The First Global Patient Safety Challenge: Clean Care is Safer Care;
Summary report of a visit to the pilot site for the South East Asia Region: Chittagong Medical College Hospital, Bangladesh
January 2008
Introduction to the report

Chittagong Medical College Hospital (CMCH), Chittagong, Bangladesh, is a 1010 bedded government run tertiary referral centre, serving a population of 40 million. Daily average in-patient bed occupancy stands at 1600. CMCH is the official pilot site for the evaluation of the implementation of the WHO Guidelines on Hand Hygiene in Health Care (Advanced Draft) for the South East Asia Region of WHO. Activity within the pilot site in Bangladesh is centred around testing the feasibility and validity of implementing a multimodal hand hygiene improvement strategy, within the context of overall health systems strengthening in relation to the prevention of health care-associated infection (HAI). Hand hygiene improvement is part of an integrated strategy to address the prevention of HAI in relation to water, sanitation and waste management, surgical procedures, blood safety, injection and immunization safety. Hand hygiene can be positioned as the central pillar of a comprehensive approach to patient safety.

This report describes the activities and outcome of the visit to CMCH and the Country Office Bangladesh. The objectives of the visit can be seen in annex 1.

Background

The First Global Patient Safety Challenge is being addressed against a backdrop of related actions at both the regional and country level.

Regional activity:

- Regional Patient Safety Workshop: in 2006, the South East Asia Regional Committee made a resolution (SEA/RC59/R3) to address patient safety. In connection with this, the prevention of HAI was one of four priority areas of work discussed by participants at a WHO Regional Workshop on Patient Safety. The workshop was concerned with both the promotion of regional awareness and the regional response to the threat of HAI in the context of patient safety.
- Regional Workshop, Clean Care is Safer Care, Bangkok, 2007: In association with the regional response to the First Global Patient Safety Challenge, a workshop was held in Thailand. Representatives from across the region participated in a two day workshop to address the prevention of HAI, technical aspects of hand hygiene improvement strategies and advocacy in this regard. The workshop explored the regional context and the infrastructural constraints facing a number of member states and can best be summarized by the chairs closing remarks: "We need to start by cleaning our hospitals, improving the water supply, ensuring supplies and then changing the habits" (Dr Khanum, 2007).

Country activity:

- Bangladesh is taking action at a number of levels to tackle HAI which has culminated in the pilot activity within CMCH.
- Within the Country Cooperation Strategy ((2008-2013), strategic direction 6: “Strengthen the health system with a focus on health workforce development and equitable access to quality health care,” makes explicit reference to the prevention of HAI including strategic action at the country level to address health care-associated risk through patient safety measures such as blood safety, hand hygiene, safe injection practices, hospital waste management and other areas of facility-based quality assurance.
- A country-wide assessment of infection prevention and control practices in health care facilities took place in 2006
• A number of hospitals within the country participated in the International Council of Nurses, Nurse Leadership Programme, and as a result of this, model wards have been developed, with a focus on infection control.
• The Hospital Improvement Initiative also focused on infection control.
• The biennial country plan 2005-2007 and 2008-2010 incorporate prevention of HAI through implementation of a hand hygiene improvement strategy.

Day 1  Sunday 13th January 2008

1. **Introduction:**
   a. Following a high profile launch event at Chittagong Medical College Hospital (CMCH). January 3rd 2008, in which approximately 300 health care staff participated, including high level directors and administrators, interest was expressed by Chittagong City Corporation (CCC) to join the improvement project.
   b. Day 1 of the mission therefore targeted two of the hospitals covered by the CCC.

2. **Site visit: Memom City Corporation Hospital:**
   a. A tour of the maternity wards highlighted the profound infrastructural constraints within the wards. No sinks present in ward cubicles.

3. **Site visit: Mostafa Hakin Maternity Hospital, an Urban Primary Health Care Centre (Asia Development Bank funded Primary Health Care Centre)**
   a. Referral unit for 6-10 primary health care centres.
   b. Four doctors cover the centre.
   c. Infrastructural constraints in all wards visited - sinks only present in patient toilets.

Day 2  Monday 14th January 2008

1. **Welcome Ceremony, CMCH**
   a. Refer to annex 2 for list of attendees.
   b. Introduction and welcome by Assistant Director Hospital, CMCH.
   c. Presentation by Dr Frank Paulin, WHO Country Office, Bangladesh.
      i. Emphasized the tremendous work required at systems level necessary for sustainability and the challenges of implementation in a hospital with a bed occupancy rate of 184%.
   d. Department heads shared their experiences to date:

<table>
<thead>
<tr>
<th>Views on the pilot project</th>
<th>Impact of the pilot project</th>
<th>Concerns</th>
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<td>Support for the pilot project was universal among senior clinicians.</td>
<td>The positive actions already taking place as a direct result of the pilot project were emphasized, e.g. the establishment of an Infection Control Committee, and the decision to write an antibiotic policy. Anecdotal feedback describing the perception that infection control and numbers of infection &quot;seem&quot; to be improving since work began on the initiative, however, no robust data to support this.</td>
<td>Caseload should be taken into account when reviewing infection rates eg concerns &quot;dirty&quot; surgery. Concern expressed that surgical and medical wards pose different risks for cross-infection and therefore strategies should be different in these different settings. Drug resistance and lack of laboratory facilities mitigates against providing a comprehensive picture of rates of resistance.</td>
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Long-term vision

The deputy chair of the meeting explained that the aim in CMCH is to undertake the pilot and then based on the outcome, to spread the initiative to the whole hospital. Hand hygiene is being positioned as the first step to reduce all infections. Personal experience shared from the UK "where hand hygiene is now as important for doctors as consent."

Prevalence study

Professor and Head of Microbiology presented a proposal to undertake a prevalence study. A concept paper will be shared with WHO Project Manager and Geneva project team. Feedback will be provided to CMCH Coordinator and FP. Previous prevalence studies of SSI have been undertaken in Bangladesh, but not published. The proposed benefits of the study relate to its knock-on effect in terms of increasing knowledge base of staff relating to types of HAI and causative organisms. The data will inform priority areas for intervention and facilitate action planning.

Microbiology laboratory facilities

A major constraint to undertaking the prevalence study is the absence of an on-site microbiology laboratory. At present, clinical specimens are sent to the CMC laboratory, which has limited operating hours, mitigating against timely feedback.

e. Presentation by Julie Storr:

2. Pilot site ward visits:
   a. Background:
      i. Five wards are pilot testing the implementation of the WHO Hand Hygiene Improvement Strategy. This represents 450 beds.
      ii. Bed occupancy exceeding capacity is a feature of 3 out of the 5 pilot wards (e.g. there are 64 beds on the surgical ward but never less than 140 patients).
      iii. CMCH is unique in the commitment of its Director to "clean-up" the hospital environment. All patients are charged a small sum of money which is used to employ teams of cleaners to clean the entire hospital. The wards and corridors are extremely clean.
   b. Observations relating to the ward visits are summarized in the table below:

<table>
<thead>
<tr>
<th>Bed occupancy</th>
<th>Infrastructure</th>
<th>Alcohol-based handrub</th>
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<tbody>
<tr>
<td>Overcrowding is present in most wards. Ward 24 (previously a &quot;model ward&quot; under the Hospital Improvement Initiative&quot;) does not have patients on the floor but there are still more beds than the ward can comfortably contain. On the approach to some wards there are approximately 10 patients at the entrance on mattresses on the floor. In neonatal wards there is more than one neonate per crib.</td>
<td>Two sinks have been installed on the surgical ward. Sinks have been installed across all pilot wards (minimum 2 per ward), but no bar soap and no paper towels (no towels of any description). Soap is purchased annually (in large blocks, cut into small pieces to mitigate against theft). Theft of soap will impact on soap usage data. Demand outstrips supply. Soap replenishment is the responsibility of the nurse in charge of the ward.</td>
<td>Alcohol dispensers intermittently positioned on the walls of the surgical ward. Alcohol-based handrub is in the process of being distributed. However to date, the ABHR has been distributed in glass bottles (100ml). Staff feedback on the ABHR (ITU) was positive, staff explained that they &quot;like the handrub&quot;.</td>
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<tr>
<th>Operating Theatres</th>
<th>Patient Information</th>
<th>Reminders in the workplace</th>
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<tbody>
<tr>
<td>Reprocessing of surgical instruments: surgical instruments are in short supply (e.g. 3 sets for 10 patients). The first case of the day will be operated on using sets which have</td>
<td>Patients and relatives are not provided with information on HAI or hand hygiene. In many cases, relatives provide routine physical care to their patient.</td>
<td>How to rub/wash and Five Moments posters are displayed throughout the wards at regular intervals. The &quot;orange&quot; Five Moments graphic posters are not yet printed.</td>
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</tbody>
</table>
undergone autoclaving. Subsequent cases will use sets which have been boiled.
Scrub room for obstetrics: no soap at sink.

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**Quote**

"The project has already changed a lot of things in my ward. If one patient stays for 1 extra day the cost is 700-900 Tk. Just imagine how much the government can save if infection is reduced. They can save more money and we can treat more patients".

(Professor and member of Infection Control Committee, CMCH)

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**Day 3      Tuesday 15th January 2008**

1. Debrief and project planning meeting:
   a. The following matters were addressed:
      b. Each component of the multimodal strategy was reviewed and actions identified to address concerns.
         a. Soap:
            i. Measurement of the use and distribution of soap is under way, but is constrained by the current procurement and distribution mechanisms.
         b. Paper towels:
            i. Paper napkins are currently purchased by the hospital and are the only materials currently available for hand drying. However, there is no provision for dispensers.
         c. Alcohol-based handrub:
            i. Alcohol-based handrub installation has commenced in two of the pilot units.
            ii. CMCH Pilot Coordinators are planning a 2-3 day walk-round of each pilot ward to determine best logistical placement options.
            iii. Each staff member on the pilot wards will be provided with their own 100ml bottle.
            iv. Costs of dispensers currently stand at 300 Tk per dispenser, and 8 Tk for fixing to walls.
      d. Agreed actions to address constraints were logged in the project planning documents.

2. Training and education:
   a. Nurses:
      i. Nurse education is complete and fortnightly refresher training is planned.
   b. Doctors:
      i. Training of medical staff will commence 21.1.08 and completed before the end of January.

3. Observation and other evaluation:
   a. Baseline data is almost complete,
   b. Observations:
      i. In view of the absence of clinical handwash basins and alcohol-based handrub in the pilot wards, baseline observational compliance monitoring is commencing in parallel with the launch of step 3.
      ii. Observations will be carried out by the two pilot project coordinators and twelve trained observers.
   c. Tolerability surveys:
i. After careful consideration, the WHO form for tolerability will not be used (staff are already being subject to an unusually high number of written surveys).

ii. The pilot project coordinators will discuss staff tolerability of the alcohol-based handrub during the fortnightly meetings with each of the pilot wards, staff being asked questions on their perception of the handrub as listed in the existing tolerability survey.

iii. Staff experiencing problems perceived to be related to the alcohol-based handrub will be seen by a dermatologist.

d. Surveillance:
   i. A proposal for a prevalence survey has been presented to the HQ-based project manager (JS).

4. Reminders:
   a. How to rub/wash posters:
      i. 100 posters are available for use on the pilot wards and are to be positioned throughout the pilot wards.
      ii. Large versions of the posters will be displayed at the entrance to the wards.
   b. Five Moments posters:
      i. 100 copies of version 2 of the Five Moments poster are being displayed throughout the pilot wards.

5. Safety culture:
   a. Active and visible support for the improvement initiative is evidenced from the director of the hospital. The director is committed to improving the general cleanliness and hygiene, starting with hand hygiene throughout the entire hospital.
   b. Senior manager support including professors/heads of department and senior nurses is evidenced by their attendance at the newly established Infection Control Committee and actions being taken on each pilot ward.

6. An action plan addressing all matters raised was agreed by the project team.

7. A timeline for the remainder of the project is presented in annex 3.

8. Visit to other units in CMCH/additional, related discussions:
   a. Operating Theatres:
   b. Food preparation area:
   c. Central sterilizing unit:
   d. Renovations/new build:
      i. The project coordinators revealed plans for a new burns, urology and other units, currently in the early stages of construction.
      ii. A new six storey addition to the hospital is scheduled to occur during the next 10 years.

9. Wider impact of the strategy:
   a. The impact of the hand hygiene improvement strategy to date has spread beyond hand hygiene. This is a common phenomenon, with hand hygiene improvement acting as a gateway in to broader infection control. This has resulted in the following:
      i. Surveillance:
         1. The proposed prevalence study.
         2. The creation of a prospective register of HAI at ward level.
      ii. Operating theatres (OT):
         1. A preliminary review of OTs reveals severe infrastructural constraints to compliance with basic infection control practices.
2. Consideration will be given to how this can be actioned in the short term using a low cost approach.

Day 4  Wednesday 16th January 2008

1. Meeting with Brigadier General Md Abedum Rahman, Director Hospital:
   a. Commitment to the initiative:
      i. The Director reaffirmed commitment to the pilot project and the promotion of optimal infection control and patient safety practices.
   b. General feedback on the visit (JS and FP):
      i. Positive feedback was provided in terms of progress against project objectives and thanks expressed for the Directors support.
      ii. Issues identified during the review meeting were brought to the attention of the director.
      iii. Re renovation/new build:
         a. The opportunity of ensuring sinks are at the heart of the new wards was discussed.
         b. The director raised the issue with the engineers and architects - sinks would be included in each of the new wards.
   iv. Microbiology laboratory facilities:
      a. Director agrees that an on-site laboratory is required but that the lack of appropriate technical human resource mitigates against this at the present time. This is a wider problem across the country.

Day 5  Thursday 17th January 2008

1. De-brief meetings were held with:
   a. Dr Akhter Hossain Bhuiyan, Director Hospital and Clinic, Director General of Health Service;
   b. Meeting with Honourable Adviser/Secretary and Joint Secretary Hospitals, Ministry of Health and Family Welfare;
   c. Meeting with Professor Dr Hosne Ara Tahmin, Additional Director General (Admin) representing the Director General and Dr Akhter Hossain Bhuiyan, Director Hospital and Clinic, Director General of Health Service:
      i. All expressed his strong support for the initiative and the possibility of creating a separate budget relating to scale-up at Chittagong.
      ii. Broader discussion re creating a separate budget for patient safety/hand hygiene/infection control for national scale-up, within next years annual operational plans (development budget).
      iii. Support to scale-up to the whole hospital, district hospitals and Upazilah complexes based on pilot results.
      iv. The honourable adviser expressed his commitment to continue to support the project and consider country-wide scale-up based on pilot results. However, he emphasized the importance of producing the lowest cost alcohol-based handrub.
      v. The honourable adviser also acknowledges the need to examine broader infection control issues across the country, emphasizing the importance of step-wise activity.
vi. The Assistant Director General expressed her support for the project on behalf of the Director General and supports all of the proposals presented during the days debriefing, in particular the need for scale-up to the national level based on pilot findings.

2. Review and feedback meeting with WR
   a. WR emphasized the importance of capturing the lessons learned from CMCH and in particular the need to modify the Guide to Implementation to a country specific manual for implementation across all levels of the system.
   b. WR suggests that the pilot coordinators at CMCH are ripe for development to ensure they can act as country-wide ambassadors and educators.
   c. A follow-up pilot site visit will be scheduled for June/July 2008.
   d. WR expressed commitment to strengthen infection control across the country, to ensure each hospital has a functioning infection control team.
   e. WR supports pursuing existing national societies (Bangladesh American Society of Infection Control; Bangladesh Society of Infection Control Practitioners).
   f. WR supports a national symposium.

Julie Storr
January 2008

Acknowledgements:

The Project Manager, First Global Patient Safety Challenge of the WHO World Alliance for Patient Safety wishes to extend acknowledgement and thanks to the following for their support of Brigadier General Md Abedum Rahman, Director CMCH; Dr Debasish Dutta, Pilot Project Coordinator CMCH; Mrs Roy, Pilot Project Coordinator CMCH and all members of the Infection Control Committee CMCH.

In addition support for the pilot project in the South East Asia Region is extended to Dr Frank Paulin, WHO Country Office, Bangladesh; Dr Sungkhobold Duangvadee, WHO Representative, WHO Country Office, Bangladesh and Dr Doris Mugrditchian Regional Patient Safety Focal Point WHO SEARO.
### Annex 1: Objectives of the Site Visit

<table>
<thead>
<tr>
<th>Date of site visit</th>
<th>Sunday 14&lt;sup&gt;th&lt;/sup&gt; January - Wednesday 17&lt;sup&gt;th&lt;/sup&gt; January 2008</th>
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<tbody>
<tr>
<td>Venue</td>
<td>Chittagong Medical College Hospital (CMCH), Chittagong, Bangladesh</td>
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<tr>
<td>Purpose of visit</td>
<td>To fulfil the requirements of the Guide to Implementation</td>
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<td>To meet key staff within the facility</td>
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<td>To address and help resolve any areas of concern</td>
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<td>To be available for formal presentations on infection control/First Global Patient Safety Challenge, to medical and other staff as deemed appropriate, within CMCH</td>
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<td>To undertake refresher training on observational compliance monitoring, working with observers</td>
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<td></td>
<td>To undertake practical observations of compliance monitoring, working with observers</td>
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<td></td>
<td>To undertake visits to departments involved in control of infection activity, in particular:</td>
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<td></td>
<td>- Operating theatres</td>
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<td>- Blood banks</td>
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<td></td>
<td>To participate in a review and forward planning meeting focusing on Steps 3-5 of the Guide to Implementation</td>
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<tr>
<td>Proposed agenda</td>
<td>The agenda will be confirmed following discussion with the WHO Country Office and Director Hospital, CMCH</td>
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<tr>
<td>Resources required</td>
<td>Lap top and data projector (for powerpoint presentations and to play training DVD)</td>
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<td></td>
<td>Training DVD</td>
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<td>Room for delivery of presentation</td>
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<tr>
<td>Ward Visits</td>
<td>If feasible, the conclusion of training of observers may involve visits to selected wards</td>
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<td>Observers could undertake some test-observations to check learning and identify areas requiring clarification</td>
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Annex 2: Day 2 Welcome Ceremony, CMCH, List of Attendees:

Assistant Director, CMCH
Professor and Head, Department of Surgery, CMCH
Professor and Head, Department of Microbiology, Chittagong Medical College
Professor and Head, Department of ENTD, CMC/H
Professor and Head, Department of Orthopedics, CMC/H
Professor and Head, Department of Obstetrics and Gynaecology, CMC/H
Professor and Head, Department of Anaesthesiology, CMC/H
Professor Omar Faruque Yousuf, Prof. Dept of Paediatrics, CMC/H
Dr Shahanara Chowdhury, Associate Prof. Dept of Obs and gynae, CMC/H
Executive engineer, PWD
Senior Store Officer, CMCH
Nursing Superintendnet, CMCH
Stweard, Diet Section, CMCH
Md. Helaluddin, Pharmacist, CMCH
Store-keeper, Linen Store and Laundry Plant, CMCH
In-charge, Central Sterilization Room, CMCH
Dr Mahat Abuddin Hassan, Assoc. Prof Dept. of Medicine, CMC/H
Dr Debasish Dutta, Patient Safety Coordinator, WHO acts as coordinator of the committee
Annex 3: Timeline for the remainder of the project:

<table>
<thead>
<tr>
<th>Activity</th>
<th>Step 2/3</th>
<th>Step 3</th>
<th>Step 4</th>
<th>Step 5</th>
<th>Slippage</th>
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<td></td>
<td>Jan</td>
<td>Feb</td>
<td>Mar</td>
<td>Apr</td>
<td>May</td>
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<td><strong>Step 2</strong></td>
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<tr>
<td>Baseline observation</td>
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<td><strong>Step 3</strong></td>
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<tr>
<td>Data input</td>
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<td>Physician training</td>
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<td>Product measurement</td>
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<td>Alcohol distribution</td>
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<td>Prevalence survey</td>
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<td>Infection register commences</td>
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<td>Ongoing training/fortnightly meetings</td>
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<td>Alcohol tolerability (face to face enquiry)</td>
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<td><strong>Step 4</strong></td>
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<td>HCW knowledge survey</td>
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<td>Senior manager perception survey</td>
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<td>Ward structure survey</td>
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<td>Facility situation analysis</td>
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<td>HCW perception survey</td>
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<td>Final observations</td>
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<td>Cost benefit analysis</td>
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<td>Ongoing measurement of soap/alcohol</td>
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<td>Data input</td>
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<td><strong>Step 5 (specific dates to be confirmed)</strong></td>
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<tr>
<td>Coordinator review of results with Julie and Frank</td>
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<td>Preparation of report</td>
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<td>Site visit by HQ and Country Office</td>
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<tr>
<td>Meeting to present report</td>
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<tr>
<td>Five year action plan</td>
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