-12 World Health Organization. WHO Guidelines on Hand Hygiene in Health Care. First Global Patient Safety Challenge. Clean Care is Safer Care. 2009a. Available from: http://whqlibdoc.who.int/publications/2009/9789241597906_eng.pdf (Accessed April 2nd 2013) World Health Organization. A Guide to the Implementation of the WHO Multimodal Hand Hygiene Improvement Strategy. 2009b. Available from: http://whqlibdoc.who.int/hq/2009/WHO_IER_PSP_2009.02_eng.pdf (Accessed April 2nd 2013) World Health Organization. Clean Care is Safer Care. 2013. Available from: http://www.who.int/gpsc/en/ (Accessed April 2nd 2013) World Health Organization. Hand Hygiene in Outpatient and Home-based Care and Long-term Care Facilities. A Guide to the Application of the WHO

Title of the SCP	**Multimodal intervention to increase hand hygiene compliance**
	Multimodal Hand Hygiene Improvement Strategy and the "My Five Moments for Hand Hygiene" Approach. 2012. Available from: http://www.who.int/gpsc/5may/hh_guide.pdf (Accessed April 2nd 2013)

Title of the SCP	**Paediatric Early Warning Scores (PEWS)**
Objective of the SCP (the underlying problem that the SCP addresses)	• To provide a validated, easy to use, practical, generic tool to monitor and to prevent avoidable deterioration in sick children • To provide age-appropriate values to enable the effective monitoring of the sick child • To enable staff to communicate information about the sick child appropriately and to respond effectively
Innovator of the SCP, country of origin	NHS Institute for Innovation and Improvement; UK This project has been a collaborative one between the NHS Institute for Innovation and Improvement (NHSIII) and major Trusts in England, e.g. Great Ormond Street Hospital for Children and the Royal Free NHS Foundation Trust. Previously almost every hospital in the UK used different PEWS charts and calculated PEWS in different ways. There is limited research into the trigger points for scoring and escalation. Even where a system is in place, usage can be variable, scoring unreliable, and escalation unstructured. The NHS Institute led a collaborative with paediatric units across England to address some of the design and implementation issues. They have produced resources which are free and available on their website. Staff at NHSIII worked with nurses and doctors at the Royal Free NHS Foundation Trust in North London to develop and test the prototype charts. Using established models for improvement and small scale tests of change (PDSA cycles), the chart design was refined and the escalation procedure using SBAR was added. The project was further tested in a number of major paediatric units in Trusts in England. 18 months after the project was completed, the charts are still in use and paediatric units are currently updating them to support further improvements.
Short description of the SCP and information on implementation	PEWS provide a systematic approach to enable staff to monitor the sick child using appropriate age-related values. The SCP is to be applied by clinical staff in paediatric units in acute hospital settings for all paediatric patients. Early warning scores are generated by combining the scores from a selection of routine observations of patients e.g. pulse, respiratory rate, respiratory distress, consciousness level. Different observations are selected for children and adults due to their naturally different physiological responses. If a child's clinical condition is deteriorating the "score" for the observations will (usually) increase and so a higher or increasing score gives an early indication that intervention may be required. Early intervention can "fix" problems and can avoid the need to transfer a child to a higher level of

Title of the SCP	**Paediatric Early Warning Scores (PEWS)**
	care and thus avoid or reduce harm. **Health care organisations (HCOs) which will implement this SCP within Work Package 5 of the PaSQ Project are <u>expected</u> to introduce Pediatric Early Warning Scores charts into routine care which are based on the PEWS charts developed and tested by the NHS Institute for Innovation and Improvement** (see http://www.institute.nhs.uk/safer_care/paediatric_safer_care/pews_charts.html (March 25th 2013)). *The link will be appropriately updated if it does not exist anymore by the time the tool boxes go online in June 2013*. **It is encouraged that health care organisations modify the charts to suit their needs.** The charts of the NHSIII and those of other hospitals that have used the approach of NHSII to inform their own chart design can be downloaded free to use and adapt. The NHSIII asks that the source is attributed e.g. adapted from an original design by the NHS Institute for Innovation and Improvement, England.

Stepwise approach to implementation	**The following outlines <u>crucial factors</u> for the implementation of Paediatric Early Warning Scores** (taken from the presentation „Recognising and responding to deterioration in children - what do we know?" by Sue Chapman, NHS III, PEWS event 4th Nov. 2010, available at: www.institute.nhs.uk/safer_care/paediatric_safer_care/our_early_pews_work.html).
	
	1. Local leadership
	• Executive support
	• Clinical champions
	• Deteriorating patient steering group?
	• Motivation
	• Protected time
	• Resources
	
	2. Effective implementation
	• Model for improvement
	  o How much
	  o By when
	  o By whom
	• Small scale tests of change
	• Spread and sustainability
	• Engaging and motivating staff

Title of the SCP	**Paediatric Early Warning Scores (PEWS)**

	• Policies and procedures
	
	3. Training
	• Staff training – Nurses, doctors and other frontline staff
	  o Initial
	  o Ongoing
	  o Updates
	• Who? When? Where?
	• Reliability
	• Simulation and e-learning can be used to support training
	
	4. Ongoing evaluation
	• Evaluation and feedback strategy
	• Ongoing responsibility
	• Continuous monitoring
	  o process, outcome and balancing measures
	• Benchmarking
	• Safety and incident reports
	• Failure to rescue, M & M and case reports
	
	A human factors approach should be taken into consideration, e.g. factors influencing human performance and human error.

Information on needed resources	Experience from the UK collaborative shows that few resources are needed to implement the PEWS charts. Staff is required to lead the project. Time for training staff needs to be allocated, although this is generally short (10 minutes can be enough). The PEWS charts need to be printed, although as they might replace the old vital signs charts, this would not necessarily generate an extra need for resources.
References	NHS Institute for Innovation and Improvement (NHS III). Paediatric Early Warning Scores. 2013. Available from: http://www.institute.nhs.uk/safer_care/paediatric_safer_care/pews.html http://www.institute.nhs.uk/safer_care/paediatric_safer_care/pews_charts.html http://www.institute.nhs.uk/safer_care/paediatric_safer_care/our_early_pews_work.html (Accessed March 25th 2013)