Project Deliverable Report

Deliverable nr D3 – Report on Handovers in European settings

Work Package          2
Task                   Report on the barriers and facilitators to effective handovers in the social, linguistic and technological contexts in which they take place in different European settings.
Date of delivery       Contractual: 01-04-2010    Actual: 29-03-2010
Code name              Version: 1.0
Type of deliverable    Report
Security               Public
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The aim of WP2 activities was to identify barriers and facilitators to effective handovers in the primary care – hospital interface. This deliverable reports a prospective, qualitative study performed in The Netherlands, Spain, Poland, Italy and Sweden. Patients with chronic diseases, and discharged home from hospital, and their respective care providers were recruited. Interviews, process mapping, and artefacts were used. Phases and roles in handovers are dependent of the social contexts of the countries. Incomplete information e.g. lack of medication lists, were identified as barriers. Timeliness of information is critical in some countries, whereas shared IT-systems, personal contact between care providers, and special transfer nurses are facilitators. Communication, both between professionals, and between care providers and patients could be improved. Since this is qualitative research, and because each European country has its own distinct healthcare system, these empirical findings cannot be statistically generalized or taken as policy documents. Still, these findings are sufficiently evident to be helpful in tailoring future interventions to barriers in handovers and to improve continuity of care.

Handover, barriers, facilitators, primary care/hospital interface, social, linguistic, technological contexts, European settings
Table of Contents

CHAPTER 1. INTRODUCTION……………………………………………………………………………….. 5
  1.1 BACKGROUND……………………………………………………………………………………………… 5
  1.2 OBJECTIVES OF THIS DELIVERABLE…………………………………………………………………… 5
  1.3 CONCEPTS AND RESEARCH OBJECTIVES…………………………………………………………… 5
  1.4 HANOVERS AT THE PRIMARY CARE—HOSPITAL INTERFACE………………………………… 6
  1.5 THE HEALTHCARE SYSTEMS IN THE PARTICIPATING COUNTRIES………………………… 6

CHAPTER 2. METHODS…………………………………………………………………………………………… 8
  2.1 STUDY DESIGN……………………………………………………………………………………………….. 8
  2.2 STUDY POPULATION………………………………………………………………………………………… 8
    2.2.1 GENERIC INCLUSION AND EXCLUSION CRITERIA……………………………………………… 8
    2.2.2 COUNTRY SPECIFIC INCLUSION CRITERIA………………………………………………………… 8
  2.3 SETTING…………………………………………………………………………………………………………. 9
    2.3.1 THE NETHERLANDS……………………………………………………………………………………… 10
    2.3.2 SPAIN………………………………………………………………………………………………………… 10
    2.3.3 POLAND……………………………………………………………………………………………………… 10
    2.3.4 ITALY………………………………………………………………………………………………………… 11
    2.3.5 SWEDEN…………………………………………………………………………………………………….. 11
  2.4 DATA COLLECTION AND ANALYSES……………………………………………………………………… 11
    2.4.1 INDIVIDUAL INTERVIEWS……………………………………………………………………………….. 11
    2.4.2 FOCUS GROUPS……………………………………………………………………………………………… 12
    2.4.3 PROCESS MAPS……………………………………………………………………………………………… 12
    2.4.4 ARTEFACTS/DOCUMENTS…………………………………………………………………………………. 13
    2.4.5 COUNTRY-SPECIFIC PROCEDURES………………………………………………………………… 13
  2.5 ETHICAL CONSIDERATIONS………………………………………………………………………………… 14
  2.6 INTERNAL QUALITY ASSURANCE…………………………………………………………………………… 14

CHAPTER 3. MATERIALS…………………………………………………………………………………………. 15
  3.1 PARTICIPANTS IN INDIVIDUAL INTERVIEWS…………………………………………………………… 15
    3.1.1 PATIENTS INTERVIEWED…………………………………………………………………………………. 15
    3.1.2 INTERVIEWED CARE PROVIDERS…………………………………………………………………… 16
    3.1.3 SAMPLE OF INTERVIEWED STAKEHOLDERS……………………………………………………… 17
  3.2 FOCUS GROUP PARTICIPANTS………………………………………………………………………………… 17
  3.3 PROCESS MAPS AND ARTEFACTS/DOCUMENTS………………………………………………………… 18

CHAPTER 4. RESULTS……………………………………………………………………………………………… 19
  4.1 DESCRIPTION OF CURRENT HANOVER PRACTICES…………………………………………………… 19
    4.1.1 HANOVER TO THE HOSPITAL (REFERRAL)…………………………………………………………… 19
    4.1.2 HANOVER FROM THE HOSPITAL TO PRIMARY CARE (DISCHARGE)………………………… 20
    4.1.3 WHAT CONTENT IS REGARDED AS NECESSARY AT REFERRALS?…………………………….. 20
    4.1.4 WHAT CONTENT IS REGARDED AS NECESSARY AT DISCHARGE?……………………………… 20
    4.1.5 WHAT TOOLS ARE USED IN THE HANOVER PROCESS?……………………………………………… 21
  4.2 IDENTIFICATION OF BARRIERS AND FACILITATORS TO EFFECTIVE HANOVER……………………22
    4.2.1 CRITICAL ISSUES IN HANOVER PROCESSES AND CONTENTS………………………………………. 22
    4.2.2 FACILITATORS TO CLEAR AND TIMELY INFORMATION……………………………………………… 23
    4.2.3 CRITICAL ISSUES IN ATTITUDES………………………………………………………………………… 24
    4.2.4 PATIENT-CENTEREDNESS AND PATIENT AWARENESS……………………………………………… 25
    4.2.5 CRITICAL ISSUES IN THE ENVIRONMENT AND THE HEALTHCARE SYSTEM…………………… 26
  4.3 SUMMARY OF ANALYSES OF INTERVIEWS, PROCESS MAPS AND ARTEFACTS……………………… 27
CHAPTER 5. CONCLUDING REMARKS AND FUTURE WORK………………………………… 29

REFERENCES………………………………………………………………………………… 31

APPENDIX A. THE HEALTHCARE SYSTEMS IN THE FIVE COUNTRIES...................... 33

APPENDIX B. INTERVIEW GUIDES (SWEDEN)…………………………………………… 36

APPENDIX C. COUNTRY-SPECIFIC PROCEDURES FOR DATA COLLECTION…………… 39

APPENDIX D: PROCESS MAP (SWEDEN)………………………………………………… 46

APPENDIX E: ARTEFACT ANALYSIS AND TRIANGULATION (SWEDEN)……………….. 48

APPENDIX F: INTERNAL QUALITY ASSURANCE REPORT……………………………… 50
CHAPTER 1. Introduction

1.1 Background
Continuity of clinical care (with multiple provider involvement), either at a patient’s referral to a hospital by a primary care specialist or at a patient’s discharge from the hospital (further jointly referred to as ‘handovers’), is a critical aspect of high quality patient care. Incomplete information given to a secondary/tertiary care unit or upon discharge from hospital can lead to adverse events for patients. This may ultimately lead to either life threatening situations during treatment, surgery or avoidable treatment and/or unplanned re-hospitalizations after the patient’s discharge. Care transitions are especially important for vulnerable groups, e.g., the elderly and the very young, and patients with multiple co-morbidities [1].

Identifying and comparing the barriers and facilitators of effective handovers in the varied European settings we are studying may reveal basic elements that can be of great value in addressing individual, institutional and/or regional requirements for effective communication. The diversity and complexity of healthcare in the European countries being studied is noteworthy.

1.2 Objectives of this deliverable
The aim of the D3 deliverable is to report the results of the work performed by Work Package 2 (WP2) within the EU FP-7 HANDOVER project. We describe the identified barriers and facilitators of effective handovers at the primary care—hospital interface in the social, linguistic and technological contexts in which they take place in five European settings. Data were collected from patient care settings in five countries including: The Netherlands, Spain, Poland, Italy, and Sweden.

1.3 Concepts and research objectives
“The primary objective of a ‘patient handover’ is to provide accurate information about patients’ care, treatment and services, current condition and any recent or anticipated changes in their physical and emotional status” [2]. Interest in handovers has grown steadily over the past decade as researchers, hospital administrators, educators, and policy makers have learned that variations in communication during patient handovers cause a significant number of errors and “near misses” to occur, leading to adverse outcomes and suboptimal care. Inadequate handover at transitions of care settings from one care provider/team to another provider/team can have detrimental effects on the quality and safety of patient care. During the past several years, due to increased complexity of patient care, provider work hour reform, transitions in care have become more frequent, resulting in increased opportunities for errors that result in patient harm [3].

Handovers can also be defined as transitions between different clinical microsystems. A microsystem, centred around patient care, is an organizing design construct in which social systems cut across traditional discipline boundaries [4, 5]. The clinical purpose and its setting define the essential components of the microsystem, which include clinicians, patients, and support staff; information and technology; and specific care processes and behaviours that are
required to provide care. Microsystems usually coexist with multiple other Microsystems within the organisation [6].

Although current literature suggests many opportunities to improve communication at transition points between ambulatory and inpatient care settings, little practical knowledge to date has delineated a strategy for improving, standardizing and sustaining communication during these transitions [7].

1.4 Handovers at the primary care – hospital interface

The primary focus of the HANDOVER project are patient handovers occurring between the primary care – hospital interface as depicted in Figure 1.

Figure 1. Focus of HANDOVER

1.5 The healthcare systems in the participating countries

Each European country has its own distinct healthcare system with its unique specific dimensions and constraints, although with many similar and overlapping drivers and barriers [8, 9]. The five countries in the present study all have a universal healthcare system, in theory providing equal possibilities for healthcare access to all of their country’s inhabitants. In the Netherlands and Spain, there is a longer tradition of integrating foreign populations into the healthcare system. Italy is, with increasing immigration, being challenged recently with this integration process into the healthcare network. The integration process needs to be handled from both a social, cultural and linguistic point of view.

The patient’s co-payment varies in the different countries from basically zero (Italy and Spain) to as much as € 35 for an Emergency Department visit in Sweden. In Sweden, however, there is a fairly low yearly cap on the overall co-payment both for drug prescriptions and healthcare utilization.
The latest OECD report indicates that the percentages of Gross Domestic Product (GDP) expenditures on healthcare vary between 6.4% (Poland) to 9.8% (the Netherlands). Sweden has the lowest number of acute care beds (2.1 beds/per 1000 population), whereas Poland has the highest number (4.6 beds/per 1000) [10]. The number of practising nurses and physicians vary considerably across these countries. As for physician consultations, there is a threefold difference between Sweden at the lower end and Spain at the higher end. Women have higher life expectancy than men in all five countries (see Table I).

Table I. European Union Healthcare System Comparisons per 1000 Population

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>The Netherlands</td>
<td>9.8</td>
<td>3.0</td>
<td>3.9</td>
<td>8.69</td>
<td>5.5</td>
<td>81.9</td>
</tr>
<tr>
<td>Spain</td>
<td>8.5</td>
<td>2.5*</td>
<td>3.7</td>
<td>7.5</td>
<td>8.1</td>
<td>84.4</td>
</tr>
<tr>
<td>Poland</td>
<td>6.4</td>
<td>4.6</td>
<td>2.8</td>
<td>5.2</td>
<td>6.6</td>
<td>79.6</td>
</tr>
<tr>
<td>Italy</td>
<td>8.7</td>
<td>3.1</td>
<td>3.7</td>
<td>7.0</td>
<td>7.0**</td>
<td>84.0</td>
</tr>
<tr>
<td>Sweden</td>
<td>9.1</td>
<td>2.1</td>
<td>3.6*</td>
<td>10.6*</td>
<td>2.8</td>
<td>82.9</td>
</tr>
</tbody>
</table>

*In 2006; **In 2005

For more details on the respective healthcare systems, see the country descriptions in Appendix A.
CHAPTER 2. Methods

2.1 Study design

We conducted a prospective, qualitative study of patient handovers in five countries. The Swedish team within WP2 was responsible for the detailed planning and co-ordination, as well as for the monitoring of the data collection, and analyses of the data collection and preparing the final D3-report. Quality assurance was conducted by Dr. Julie Johnson (see below). For external input on the work performance, the Swedish team created a reference group, containing representation of patients, and professionals representing hospital care, primary care, and nursing research.

The participating countries studied handover at the primary care — hospital interface focusing specifically on patients in specific settings in each country as follows: general medical care in The Netherlands, minority groups in Spain, geriatrics in Poland, and in emergency department care in Italy and Sweden. The clinical foci represented a convenience sample of specific interest areas of the participating countries.

2.2 Study population

The study subjects included patients, and the recruited patients’ respective professional care providers (physicians, nurses) at the hospital and in primary care, designated as key stakeholders. The uniform criteria for the selection of the study population and data collection were as follows.

2.2.1 Generic inclusion and exclusion criteria

Inclusion criteria: Patients 18 years old+, with any of the following diagnoses: diabetes mellitus, asthma, COPD, chronic heart failure, and/or patients prescribed 6+ drugs, were recruited consecutively at the point of their hospital discharge. A further criterion was that patients should be discharged to the community (i.e. home or nursing home), hence under the responsibility of primary/ community care. Hospital care team members were selected from those general medical and surgical wards where the recruited patients were hospitalized. Primary care team members represented the communities to which the patients were discharged.

Exclusion criteria: ‘cross border handover’ of patient, for example patients referred to other care units within the hospital (or to another country) prior to their discharge home.

2.2.2 Country specific inclusion criteria

In addition to the general inclusion criteria, each country, depending on its clinical focus, applied additional criteria (see Table II).

Table II. Country-specific inclusion criteria
### Patient-related inclusion criteria

- **The Netherlands**
  - Patient admitted to internal medicine, pulmonary diseases, cardiology or (vascular) surgical wards
  - Sampling of patients in order to get representation regarding age, gender, diagnosis, hospital setting and wards

- **Spain**
  - Patients belonging to cultural minority groups
  - Limited health literacy (capacity to read, write, and understand healthcare information)

- **Poland**
  - ≥ 60 of age
  - Sampling of patients in order to get representation regarding age, gender and diagnosis

- **Italy**
  - Patients admitted to emergency room
  - Sampling of patients in order to get representation regarding age, gender and diagnosis

- **Sweden**
  - Patients admitted to emergency ward from emergency room
  - If living at a nursing home, only within a geographically specified area
  - Sampling of patients in order to get representation regarding age, gender and diagnosis

### Health Professionals-related inclusion criteria

- **The Netherlands**
  - Primary care physicians (no community nurses)
  - Sampling in order to get representation of seniors and juniors, and equal numbers of nurses versus physicians (when possible)

- **Spain**
  - Nurse coordinator
  - Cultural mediators

- **Poland**
  - --

- **Italy**
  - Nurses and physicians from emergency rooms and emergency wards
  - Sampling in order to get representation of seniors and juniors, equal numbers of nurses versus physicians

- **Sweden**
  - Nurses and physicians from emergency room and emergency ward
  - Sampling in order to get representation of seniors and juniors, equal numbers of nurses versus physicians

### 2.3 Setting

The study was performed in 9 hospitals and their respective primary/community care areas. Both university hospitals, middle-sized hospitals and hospitals in rural areas were included (Table III).

#### Table III. Clinical foci and setting per country

<table>
<thead>
<tr>
<th>Country</th>
<th>Clinical focus</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Netherlands</td>
<td>General medical care</td>
<td>The University Medical Center Utrecht (UMCU)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The Diakonessenhuis</td>
</tr>
<tr>
<td>Spain</td>
<td>Minority groups</td>
<td>Germans Trias i Pujol Hospital</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hospital de la Esperança</td>
</tr>
<tr>
<td>Poland</td>
<td>Geriatrics</td>
<td>The Good Brothers’ Hospital</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The Specialist Hospital of Stefan Zeromski</td>
</tr>
<tr>
<td>Italy</td>
<td>Emergency department</td>
<td>Nuovo San Giovanni di Dio</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nuovo Ospedale del Mugello</td>
</tr>
<tr>
<td>Sweden</td>
<td>Emergency department</td>
<td>The Karolinska University Hospital, Huddinge</td>
</tr>
</tbody>
</table>
Below follow short descriptions of the hospital(s), the organization of community care and technical information tools in the settings where the data collection occurred.

2.3.1 The Netherlands

a) **The University Medical Center Utrecht (UMCU)** is the main hospital of Utrecht, the fourth largest city in the Netherlands. The UMCU resulted from a merger of the University Hospital, the Wilhelmina Children’s Hospital and the Medical Faculty of Utrecht University. The UMCU center provides top clinical services besides basic hospital services, and is a last resort for referrals from other hospitals in the country. UMC Utrecht employs a total of 9,238 people, has 1,042 patient beds, 350,000 outpatient visits and 26,244 admissions a year.

b) **The Diakonessenhuis** is a community hospital located in Utrecht, with two other departments in Zeist and Doorn (cities close to Utrecht). This hospital has a total of 559 beds and more than 2,700 employees and primarily focuses on basic hospital services for the people in Utrecht-city and suburban areas. It has approximately 240,000 outpatient visits and 25,000 admissions a year. Primary care is provided by 640 GPs in the Utrecht region. Primary care practitioners act as gatekeepers for the hospital care (only 5% of patients enter the hospital without a referral). Both hospitals are in the first phase of establishing a shared electronic medical record system.

2.3.2 Spain

a) **Germans Trias i Pujol Hospital** (within the Nord Metropolitan Regional Management) is a reference and high technology center, and comprises 15 primary care teams. The hospital in 2008 had a total of 27,591 discharges, 108,356 emergency attendances, 387,764 outpatient attendances, 12,660 surgical interventions and 38,784 hospital day visits.

b) **Hospital de la Esperança** (within the Municipal Institute of Health Assistance) offers an integrated health service. In 2007 there were a total of 30,711 discharges, 159,068 emergency attendances, 387,764 outpatient attendances, 12,660 surgical interventions and 38,784 hospital day visits.

2.3.3 Poland

Patients were recruited from two hospitals in Krakow county (population of approximately one million, 16 hospitals and 6 hospital emergency departments).

a) **The Good Brothers’ Hospital**, with 127 beds, around 6,000 inpatients, non-profit, run and owned by the Order of Good Brothers. This is the oldest hospital in Krakow from the 17th century.
b) The Specialist Hospital of Stefan Zeromski. The hospital has 17 clinical departments, 656 beds, 30,000 inpatients annually, and over 60,000 outpatient ambulatory consultations. The hospital serves over 200 primary care practices, both group and individuals. Patients are encouraged to consult a GP or the GP contracted services out of the regular working hours but most often choose to go to the ED directly. Long term care is not well developed and not popular, thus the majority of patients are transferred to home settings. The hospitals use electronic medical record systems, but data and information are not shared with Primary Care level.

2.3.4 Italy

a) The Hospital “Nuovo San Giovanni di Dio” is located in the western area of the city of Florence. In the hospital there are 418 beds and 43,000 annual visits.

b) The Hospital “Nuovo Ospedale del Mugello” is located in the rural area of Mugello, in the north-east of Florence. In the hospital there are 110 beds. The Emergency Department was renovated 5 years ago and it registers an average access rate of 45 patients a day. Both hospitals are part of the Health Care Unit of Florence. 710 GPs, 104 paediatricians, 213 primary care centres provide care in this district. The hospitals are connected through a networked electronic medical record system accessible to the other 4 hospitals and managed by the local healthcare agency. Both hospitals are directly managed by the local healthcare agency of Florence.

2.3.5 Sweden

The Karolinska University Hospital, Huddinge, is one of seven public hospitals in Greater Stockholm. The hospital provides highly specialized, as well as basic care. There are 700 beds and 700,000 annual visits. The emergency department (ED) counts 80,000 visits a year. 60% of patients are discharged home from the ED’s acute general medicine/surgical ward, after an average stay of 48 hours. Although patients are encouraged to consult their local healthcare centre first, they are free to visit an ED. Primary care in the area is provided by 20-25 healthcare centres with general practitioners, nurses, etc. All medical services at hospitals and in the primary care are contracted by the Stockholm county council. An exception is nurses in nursing homes; the nurses are employed by the municipality. Electronic medical record systems are in use in the hospital and in primary care but to date only some of them are shared.

2.4 Data collection and analyses

Project members in the participating countries collected data locally from key stakeholders, as well as from routine care documentation. The data collection tools and the analyses of the generated data are described below.

2.4.1 Individual interviews

We conducted audio-taped interviews using a semi-structured guide with purposively sampled patients and their respective care providers [11]. The interview guide was prepared based on
generic scripts and translated into the respective language and, as necessary, customized for local conditions (for example see Appendix B:1-2). The interview guide allowed for questions and prompts by the interviewers. Questions covered general handover communications, as well as perceptions of identified patients’ transitions that the stakeholders had recently experienced. The interviews were transcribed in the native languages according to a standardized agreed upon format. Data were then structured and coding performed locally in each country using the software Atlas.ti [12]. Initially, two researchers in each country began the analysis by condensing data and suggesting codes closely related to the text fragments [13].

Two interviews from each country were translated into English in order to inductively create a shared codebook. This work was led by two senior researchers (Dr Julie Johnson & Professor Myrra Vernooij-Dassen). A consolidated code book was thus developed in parallel with the first coding performed in each country. Consensus between all researchers was established after one face-to-face meeting, three conference calls, and several e-mail contacts, yielding a consolidated code book of 84 codes with 9 categories. The categories were agreed upon during this consultation process.

All local data were then analyzed through iterative procedures between the two researchers in each country. For the present Deliverable, a comparative analysis was performed of a sample of locally analyzed interviews.

2.4.2 Focus groups

Focus group interviews [14] were conducted with each type of stakeholder (i.e., patients, patients’ representatives, hospital physicians, hospital nurses, general practitioners and community nurses), using a semi-structured guide (see Appendix B:3-4). Each focus group included 6 to 8 patients or patient representatives, or persons of the same profession. The interviews were audio-taped and transcribed in the native languages according to a standardized format. The consolidated code book, derived from individual interviews, will be used for the analyses of the focus group interviews at a later stage and the results will be reported in Deliverable D5.

2.4.3 Process maps

Process maps were created to identify the steps of the general handover process between hospital and primary care [4, 5, 15]. Process mapping or flow-charting is a practical tool to create a picture of the sequence of steps in the current process—not the desired process—so that opportunities for improvement can be identified. Mapping was performed by one or two multi-professional group(s) in each country. The sessions were led by a trained coordinator and a co-worker. “Post-it” notes were used for the mapping exercise.

During the group meeting, the moderator outlined an initial draft of the process map of the general handover process between the hospital and primary care based on the participants’ input. The participants gave further feedback on details, barriers, inefficiencies and possible solutions. After the revisions, the final maps were again discussed and further analyzed at a collaborative meeting.
2.4.4 Artefacts/documents

Patient specific data and available handover material, such as referral notes, to-do-lists or notes about communication between the patient’s care providers were continuously collected throughout the study. These artefacts were used to triangulate the data with data from the individual interviews and the process maps. The clinical artefacts were analyzed and triangulated with data from individual interviews to better understand the complexities of the inpatient – ambulatory transition. A comprehensive artefact analysis was performed on one individual patient selected in each country from the interviewed patients. An assessment was made of different tools used in communication and treatment, and their effects on the communication processes between the hospital and primary care settings [16-17].

2.4.5 Country-specific procedures

The specific details of the data collecting procedures at each study site, such as interviewers’ competence, methods of approaching subjects, place for interview etc, are described by each country in Appendix C.
2.5 Ethical considerations

The interviews and focus groups concerned potentially sensitive health and socioeconomic issues for patients. Patients were asked to participate in this research project by providing personal data, and by letting their care providers be interviewed about their care, were completely free to decide for themselves whether or not they consented. The consent of a proxy, indicated on the chart as next of kin, or other designated proxy, was sought where a patient was unable to participate personally due to his/her illness. The recruitment process began with patient information and the prepared script for written consent. The script emphasized that a patient’s participation was entirely voluntary, that participation would have no direct effect on patient care, and that the patient may withdraw at any time. The number of people that conducted the interviews and coding was limited, and raw data was only available to one project manager and one co-investigator due to the sensitive nature of the interviews. Ethical and legal approval was fulfilled in all countries.

2.6 Internal quality assurance

Quality assurance can be defined as the systematic and independent examination of all project methods and documentation. Maintaining accuracy and quality throughout the HANDOVER study is a continual, dynamic process. Although we were clear about the methods and protocols at the outset of the project some minor changes in the research process occurred as the study evolved.

An audit determines whether the methods were appropriately implemented and the data were generated, recorded, analyzed, and accurately reported according to the study protocol. A quality assurance plan ensures that we carefully document the methods and protocols and provide consistent methods across participating sites.

Dr Julie Johnson, senior qualitative expert and responsible for the internal quality assurance process, created a reporting tool for this purpose. The tool was adapted from the BMJ criteria [18], and from Tong et al [19], and vetted with the HANDOVER team during the 2009 meeting in Barcelona. The reporting tool was completed following data collection and analysis.

The benefits of our internal quality assurance plan are that it:

- Ensures compliance with agreed methods and protocols;
- Identifies systematic problems early on in data collection process;
- Ensures data continuity throughout the course of the study: that the data collected are the data required by the protocol; and,
- Ensures the accuracy and consistency of the data.

For the completed quality assurance tool see the attached “HANDOVER Quality Assurance Report” in Appendix F.
CHAPTER 3. Materials

3.1 Participants in individual interviews

A total of 314 interviews were conducted with the key stakeholders in the participating countries. However, the numbers of complete sets of interviews, where all three stakeholder categories (the patient and their hospital care provider(s) and their primary care provider(s)) include: in The Netherlands: 15; Spain: 5; Poland: 13; Italy: 2; Sweden: 16. (A subset of these interviews included admitting as well as discharge hospital staff, but excluded primary care providers).

3.1.1 Patients interviewed

A total of 92 patients (45 females, 47 males) were individually interviewed in the five countries. Patients that were recruited for the study but could not be interviewed for various reasons (refused, were too sick or deceased) include: 16 from The Netherlands; 8 from Poland; 4 from Italy; and, 11 from in Sweden.

The median age of the interviewed patients was rather high in all countries, 65 to 75 years of age. Diabetes was the most common diagnosis in 35 patients of 92. It should be noted that patients could have multiple diagnoses. Only 10 patients (11%) were discharged from hospital to a nursing home (Table IV).

<table>
<thead>
<tr>
<th>Country</th>
<th>Patients</th>
<th>Age, median</th>
<th>Inclusion diagnosis</th>
<th>Median # drugs at discharge</th>
<th>Discharged to home/ nursingh.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Diabetes</td>
<td>COPD</td>
<td>Heart failure</td>
</tr>
<tr>
<td>The Netherlands, female</td>
<td>12</td>
<td>75</td>
<td>7</td>
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<td>1</td>
</tr>
<tr>
<td>The Netherlands, male</td>
<td>10</td>
<td>66</td>
<td>3</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Spain, female</td>
<td>7</td>
<td>69</td>
<td>1</td>
<td>2</td>
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</tr>
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<td>Spain, male</td>
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<tr>
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<td>Italy, male</td>
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<td>74</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Sweden, female</td>
<td>11</td>
<td>74</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Sweden, male</td>
<td>14</td>
<td>65</td>
<td>5</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>92</strong></td>
<td><strong>35</strong></td>
<td><strong>20</strong></td>
<td><strong>27</strong></td>
<td><strong>81</strong></td>
</tr>
</tbody>
</table>
3.1.2 Interviewed care providers

A total of 222 care providers were individually interviewed, comprising 150 hospital professionals and 72 primary care providers. The professional experience of the interviewees varied from half a year and up to 40 years of patient care experience (Table V).

<table>
<thead>
<tr>
<th>Country</th>
<th>All care providers</th>
<th>Hospital physicians</th>
<th>Hospital nurses</th>
<th>General Practitioners</th>
<th>Primary care nurses/ other</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Netherlands, female</td>
<td>31</td>
<td>5</td>
<td>20</td>
<td>6</td>
<td>-</td>
</tr>
<tr>
<td>The Netherlands, male</td>
<td>28</td>
<td>14</td>
<td>2</td>
<td>12</td>
<td>-</td>
</tr>
<tr>
<td>The Netherlands, years in profession</td>
<td>0-31</td>
<td>5 (0-16)</td>
<td>5 (1-25)</td>
<td>18 (4-31)</td>
<td>-</td>
</tr>
<tr>
<td>Spain, female</td>
<td>14</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>Spain, male</td>
<td>8</td>
<td>3</td>
<td>1</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Spain, years in profession</td>
<td>2-30</td>
<td>5 (3-11)</td>
<td>10 (2-20)</td>
<td>13 (4-30)</td>
<td>14 (4-29)</td>
</tr>
<tr>
<td>Poland, female</td>
<td>35</td>
<td>12</td>
<td>11</td>
<td>9</td>
<td>3</td>
</tr>
<tr>
<td>Poland, male</td>
<td>12</td>
<td>8</td>
<td>-</td>
<td>4</td>
<td>-</td>
</tr>
<tr>
<td>Poland, years in profession</td>
<td>2-37</td>
<td>12 (2-37)</td>
<td>17 (10-30)</td>
<td>15 (7-29)</td>
<td>20 (16-29)</td>
</tr>
<tr>
<td>Italy, female</td>
<td>9</td>
<td>4</td>
<td>5</td>
<td>4</td>
<td>-</td>
</tr>
<tr>
<td>Italy, male</td>
<td>9</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>Italy, years in profession</td>
<td>7-40</td>
<td>18 (10-30)</td>
<td>15 (8-15)</td>
<td>25 (16-40)</td>
<td></td>
</tr>
<tr>
<td>Sweden, female</td>
<td>42</td>
<td>11</td>
<td>17</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>Sweden, male</td>
<td>34</td>
<td>17</td>
<td>9</td>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td>Sweden, years in profession</td>
<td>0-34</td>
<td>8 (0-27)</td>
<td>3 (0-31)</td>
<td>23 (0-34)</td>
<td>20 (3-30)</td>
</tr>
<tr>
<td>No. of interviewed professionals</td>
<td>222</td>
<td>80</td>
<td>70</td>
<td>58</td>
<td>14</td>
</tr>
</tbody>
</table>

The interviews with the care providers were performed during varying time periods after the patient’s discharge from the hospital (see Table VI).

<table>
<thead>
<tr>
<th>Interview performed within number of days after discharge</th>
<th>Hospital physicians</th>
<th>Hospital nurses</th>
<th>General Practitioners</th>
<th>Primary care nurses/ other</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Netherlands</td>
<td>30 (7-95)</td>
<td>24 (7-82)</td>
<td>40 (13-98)</td>
<td>-</td>
</tr>
<tr>
<td>Spain</td>
<td>21 (14-28)</td>
<td>27 (20-31)</td>
<td>27 (17-34)</td>
<td>23 (17-30)</td>
</tr>
<tr>
<td>Poland</td>
<td>36 (2-46)</td>
<td>34 (15-38)</td>
<td>77 (52-109)</td>
<td>108 (93-109)</td>
</tr>
<tr>
<td>Italy</td>
<td>7 (5-28)</td>
<td>24 (5-25)</td>
<td>20 (12-62)</td>
<td>-</td>
</tr>
<tr>
<td>Sweden</td>
<td>7 (1-32)</td>
<td>8 (1-22)</td>
<td>59 (30-122)</td>
<td>55 (9-100)</td>
</tr>
<tr>
<td>Interview duration</td>
<td>Hospital</td>
<td>Hospital</td>
<td>General</td>
<td>Primary care</td>
</tr>
</tbody>
</table>

HANOVER – 2008 - 223409 
16
3.1.3 Sample of interviewed stakeholders

Of the totally 314 individual interviews conducted with patients and professionals in the five countries, a comparative analysis was performed of a sample of 145 interviews. This sample contained interviews with 36 patients, 35 hospital physicians, 34 hospital nurses, 31 general practitioners (GPs), and 9 community nurses (from Poland, Spain and Sweden). The interviews were fairly evenly distributed across the countries and across similar ages and gender. The results of the analysis of this sample are reported in Chapter 4.

3.2 Focus group participants

A total of 24 focus group sessions were completed, with altogether 142 participants (28 patients and 114 healthcare professionals, see Table VI).

Table VII. Focus group interviews with number of patients and care providers per category, gender and age (median (range))

<table>
<thead>
<tr>
<th>Country</th>
<th>Patients</th>
<th>Hospital physicians</th>
<th>Hospital nurses</th>
<th>General Practitioners</th>
<th>Primary care nurses/ other</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Netherlands, female</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>The Netherlands, male</td>
<td>4</td>
<td>4</td>
<td>-</td>
<td>2</td>
<td>-</td>
</tr>
<tr>
<td><strong>The Netherlands, years in profession</strong></td>
<td>5 (1-25)</td>
<td>7 (0-30)</td>
<td>15 (9-32)</td>
<td>23 (5-40)</td>
<td></td>
</tr>
<tr>
<td>Spain, female</td>
<td>1</td>
<td>8</td>
<td>6</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Spain, male</td>
<td>2</td>
<td>-</td>
<td>-</td>
<td>3</td>
<td>-</td>
</tr>
<tr>
<td><strong>Spain, years in profession</strong></td>
<td>8 (2-24)</td>
<td>24 (20-32)</td>
<td>20 (9-29)</td>
<td>20 (10-33)</td>
<td></td>
</tr>
<tr>
<td>Poland, female</td>
<td>8</td>
<td>1</td>
<td>7</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>Poland, male</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>-</td>
</tr>
<tr>
<td><strong>Poland, years in profession</strong></td>
<td>24 (10-38)</td>
<td>16 (10-33)</td>
<td>17 (15-29)</td>
<td>19 (13-30)</td>
<td></td>
</tr>
<tr>
<td>Italy, female</td>
<td>-</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>-</td>
</tr>
<tr>
<td>Italy, male</td>
<td>-</td>
<td>3</td>
<td>2</td>
<td>5</td>
<td>-</td>
</tr>
<tr>
<td><strong>Italy, years in profession</strong></td>
<td>18 (8-22)</td>
<td>8 (8-10)</td>
<td>21 (18-36)</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Sweden, female</td>
<td>3</td>
<td>3</td>
<td>6</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>Sweden, male</td>
<td>5</td>
<td>3</td>
<td>-</td>
<td>3</td>
<td>-</td>
</tr>
<tr>
<td><strong>Sweden, years in profession</strong></td>
<td>4 (1-8)</td>
<td>6 (1-20)</td>
<td>22 (0-37)</td>
<td>21 (8-34)</td>
<td></td>
</tr>
<tr>
<td><strong>Total numbers of participants</strong></td>
<td>28</td>
<td>30</td>
<td>27</td>
<td>31</td>
<td>26</td>
</tr>
</tbody>
</table>
3.3 Process maps and artefacts/documents

Each country provided one generic process map. The map included an overview of the major steps in the care process, with facilitators and barriers for handover noted for each step. The number of participants of the groups that produced process maps was between 8-10 professionals in all countries. An exception was made by Poland, where the focus groups were used to make 6 process maps (two maps from patient groups); and then the 6 maps were compiled by moderators, researchers and some participants into one generic process map.

One artefact analysis per country was performed for the present Deliverable. Artefacts from other patients were collected but have yet to be analysed.
CHAPTER 4. Results

Researchers in each country performed preliminary analysis of the interview sample using the categories agreed upon: handover processes, handover content, handover tools, attitudes, patient awareness and empowerment, complaints and organizational factors. These locally prepared results were analysed comprehensively, compared and are summarized in this chapter. In section 4.1 the current handovers practices are described, using the categories: handover processes, handover content, and handover tools as subheadings. In section 4.2 the identified barriers and facilitators are presented. The perspectives of each country and their respective stakeholders are described separately when appropriate. In section 4.3 the results of the interviews, the process maps and the artefact analyses are summarized.

4.1 Description of current handover practices

Two separate contexts for patient handovers were identified – one sometimes short and concentrated handover at referral, especially in acute admissions, and another more comprehensive handover process at discharge. In Poland, the handover process is the responsibility of the patient and his/her family - an “indirect” handover. Here, three phases are identified: a) a brief referral note brought by the patient from primary care to hospital; b) hospital – patient communication during hospitalization and at discharge; and, c) the patient schedules a visit and then brings the discharge chart to the general practitioner.

Community nurse, Poland: A patient has his free will, he/she either takes it (the referral or the discharge chart) somewhere or not. A patient is responsible for himself.

Spain and Italy considered the patient as a liaison and direct communication between care providers. In Sweden and the Netherlands stakeholders agreed upon the need to communicate directly between the two systems with timely, clear and complete information both at referral and at discharge.

4.1.1 Handover to the hospital (referral)

At the acute stage of the patient admission the communication between the primary care and the Emergency department is a crucial aspect. In Sweden, communication between the primary care and the ED at admission is not routine. Such contacts occur only when additional information about the patient is needed. In all countries the patient/family as well as ambulance staff is important stakeholders during such a handover. Spanish and Swedish GPs sometimes contact the hospital with acute referrals.

In cases of non-emergent handovers referral notes are always handed over by the patient upon admission in the Netherlands, Poland and Spain. In Poland, the mandatory referral note is used more as an entry card to hospital-level care than as an informative communication about the patient. In some cases “voluntary” communication is added to the referral note. In the Netherlands, general practitioners contact the hospital physician in charge in general.
4.1.2 Handover from the hospital to primary care (discharge)

In the Netherlands and in Sweden there are direct communications between clinical microsystems through discharge reports. Dutch discharge communication follows a fixed structure, and the letters are often checked before they are sent or handed over to the primary care providers. In Poland, Spain and Italy the medical discharge report constitutes the official and legally required proof of handover to another care provider. It is routinely handed over to the GP by the patient or a family member. In Spain, a transfer nurse also directly informs the primary care providers using a specific protocol (“Prealt”).

4.1.3 What content is regarded as necessary at referrals?

Hospital staff in all countries seems to agree upon the need for clear and concise referral information. Hospital physicians and nurses need different information to take over the patient’s care and what is regarded necessary also differs between elective and acute admissions. Italian hospital nurses do not see primary care referrals as a necessary source of information in acute admissions.

Interviewer, Italy: Are GP’s written referrals useful?
Hospital nurse: Absolutely not, zero. You do not need the medical referral when accessing the ER. Everything that arrives in the ED is urgent. Clearly we do classify such urgency.

Swedish hospital physicians prefer that GPs provide a clinical diagnosis and medical and social information about the patient when seen in the emergency department. In Italy, some GPs pay visits to their patients in the hospital ward.

Hospital physician, Italy: There are really a few GPs - three, four - who come here to the ward the day after the patient was admitted and they remain the same people.

4.1.4 What content is regarded as necessary at discharge?

All five countries use medical discharge reports covering patient history, diagnoses, and test results.

General practitioner, the Netherlands: Well, a readable and quick discharge letter with medication, policy, diagnosis and prognosis. That is the best way. It may be short, for instance six lines of text, but these six lines need to be clear and contain the essence of the patient’s condition!

In Poland a few hospitals have recently adopted a discharge letter. This novelty is appreciated by the GPs.

General practitioner, Poland: As regards the specialists, it’s much better now: since more than a year, the specialists have to write and provide a return info chart. So now we have the knowledge and recognition of things. Sometimes a
diagnosis is missing or there are no medications and the chart is not always complete but this is due to the shortage of time.

Nursing information in Poland and often in Italy is kept at the hospital and not forwarded to the primary care level. In the Netherlands, Spain and in Sweden nursing discharge reports are shared with community nurses and often followed up by telephone calls to the community nurses.

At patient discharge, communication with the patient is crucial – both nurses and physicians in all countries agree about this. Patients need proper information about the treatment, about changes of medication and whether a referral for follow-up is sent somewhere. In Spain, Poland, and Italy, patients routinely receive a medical discharge report, although in Sweden and the Netherlands this is only done upon request.

4.1.5 What tools are used in the handover process?

The means of communication used are mostly by written documentation. The notes are handwritten (Poland and sometimes in the Netherlands) or typed/printed. Oral communication is in all countries occasionally used by physicians for consultation or as an addition to referrals or discharge notes. Nurses (Spain, Italy and Sweden) and social workers (Spain) more often communicate with each other over phone, fax or e-mail than do physicians.

In Spain and in some Dutch hospitals dedicated transfer nurses act as coordinators for the handover. In the Spanish primary care setting case managers coordinate the patient care.

As pointed out earlier, patients/families are the only communication channel in Poland and the main tool in Spain and Italy. In Sweden and in the Netherlands the information is most often sent by mail or available through a shared information system. In the Netherlands this regards discharge information. In contradistinction to the Polish model, where the patient is supposed to schedule his/her visit, Swedish general practitioners prefer that the emergency wards do not trust patients to contact primary care for scheduling their visits, since this often is said to lead to miscommunication.

General practitioner, Sweden: And in these cases, the risk of error is huge and we have seen it several times; people who don’t understand that they need to contact us……../ And that’s a problem; first, here comes a patient we are not at all prepared to take over, perhaps we don’t have any available appointments.....He often just appears at our lab.

Electronic medical records are available in hospitals but not always in the primary care settings, but different systems are used and they are not fully integrated. In most of the Dutch and Swedish PC centres electronic medical records of the hospital(s) can be read, but only a few PC units have electronic records readable for the hospital physicians. Sweden also has a shared IT system for planning follow-up in primary and community care settings.

In the Netherlands, there is a nationally accepted standard for the referral form, but from the interviews it did not become clear if and how this is used. Some Dutch physicians and nurses use guidelines at admission and discharge. In Sweden, there is a national standard for
discharge planning of older and disabled patients. There are also regional guidelines about when to refer a patient to the hospital, but the Swedish hospital nurses and physicians do not know about any guidelines for the discharge processes.

In summary, the experiences of patient handovers differ between countries regarding phases, role of patients and use of tools. These differences can be related to the social and technological differences described in Chapters 1.5 and 2.3. However, what content the stakeholders prefer appears similar between countries.

4.2 Identification of barriers and facilitators to effective handover

Some of the stakeholders’ perceptions of the barriers and facilitators to effective patient handovers appear to be shared by all countries, while others are not.

4.2.1 Critical issues in handover processes and contents

Timeliness of communication is a critical issue in the three countries using direct communication between the clinical microsystems. Delayed information is a clear threat to patient safety. Delays were due to information processing where messages were recorded, either typed by a secretary or sent by mail or email but arrived late to the provider.

*General practitioner, Sweden:* Then, it had been noted that she had swollen legs, more than earlier and they had written a referral, no, not a referral.... more a discharge report as information for me. And this did not come to my office until after almost six weeks.(… ) And when I called her, she was very ill, had been hospitalized elsewhere and her husband was a bit upset. So I had to explain that “in fact, we did not have this information that his wife felt like she did until the day before I tried to reach her”.

A second critical issue identified in all the participating countries regards the completeness of information transferred. Completeness does not necessarily mean a whole lot of information. Too extensive information sent from primary care is even regarded as a barrier according to hospital physicians in the Netherlands and in Spain. However, lack of information, especially essential information about medication or about changes and rationale for changes of medication is a frequently mentioned barrier irrespective of the handover system. After-hour admissions and discharges put a specific restriction to the access of information about the patient and his/her care.

*Hospital physicians, Poland:* What I have generally missed are medications taken recently by the patient. This is the information I would like to get, as well as the information that a patient does not use, such as hypertension control medications from the specific group of such medicines and for what reason. Usually I am focused about the adverse drug reactions, and past events.

*General practitioner, the Netherlands:* Well, for instance, regarding the discharge letters, that we can’t figure out medication issues. Or, even worse, when medication has not been sent along with, that is really annoying. That people are discharged from the hospital, on Friday morning and subsequently call at half past
three in the afternoon and tell: ‘‘I didn’t receive anything, what am I supposed to use now?’’

The lack of patient information about medication issues is very important according to interviews in Poland and in Sweden. Patients want to be made aware and to feel they are part of the clinical process.

Patient, Sweden: About that cortisone, I have really been sent in and out (of hospital) and some have prescribed 5 tablets, and 4 tablets and another wanted to decrease the dose to 2.5 milligrams. No, that’s too low...
Wife: says the next one.
Patient: Yes, but we take one away, so you only need 5 mg.... That’s the way it’s been working now, back and forth, I really don’t know what to take.

Hospital staff also lacks critical social information, e.g. available carer resources at home (Spain) and nursing reports/checklists (Poland and Spain). In countries with “indirect” handovers the care providers identified certain circumstances where more information would be extremely important.

Community nurse, Poland: A hospital should inform us about patient discharge in case when a patient lives alone. These are elderly people, sometimes with dementia and forget about certain things. The doctor tells him things in the hospital but the patient has already forgotten half of that when he gets home. And doesn’t even know he should have a consultation.

Linguistic aspects, like differences in terminology or in language used, were found to be a major barrier due to ambiguity of information for care providers as well as for patients.

General practitioner, the Netherlands: In case it is written, it sometimes contains key terms that are unreadable(...) you just get a single paper enclosing a short note.

Patient, Spain: Yes (...) what can I say? The main thing was that I was not speaking in Spanish so I can't express many things, so it was trouble.

Although most stakeholders in countries that use direct communication agree that incompleteness of information is a barrier, and that it is uncommon or impractical to provide feedback to other providers. Care providers desire regular feedback so they can improve their handover practices.

General practitioner, the Netherlands: In fact, that is strange. We never hear, “you missed this and this in the letter”. (...) about the quality of my letters, I never hear anything about it. (...) that’s a pity. I could use some feedback on that.

4.2.2. Facilitators to clear and timely information

Three major facilitators of up-to-date and timely information were identified and are detailed below:

a) Technology – computerized medical records;
Technology: An information system fully integrated and shared between all the clinical microsystems is yet to be developed. Most physicians in Sweden, Italy and the Netherlands and nurses in Sweden, Spain and the Netherlands definitely regard such a shared information system a facilitator of more effective and safe patient handovers. However, some care providers are not in favour of a fully shared information system due to concerns about patient privacy.

Hospital nurse, Spain: As I tell you, the suitable thing would be to have a system that was unique. And I know it, because there are primary care centres that use "x system" that if it was the same as the one we would use I would read the evolution and the cause of before being admitted to the hospital, of the general practitioner.

b) Transfer nurses: Another enabler and facilitator is the transfer nurse. This profession is in place in Spain and in the Netherlands and was universally praised. In Sweden such a functionary was suggested by some respondents. One problem, however, mentioned in Sweden and the Netherlands was that a transfer nurse may be less familiar with the patient’s context than the bedside nurse.

c) Personal contact between professionals: The possibility to easily establish personal contact, e.g. to discuss how to handle a medical problem directly or to get advice was mentioned as a facilitator in most countries.

Hospital physician, Sweden: In these situations, I think, it would be best to use the telephone more often. Call and ask… ‘we have this patient here’, they call from a nursing home or so. ‘How do you advice us to handle this, refer her to the hospital, or?’

Hospital physician, Spain: It recently happened that a patient of mine was discharged with an unusual treatment and what I did was I contacted the primary care centre, her family doctor to inform him, even if it was already stated in the discharge report so as to explain why I had prescribed this medication and how we could organize all this; I did all this on the phone.

Not only do personal contacts facilitate exchange of information and advice, another very important function is the networking one creates by better understanding of each other’s processes.

4.2.3 Critical issues in attitudes

One of the most important barriers for continuity of care and good handover practices are attitudinal aspects and lack of understanding of each other’s needs. All stakeholder groups in all countries recommended focusing more on this particular aspect of handover.

Hospital physician, Italy: We are on two different tracks that hardly meet. They read our medical discharge reports. We read their referral notes and we all keep on going on our own direction. In my opinion we have different point of views on problems. We have the inpatient view, we see the acute patient who needs specific treatments, and they see different kind of patients. We are on two tracks that hardly converge…like the railway.
Hospital nurse, the Netherlands: I would like to know how our handovers are perceived by homecare nurses. I make an assessment, like this information is necessary for them, but is this right? So, for me as a hospital nurse, it would be of added value to hear from homecare nurses precisely what they need. What do they expect from us?

Community nurse, Sweden: On those emergency wards, there everything happens so rapidly, you go in and out and sometimes we don’t know at all what has been done.

An attitude regarding primary care professionals being inferior to hospital providers was noted in Spain and Italy and is also mentioned in one Swedish interview. Community nurses in Sweden meant that hospitals do not take the differences between the systems into account. Swedish hospital staff also reflected on the difficulties for emergency wards to meet the needs of primary care in planning all discharges in advance.

Mutual respect and listening to each other is recommended and collaborative meetings or physicians working in both a hospital and primary care are believed to help change such attitudes. Negative attitudes to handover communications are mentioned as a barrier in the Netherlands and in Spain.

4.2.4 Patient-centeredness and patient awareness

Patient-centeredness and a good doctor-patient communication are decisive for good handover in all five countries, especially where the patient hands over all documents directly and acts as conduit between providers.

Patient, Poland: Treatment would be facilitated if the hospital doctor would get the detailed information from the PC doctor, who should have his patients’ dossier as my GP has. When I signed in for her, I gave her all my medical files in one folder. All photocopies of previous medical history, tests, surgeries etc. One should take a more holistic patient view (also in hospitals).

In emergency wards patients may be overwhelmed by too much and too rapid information, especially old or cognitively impaired patients. Patient empowerment thus varies depending on availability and attitudes of the care providers. Especially geriatric patients and patients with low health literacy or other vulnerable groups very much rely on the health care providers to help.

Patient, Italy: I do not know, but I saw that when physicians came to visit me they exchanged opinions about patients, even though I am a little deaf I could trace them with my eyes…what they were saying…”If we give this to her what do you think?” They shared things between them. This I never saw in the other hospital.

Not only are the patients/relatives an importance aspect of the patient-centeredness and good communication, but also professionals in hospitals and primary care, even if it is difficult sometimes taking the time listening to the patient.
Hospital physician, Spain: Besides the fact we have a lot of work... this is something that should be one of the most important things in our work but it becomes one of the most irrelevant in the end.

Personal contact between health care providers is appreciated by patients/families. However, some patients, especially interviewed in Poland and Spain, do not acknowledge or bother about such communication.

Patient, Spain: It's their business, we don’t interfere.

4.2.5 Critical issues in the environment and the healthcare system

In countries with national standards for handover processes some professionals in hospitals and primary care find these standards very helpful. Clinical guidelines of care for specific pathologies are considered as good examples in Spain. In Poland all respondents highlight the need to initiate procedures for handovers. A formal procedure for information transfer to a GP in cases where no referral has been made was suggested also in Italy.

General practitioner, Italy: Formally when one of my patients accesses the ER if I did not referred that patient, formally, I am not notified of his/her access.

Excessive workload and time pressure of health care professionals are hindering best handover practices in all five countries. Another organizational aspect is the complexity of settings. Academic tasks like research and educational activities, together with a large catchment area and many health care centres to cover, are likely to hinder contacts with primary care providers. In the rural health care setting explored in Italy, almost all care providers know each other and collaboration is a means to deliver better patient care concerning cardiovascular morbidities.

Hospital physician, Italy: My colleagues, myself and the nursing staff in the ward placed ourselves in a condition of peer-to-peer with respect to the GPs. The message was: your problems are my problems.

The lack of infrastructure, such as computer databases and of IT support, is a barrier in Poland. In Sweden, different regulations for locally administered nursing homes and regional hospitals hinder a full integration of the information systems between hospitals and nursing homes.

The handover situations are resources in the social network of the patients. If the family of a Polish patient has the capacity to “replace” a disabled patient in providing health related information and transfer medical documents between different clinical microsystems, the continuity of care is better and the patient’s journey is improved and shortened. Examples of bad handover processes were identified when a family of a patient does not want to take the patient back home to take care of him (Spain), or when the patient has no social care network (Italy). Too restrictive criteria for necessary social resources (Spain) and long waiting lists for after care (the Netherlands) or for primary care (Poland) are barriers in the community mentioned in the interviews.
4.3 Summary of analyses of interviews, process maps and artefacts

The interview results were supported and corroborated by the results of the analyses of the process maps and the artefacts. For an example of a process map analysis see Appendix D. Displayed in Appendix E is an example of one patient’s artefact analysis, triangulated with a complete set of the results of the individual interviews (=interview with the patient and interview with the patient’s care providers at the hospital and in primary care).

Also when the identified barriers and facilitators are sorted in the five countries’ respective social, linguistic and technological contexts, the similarities and differences appear quite evident. The linguistic context has most impact on the Spanish results, since the country-specific inclusion criterion was patients with low health literacy. The findings from all data sources are displayed in Table VIII.

Table VIII. Main barriers and facilitators identified in the social, linguistic and technological context in five countries

<table>
<thead>
<tr>
<th></th>
<th>Netherlands</th>
<th>Spain</th>
<th>Poland</th>
<th>Italy</th>
<th>Sweden</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Social facilitator</strong></td>
<td>-Personal relation with other professionals -Caregivers around patient -Patient and family empowerment -Informed patient -Patient-centredness</td>
<td>-Patient education -Direct communication between professionals -Feedback -Specialists working in primary care</td>
<td>-Patient responsibility for own health -Supportive role of the family -Networking between professionals</td>
<td>-Patient responsibility -Supportive family -Specialist hospital physician acts as bridge to GPs -Cohesion among GP associations -Personal relations between professionals</td>
<td>-Patient brings own medication list and contacts community nurse -Personal contact between professionals -Collaborative meetings</td>
</tr>
<tr>
<td><strong>Social barrier</strong></td>
<td>-Waiting lists (nursing homes) -Lack of feedback -Professional hierarchy -Work load and time pressure -Lack of knowledge and wrong expectations from other microsystems -Complex settings</td>
<td>-Patient has no telephone -Lack of family support for patient -Restrictions for social resources -Lack of knowledge about the healthcare system -Negative attitudes to other microsystems/handover -Conflicting schedules -Frequent changes of contact info</td>
<td>-Poor access to specialized care -Resources in primary care -Seldom direct contacts between systems</td>
<td>-Some patients don’t deliver the medical discharge report to GP -No formal notification to GP for not referred patients -Bureaucratic barriers before starting treatment -Social climate doesn’t favour mutual respect</td>
<td>-Patients too sick to carry responsibility -Neither patient nor family knows the medical history -Work load and time pressure -Lack of knowledge and wrong expectations of other microsystems -Multiple responsible authorities</td>
</tr>
<tr>
<td><strong>Linguistic facilitator</strong></td>
<td>-</td>
<td>-Patients receive explanation when needed</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Linguistic barrier</strong></td>
<td>-Abbreviations used in discharge notes</td>
<td>-No interpreter/translator available -Patients don’t understand indication for treatment -Difficult to deal with low health literacy -Medical report only for physicians</td>
<td>-Language barriers for foreigners -Lack of shared doctor and nurse communication</td>
<td>-Unclear information from ambulance staff</td>
<td>-No interpreter/translator available</td>
</tr>
</tbody>
</table>

Continued
In summary, several barriers are common in all countries studied and some facilitators are also shared. The completeness of information is a critical issue independent of the social context. Lack of medication lists is, for example, a barrier at handovers related to referral, as well as to handovers at discharge in all countries. Timeliness of information is not very important in systems with “indirect” handover (see 4.1.1), where patient responsibility issues are more critical. Attitudinal aspects are important in all countries. The need for improvement of IT systems is a critical issue raised in each country, also where an integrated, shared IT system already is in use.
CHAPTER 5. Concluding remarks and future work

The objective of Work Package 2 is to identify the barriers and facilitators to effective handovers. This WP is to focus on the social, linguistic and technological context in which patient handovers take place in different European settings.

The following activities were planned in the Grant proposal:

- Developing research framework
- Getting ethics approval in each country
- Recruiting key stakeholder groups in the Netherlands, Spain, Poland, Italy and Sweden.
- Conducting interviews with the stakeholder groups.
- Developing systems process maps
- Assessing different tools used in communication and treatment and their effect on the communication process using artefact analysis.

The participating countries in WP2 have conducted interviews with stakeholders individually as well as in focus groups. A sample of individual interviews are analyzed and reported in this Deliverable. Originally we aimed to conduct two focus groups in each stakeholder group and include process mapping in these exercises. Early in the planning, we decided that process mapping would be better performed in the multi-professional group settings. Therefore, one focus group interview in each stakeholder group and at least one process mapping exercise were conducted in each country.

Artefact analyses were conducted in the Netherlands, Spain, Poland and Sweden and are reported in this Deliverable. To be noted is that the start of the Handover project work was somewhat delayed in Italy. A consequence of this is that fewer interviews and artefacts could be analysed and included from Italy in this deliverable.

The activities of WP2 have accomplished an important empirical base for continued work in the HANDOVER project and for other EU communication projects. Chronically ill patients, and their healthcare providers (e.g. physicians and nurses in hospitals and primary care), have contributed with rich descriptions about their experiences and perceptions of handovers between the clinical microsystems. These experiences have been framed and interpreted in their respective social, linguistic and technological contexts. The prevailing handover practices differ between countries.

The completeness and timeliness of information is a critical issue and lack of medication lists were a commonly identified barrier to improvement. Technological tools, such as shared IT-platform systems, the role of transfer nurses, and personal contact between care providers were seen as facilitators to timely and relevant patient information. Improving the shared understanding between professionals and clinical microsystems needs more focus than is common in the studied organizations, and may be enhanced through collaborative meetings or bridging practices. Communication between care providers and patients/families needs improvement, especially in countries where the patient plays an important role in the handover process.
The study included five countries and needs to be replicated in other European countries. The research was performed in different settings and used different clinical foci. The diversity of settings and languages make drawing comparisons and recommendations for action complicated. However, since this was an inductive qualitative research, the empirical findings were not aiming at statistical generalization but to suggest guidance for further research and policy development.

The preliminary analysis of this Deliverable is based on only about half of all interviews performed. Several steps have been taken to enhance the transferability and credibility of the findings [20]. The socio-economic constraints, healthcare systems and settings are well described. The use of triangulation methods strengthens the results and an innovative internal quality assurance program has been set up. The findings help understand the context in which chronically ill patients and their care providers interact in Europe [20].

**In conclusion**, the study has identified several important barriers and facilitators to effective patient handover practices; common as well as context-specific. The empirical research performed in WP2, allows us to further analyze cultural aspects, error risks and adverse events to better understand why patient handovers can be improved. We can tailor future interventions to address the identified barriers and incorporate the identified facilitators. We are planning these analyses for upcoming work packages. Our future interventions are likely to be multi-layered, and multi-sectoral, ranging from the individual clinician level, clinical level, and with a special focus on the microsystems and the organizational levels [21, 22].
REFERENCES


12. [www.atlasti.com](http://www.atlasti.com)


APPENDIX A

THE HEALTHCARE SYSTEMS IN THE FIVE COUNTRIES

The Netherlands

The Netherlands has over 16 million inhabitants, approximately 100 hospitals (45,000 beds), 1,400 residential homes (110,000 beds) and 330 nursing homes (58,000 beds). Nearly all patients are listed with a primary care physician (PCP). The PCP acts as a gatekeeper to specialized care. All PCP’s have out-of-office hours for urgency care, arranged in primary care wards. Sometimes these primary care wards and emergency care departments within hospitals are combined. The Dutch health care system consists of a combination of competition, universal health care coverage and is of relatively high quality. The percentage of GDP (The Gross Domestic Product) spent on health care in the Netherlands is 9.8% (OECD, 2009).

In January 2006 a new insurance system for curative health care came into force. Under the new Health Insurance Act, all residents of the Netherlands are obliged to take out health insurance. The new system is a private health insurance with social conditions. The system is operated by private health insurance companies; the insurers are obliged to accept every resident in their area of activity. A system of ‘risk equalisation’ enables the acceptance obligation and prevents direct or indirect risk selection. Long-term care for the elderly is covered by social insurance from taxation. For those who would otherwise have insufficient income, an extra government allowance is paid to make sure everyone can pay for their health care insurance. People are free to purchase additional packages from insurance companies to cover additional treatments such as dental procedures and physiotherapy. A number of recent changes are meant to further improve the quality of care in the Netherlands. Doctors and hospitals are now required to publish information every year about their performance. This information is available to the public on websites, but it is still too soon to see how much effect it has on patients’ choices.

Spain

The Spanish National Health System comprises both the State and Autonomous Community Health Departments and covers all the health functions and services. Health care in Spain is publicly funded, with universal, free health services at the time of use. Spanish Health care is a non-contributory benefit and paid for through taxation, and is included in the general budget for each Autonomous Community. Health care is one of the main instruments of policies to redistribute income amongst Spanish citizens: all citizens pay taxes according to their financial capacity and receive health services as needed. The state has the main responsibility for the general organization and coordination of health matters. The Autonomous Communities govern Health Planning, Public Health and Health care. Each Autonomous Community includes a Regional Health Service, which is the administrative and management body responsible for all the centres, services, and facilities in its own Community, whether these are organized by regional or town councils or other intra-community administrations.
Primary Health Care (PHC) is provided through primary care centres, which are staffed by multi-disciplinary teams comprising general practitioners, paediatricians, nurses and administrative staff and, in some cases, social workers, midwives and physiotherapists. PHC professionals play a gatekeeper role for more specialized services. General practitioners are the first point of contact between the population and the health system; they are responsible for screening patients and providing both diagnosis and treatment if appropriate. They may also refer patients to specialized services if necessary. Specialist Care is given in Specialist Centres and hospitals, for both in- and out-patients. Once care is complete, the patient is referred back to the PHC doctor who uses the full medical history as a basis for subsequent treatment and overall care.

**Poland**

The Polish health care system, serving a population of over 38 million, is based on general health insurance, provided by the National Health Fund in 16 provinces. Primary health care is organized within the family-medicine concept of health care system gatekeeping. No referral from a GP is required to: gynaecologist and midwife, dentist, dermatologist, venereologist, oncologist, ophthalmologist, psychiatrist. There are approximately 700 hospitals; the majority is public; recently 1/10th has turned private. Numbers of acute care hospital beds are above the Organisation for Economic Co-operation and Development (OECD) average (3.8 compared to 4.6 acute care beds per 1000 population in 2007). Poland follows the reduction in the number of acute care hospital beds, which is related to the reduction in average length of stay: from 10.8 days in 1995 to 5.9 in 2007 (OECD Health at a Glance, 2009). Twelve per cent of Polish hospitals have been accredited within the voluntary, Joint Commission International (JCI) based Polish National Accreditation Program, run by NCQA since 1998. The accreditation program also covers the Primary Care sector, Mental Health and Substance Abuse Centres. The National Committee for Quality Assurance (NCQA) and the Polish Society for Quality Promotion in Health Care are the key actors in the field of quality in health care.

Since the 1980s the Polish health care system has been constantly in a stage of change and transformation. With higher salaries for health care professionals, rising awareness of the significance of quality of care, patient safety and patient centeredness (Law on Accreditation, Law on Patient Rights and the Ombudsman of Patient Rights), it is harmonizing other EU Member States.

**Italy**

The Italian health care service is publicly funded and based on the principles of universal and equal access to healthcare services. The aim of the health care system is to satisfy the constitution that considers health to be a fundamental individual right of collective interest. The national health care system provides low or no-cost health care to citizens, including in-patient treatment, visits to a GP, and medical assistance provided by paediatricians, obstetricians and other specialists.
Following the reform of 2000, the Italian health care system is regulated by the national health care plan issued every three years by the national government and administered by the 20 regions through regional health care plans. The 20 regions attain the objectives set in the plan through 166 local health care agencies. The local agencies provide care either through directly managed hospitals and territorial services or by paying for the services by providers accredited by the regional districts, such as independent hospitals, e.g. agencies and university-managed hospitals and private structures, (e.g. hospitals, nursing homes, and laboratories under contract to the national health care service). The health care system for the population of 60 million is financed by taxes and by contribution-fees paid at the point of service to the local health care agencies. Each resident is required by law to enrol with a local health care agency GPs. The services of the GPs are free. GPs are paid a fixed amount per patient with a maximum of 1,500 patients per GP. On-call physicians are available during holidays, nights and weekends, providing medical care when GPs are not available. Alternatively, patients may go directly to the hospital emergency departments. Hospital services are free or low-cost and basic services (e.g. general medicine, surgery, paediatrics and gynaecology) are available at most general hospitals.

**Sweden**

The Swedish health care system is built on 21 county councils, with numerous regional primary care clinics and public hospitals, and fewer privately owned facilities. Social services, including homecare, and nursing homes, are provided by 290 municipalities for the total population of 9 million. All residents are covered by the national health insurance system, which is financed primarily by taxes. All physicians, including the majority of those in private practice are attached to the insurance system and their fees are regulated by law. Less than 1% of the health care sector is genuinely privately financed. There is a minor co-payment for visits to all types of health care facilities; approximately € 11 for primary care visits and € 33 for specialist and hospital emergency department visits. However, there is an upper limit to the patient’s out-of-pocket expenses: no one need pay more than approximately € 90 (for prescribed drugs € 170) over any one period of 12 months.

Patients can list themselves with a primary care physician in a public or private setting. Most health care centres have out-of-office hours for urgencies. Larger hospitals have an emergency care department, staffed with a variety of specialists, including a growing number of emergency physicians. However, the number of hospital-based emergency departments has been reduced by a third over the past 20 years due to hospital closures. Likewise, the number of in-patient beds is now the lowest in the Organisation for Economic Co-operation and Development (OECD) listings, with 2.1 acute care beds per 1000 inhabitants. Referrals and care planning are regulated by Swedish law and interpreted in national, regional and local guidelines. There is a large societal emphasis on prevention and self-care. When in need of medical attention, patients are encouraged to seek information over the web or by the telephone advisory function before seeking care. There they are connected with an appropriate provider in the health care network that best meets their needs and expectations.
APPENDIX B

INTERVIEW GUIDES

1. Guide for individual interview with patient/family

This semi-structured interview guide is to be used in the audio-taped face-to-face interview with the patient/proxy after the patient’s discharge from the hospital. Please note down where the interview takes place (in the patient’s home or elsewhere; other people around, etc), and other circumstances regarding the encounter (positive/negative aspects, etc)

(Length of time of interview: about 1 hour)

Role clarification
Ask the patient to think about his/her recent experience of the Emergency ward at the Karolinska University Hospital, and coming home again and ask who is/are his/her current care provider(s) in the community.

Recent experiences of communication
Are you satisfied /dissatisfied with how important information about you, your situation and your treatment was communicated between the different doctors/nurses at the hospital and between the hospital and primary care? Was the communication sufficient and in time?

What is your understanding of how communication took place between the inpatient doctors/nurses and your primary care doctors/nurses? What was your own participation in this communication? What about your next-of-kin’s?

What did you want the inpatient care providers to know?
(probes when needed – investigations, tests, planned treatment, drug prescriptions…)

What did you want the primary care physician/nurse to learn about your hospital stay?

Critical incident technique – appreciative and problematic situations
Please tell me about one occasion when the communication process in your view was very satisfying. What was behind this successful occasion? Consequences for you?

Please tell me about one occasion when the communication process in your view was very dissatisfying. What was behind this occasion? How did you notice that it did not work well? What is your opinion about the consequences for you and your well-being?

Communication in general; barriers and facilitators
How does communication generally work for you between primary care and emergency care and back again?

What would, in your opinion, be the best way for your primary care physician/nurse to inform the hospital staff about you and your needs? What would be the best way for your primary care physician/nurse to learn about what has happened in the hospital?

In thinking about improvements to communication, what barriers do you think need to be addressed? What would you describe/what strategies would you employ to ensure the communication between primary care and hospital emergency care in order to make care safe and effective for the patient?
2. Guide for individual interviews with care providers

This semi-structured interview guide is to be used in the individual interviews with the patient’s care providers shortly after the patient’s discharge from the hospital. The interview guide needs to be adjusted to the care provider being interviewed (hospital/primary care/doctor/nurse/other carer). Please note down where and with what category of professional/carer the interview takes place, and individual facts or circumstances regarding the encounter (positive/negative aspects, etc).

(Length of time of interview: about 1 hour)

Role clarification
Tell the respective care provider that the first part of the interview relates to the specific patient NN and his/her admission to/discharge from the hospital. The last part concerns handover communication in general between primary care and emergency department

I. Experiences of communication in a specific case
Are you satisfied /dissatisfied with how the communication about the patient was handed over to you from primary care/to the emergency room/ to the emergency ward/ and back to primary care? Was the communication sufficient and in time?

What information, in your view, about a patient like NN, was necessary for (you as) hospital staff (/primary care provider) to learn when you/they took responsibility for his/her care? (probes – investigations performed, test results, planned treatments, drug prescriptions…)

What information, in your view, was necessary for (you as) the primary care physician/nurse to learn about this patient’s hospital stay? What methods did you personally use for communication in this handover?

Critical incident technique – appreciative and problematic situations
Please tell me about one instance when you felt that communication between primary care and the hospital regarding a patient was exemplary. Try to be as detailed as possible about this communication process. What was behind this successful occasion? Impact on the patient?

Please tell me about one instance, where you felt that inadequate communication between primary care and the hospital had a significant impact on the patient’s clinical course in the hospital? Details…. What was behind this occasion? Consequences for the patient?

II. Handover communication in general
What’s your opinion about how communication between primary care (doctors and nurses) and emergency care (doctors and nurses) currently is performed? What are the details always delivered? What is often omitted?

What method, what tools do you currently use to inform the PPC/nurse/the emergency dept? Do you have (written) guide-lines? Describe… What details do you think are necessary to communicate? (probes) Who do you designate as primarily responsible for this communication to take place?

What would, in your opinion, be the best way for you to learn about the primary care/emergency care physician’s/nurse’s assessments of patient status and best practice? What would be the best way for the primary care physician to learn about what has happened in the hospital?

When a patient is discharged, have you ever felt uncomfortable that issues will go unresolved or things will be lost to follow-up by the primary care? Is there anything that occurred during a patient’s hospital stay that you wish that you would have informed the primary care physician/nurse about earlier?

Barriers and facilitators
In thinking about improvements to handover communication, what barriers to effective communication in the patient’s care network do you think need to be addressed?

What strategies or methods would you employ to ensure the communication between primary care and emergency care to be safe and effective for the patient in hand-over situations?

3. Focus groups with patient/patient representatives: interview guide

1. What’s your experience of communication between primary/community care (doctors and nurses) and emergency care (doctors and nurses)?
2. What roles do different stake-holders (patients, families, care providers from different settings) take?
3. What do you see as your task(s) and responsibility in clinical handover?
4. Who should be responsible in your opinion for the general coordination of the handover process?
5. Are tasks and responsibilities clearly defined and how does this work in practice?
6. What type of information do you expect to be communicated between primary/community care and emergency care?
7. Barriers/facilitators to transitioning from care by the community to care by the hospital and back again.
8. Describe the most effective, successful handover you would suggest if there would be no restrictions regarding e.g. finance, employees, facilities.

4. Focus groups with care providers: interview guide

Introduction by coordinator (welcome, aims with the focus group and “rules” for the session)

Questions to focus around:
1. Experiences of communication between primary/community care and hospital care? Experiences may concern e.g. ways of communication, timeliness, content and participating stake-holders.
2. Methods/ tools personally used to inform the primary care physician/nurse or the hospital specialist/nurse? (E.g. written guide-lines, informal routines, use of ICT etc.; description of these)
3. Perspective on task(s) and responsibilities in clinical handover (individual, shared, general/clearly defined?)
4. Describe the most effective, successful handover you would suggest if there would be no restrictions regarding e.g. finance, employees, facilities.
5. Experiences of uncomfortable feelings (that things will be lost or go unresolved in the follow-up) after referral/discharge.
6. Suggestions about ways of dealing with feedback (between hospital and primary care providers) when things actually go wrong in the handover (at referral/discharge)?
APPENDIX C
COUNTRY-SPECIFIC PROCEDURES FOR DATA COLLECTION

The interviewers methods of approaching subjects, interview location, etc.

The Netherlands

a) Individual interviews: All interviews were conducted by one of two trained interviewers, one general practitioner and one organizational-sociologist, both familiar with the organization of primary and hospital care in the Netherlands. Pilot interviews were initially performed and assessed by the local research group. In collaboration with medical and nursing staff, targeted patients from internal and surgical wards were approached with oral and written information about the study by the interviewers, the day of, or the day before, discharge. If the patient or a representative family member agreed to participate, he/she was told that he/she would receive a telephone call to arrange the interview at a later time. The patient (and/or family member) was asked also for consent to interview his/her care-providers at the hospital and in primary care. Interviews with one hospital physician and one nurse, responsible for admission or discharge, were scheduled as soon as possible by one of the two interviewers at a location suitable for the interviewee. About three weeks after discharge, an interview was scheduled with the patient, either at his/her home or, if the patient preferred, at the hospital, sometimes with a family member present. Later, interviews with the patient’s general practitioner were carried out at their workplace or, occasionally, home. The interviewer who interviewed the patient and/or family was also the same person to interview the patient’s hospital and primary care provider. All interviews were audio-taped and then transcribed by well-instructed research assistants with a background in healthcare. The transcribed interviews were subsequently transferred onto document files fit for software use.

b) Focus group interviews: The two researchers responsible for conducting the individual interviews also organized the focus groups. Focus group interviews were prepared by reviewing relevant literature and the development of a protocol to assist in the organization of each focus group session. Each group was led by one trained moderator with, except for the focus group with patients and representatives, the same background as the interviewees. The moderator facilitated the group discussion by asking and clarifying questions, and providing guidance in the discussion in order to address all issues. The moderator was accompanied by one or both members of the research team. They took notes and participated in the discussion when it was felt necessary.

There were 5-8 participants in each group. Each profession had its own group: hospital physicians, hospital nurses, general practitioners, primary care/ community nurses, and patients/ patient representatives. The groups were scheduled at suitable times and location. Field notes were written after each interview jointly by the two responsible researchers. Also, the focus group interviews were audio-taped and then transcribed by well-instructed research assistants with a background in healthcare. The transcribed interviews were subsequently transferred onto document files fit for software use. As an extra quality control the interviewers listened to the transcripts. Focus group participants were sent a summary
comprising the key points that were discussed to check if researcher’s interpretations corresponded with those of the participants.

c) **One process map group** was conducted. Two primary care/community nurses, two general practitioners, two hospital nurses and two hospital physicians (both from different hospital settings) participated. Due to personal circumstances, one medical secretary was forced to cancel her participation. The start- and endpoints for the process were decided beforehand. Yellow “post-it” notes, marked to distinguish barriers and facilitators, were used during the mapping exercise. The process map was audio-taped, transcribed and transferred onto document files fit for software use.

d) **Documents/artefacts**: Relevant patient documentation from the patient’s hospital stay was collected in multiple stages. First, several data were collected at the inclusion of each patient. Secondly, a medical student assisted in completing missing data from hospital files. At a later stage, after selecting a relevant artefact, documentation relevant for this analysis and triangulation was retrieved by one of the researchers. This was done in cooperation with one nurse and one GP assistant. The analysis and triangulation was performed by two researches (and discussed in the Dutch project group).

**Spain**

a) **Individual interviews**: Interviews were conducted by two trained interviewers, one physician in residency and one linguist and communication specialist with a background in nursing, both familiar with hospital care. Pilot interviews were initially performed and assessed by the local research group.

Target patients were approached with oral and written information about the study by a hospital nurse during their admission to the hospital. If the patient agreed to participate, he/she was asked to sign the consent document to participate in the study and also whether they were willing to participate in interviews, focus groups or both. The patients that accepted to participate in the interviews were informed that they would receive a telephone call to confirm the time of the interview.

An interview with one admitting and one discharging staff member (hospital physician and/or nurse) was scheduled as soon as possible by one of the two interviewers at a location suitable for the interviewee. About three to four weeks after discharge, an interview was scheduled with the patient, either at his/her home or, if the patient so preferred, at the hospital or primary care centre, sometimes with a family member present. Later, interviews with the patient’s primary/community care provider (physician or nurse) were conducted at their respective workplace. The interviewer was the same person who earlier had interviewed this patient’s hospital care provider. All interviews were digitally recorded and then transcribed by the interviewers and transferred into document files for software use.

b) **Focus group interviews**: All focus groups were conducted by the same moderator who had substantial experience in this field of research. Two members of the research team alternated in participating in the focus groups as observers and passed prompts, if required, to the
moderator. Four groups with 5-6 participants each were interviewed, each profession separately: hospital physicians, hospital nurses, general practitioners, primary care/community nurses. A fifth focus group was held with patients; however, despite various attempts only three patients participated. Participants of each group were asked to fill the data overview form. Groups were scheduled at times and locations suitable to the participants Field notes were written after each interview by the moderator in collaboration with the researcher participating in the group. Also the focus group interviews were digitally recorded, then transcribed by the moderator and transferred onto document files for software use. As an extra quality control a sample of recordings and transcripts were reviewed by two members of the research team.

c) Process maps: Two groups, one for each hospital, were scheduled to prepare the process maps. In the first hospital, the process mapping group comprised: one primary care/community nurse, one general practitioner, one hospital nurse, the hospital quality director, the system information director, one information director, one social worker, one cultural mediator, and two link nurses (one from primary care and one from hospital care). At the second hospital, the process mapping group comprised: two primary care nurses, two general practitioners, one medical secretary from primary care and one from the hospital, two hospital nurses, the hospital-primary care coordinator, two hospital nurses and two specialists (from a medical and surgical speciality).

The end-points for the process were decided in advance and the group used “post-it” notes for facilitators and barriers during the mapping exercise. Once the process maps were finalized and all participants agreed on its elements and order, photos were taken of the arrangement of “post-it” notes and the process maps were drawn in Microsoft VISIO.

d) Documents/artefacts from the patient’s hospital stay were collected for two patients, which were identified through the patient interviews described above. Two researchers participated compiling the artefacts for analysis and triangulation.

Poland

a) Individual interviews: All interviews were conducted by two trained interviewers from a company specializing in qualitative research. One of the interviewers was aged 47, head of the company, psychologist and sociologist, with 20 years of experience in qualitative research and conducting individual interviews and focus group interviews. The second researcher aged 36, a culture animator with 5 years of experience in running workshops, conducting individual interviews in handover research, conducted individual interviews with patients and primary care professionals. The National Committee for Quality Assurance (NCQA) staff assisted, partly participated in and overviewed this research. Due to the extensive experience of the researchers pilot interviews were not conducted.

Interviews followed the Handover Interview Guide. All individual interviews were audio-recorded and then transcribed by members of the research team and transferred onto files for software use. As an extra quality control, moderators and NCQA researchers verified the transcripts by comparing audio-tapes with transcriptions. The average duration of an individual interview was approx. 35 minutes. Target Patients (apart from the common
inclusion criterion of being aged 65+ as Poland has a focus on Geriatrics) were recruited by Handover Hospital Coordinators during the patients’ hospital stay (on the day of discharge) and asked to confirm in writing their participation in the study interview, conducted after discharge (within two to three weeks) from General Surgery or Internal Disease Departments. Patients were informed orally about the study by Handover Hospital Coordinators. Hospital doctors provided information about the patient in the structured “Patient interview” form.

All documents (patients’ consents and patient data) were given to moderators for further recruitment. Patients were contacted by telephone in order to book times and to discuss conditions for the interview. Location was always specified by the respondent. Almost all interviews (27 from 28) were conducted in the respondents’ home environment; only 1 interview in a park. In the “Patient interview form” the moderators described the conditions for the interview. Although the patient was always the main respondent, his/her family also sometimes participated either by listening or active participation. The interview started with taking the patient’s contact details, obtaining consent for audio-taping, explaining the aim of the study. The patient was also asked for consent to interview his/her care-providers at the hospital and in primary/community care and for contact details to his/her primary care doctor. After the interview, a moderator usually continued to discuss patient health and the family situation. Patients received a small box of chocolates as a token of appreciation.

Hospital medical professionals (doctors and nurses, whose patients had been recruited) were recruited by the Handover Hospital Coordinator and asked to participate in the study interview. Most doctors had admitted the patient, only two participated in the discharge. Professionals were scheduled for interviews as soon as possible after patient discharge, at a suitable location. After interviewing the patient, moderators telephoned professionals to agree on the venue and time of interview. All interviews were conducted at the hospital, as this was most convenient for the respondents.

Primary care doctors and nurses were recruited by NCQA researchers: a fax with a description of the study was sent to their office. Preliminary consent had been obtained via the telephone. The professionals’ contact details were given to moderators, who confirmed the consent and arranged details of time and place for the interview. Time and place (respondent’s place of work) were specified by the respondent. Although the respondents chose to be interviewed during their working hours, and defined the interview hour, the time of interview was changed and modified frequently and sometimes many times (due to an excessive workload - influenza season). Interviews with hospital and primary care professionals started by obtaining the professional’s consent for audio-taping and explaining the aim of the study. After the interview, the moderator collected contact details and information about the professionals in the structured “Health care professionals’ interview form”.

b) Focus group interviews: Six groups of 4-7 participants each were interviewed: two with patients (one with internal medicine department patients, one with surgical department patients); four with health care professionals separately: hospital physicians, PC physicians (GPs), hospital nurses, primary care/community nurses. Doctors and nurses from hospital and PC level were recruited via telephone calls; the respondents approached had not less than 10 years of work experience, including handover (a purposive sampling method was used for recruitment). Patients were recruited by the moderators using snowball methodology. After the initial recruitment, a telephone call was made to verify whether they fulfilled the inclusion
c) **Process maps:** Participation in focus groups was as follows: 10 patients (5 in each patient focus group), 4 hospital physicians, 7 hospital nurses, 4 GPs and 7 primary care/community nurses. Each of the six focus groups developed two process maps for handover: idealistic and realistic. The process map included patient journey from PC level to the post-hospital visit in PC practice. A “Post it” method was used, with much emphasis on defining barriers and facilitators for effective handover. The Polish process map results from the discussions held with moderators, researchers and some study participants (both respondents of training interviews and members of focus groups meetings, both from PC and hospital level).

**d) Artefact analysis:** The patient journey for artefact analysis was identified based upon patient interviews and the “Patient’ interview form”. Documents were collected at hospital and PC level. NCQA researchers cooperated with the Handover Hospital Coordinator in compiling the artefacts for analysis and triangulation. This analysis was performed and discussed by NCQA researchers in consultation with Handover Hospital Coordinator.

**Italy**

**a) Individual interviews:** One interviewer and one member of the hospital staff familiar with risk management conducted all interviews. The target patients were selected according to the inclusion criteria of the study plan from the records of the Emergency Department. The patients were further selected with the support of the hospital staff in charge of care on the ward. The patients were approached and given oral information about the study by the interviewer and one member of the hospital staff. If the patient agreed to participate, he/she was told that he/she would receive a letter describing the aim of the study and a telephone call to arrange the interview at a later time. The patient was also asked for consent to interview his/her care-providers at the hospital and in the primary/community care services. The interviewer scheduled an interview with one admitting and one discharging staff member (hospital physician and/or nurse) as soon as possible at a location suitable for the interviewee. About three weeks after discharge, an interview was scheduled with the patient, either at his/her home or, if the patient so preferred, at the hospital, sometimes with a family member present. Later, interviews with the patient’s primary care provider (general practitioner) were
conducted at their respective workplace. All interviews were audio-taped and then transcribed and transferred onto document files for software use.

b) **Focus group interviews**: After experiences from an initial pilot focus group, one researcher conducted focus group interviews – each group led by one trained moderator and one member of the hospital staff. Three groups with 4-6 participants each were interviewed. So far one mono-disciplinary focus group has been conducted with general practitioners from primary care and two multidisciplinary focus groups with hospital physicians, hospital nurses, general practitioners, primary care nurses and hospital secretaries. The focus groups were scheduled at a suitable time and location for participants. The focus group interviews were also audio-taped. The participants used post-it notes to write down positive and negative aspects regarding their experiences of the handover process. Two other focus groups; one with hospital physicians, one with hospital nurses will be scheduled and conducted in order to assist the work of WP3.

c) **One process map** group met at the hospital. One researcher and one hospital physician structured the care flow chart. The target participants were recruited from Emergency Department (ED) nurses, general practitioners, hospital nurses, hospital physicians and medical secretaries. The end-points for the process were decided beforehand and the group used yellow “post-it” notes for facilitators and orange notes for barriers during the mapping exercise. The session was audio-taped.

c) **Documents/artefacts** from the patient’s hospital stay were collected at the inclusion of each patient. The manager of the admittance staff is currently cooperating with the project team in collecting the artefacts for analysis. This analysis is being carried out by one researcher and one physician from the hospital and is being discussed in the project group.

**Sweden**

a) **Individual interviews**: All interviews were conducted by one of two trained interviewers, one nurse and one medical social worker, both familiar with emergency care. Pilot interviews were initially conducted and assessed by the local research group.

Target patients were approached with oral and written information about the study by a project nurse on the day of discharge from the emergency ward. If the patient agreed to participate, he/she was told that he/she would receive a letter and a telephone call about an interview at a later time. The patient was asked also for consent to interview his/her care-providers at the hospital and in primary/community care. An interview with one admitting and one discharging staff member (hospital physician and/or nurse) was scheduled as soon as possible by one of the two interviewers at a location suitable for the interviewee. About three weeks after discharge, an interview was scheduled with the patient, either at his/her home or, if the patient so preferred, at the hospital, sometimes with a family member present. Later, interviews with the patient’s primary/community care provider (physician or nurse) were conducted at their respective workplace. The interviewer was not the same person who earlier had interviewed this patient’s hospital care provider. All interviews were audio-taped and then transcribed by professional secretaries and transferred onto document files for software use.
b) **Focus group interviews**: After experiences from an initial pilot focus group, three researchers alternated in conducting focus group interviews – each group was led by one trained moderator and one co-worker. There were 6-8 participants in each of the five groups. Each profession had its own group: hospital physicians, hospital nurses, general practitioners, primary care/community nurses, and patients/patient representatives. The groups were scheduled for a suitable time and location for the participants. Field notes were written after each interview jointly by the two group leaders. The focus group interviews were also audio-taped, transcribed by professional secretaries and transferred onto document files for software use. As an extra quality control the interviewers listened to the transcripts.

c) **One process map** group met at the hospital. One primary care/community nurse, two general practitioners, two hospital nurses, two hospital physicians and one medical secretary participated. The end-points for the process were decided beforehand and the group used green “post-it” notes for facilitators and pink notes for barriers during the mapping exercise.

d) **Documents/artefacts** from the patient’s hospital stay were collected at the inclusion of each patient and from primary care after the final interview. Two project nurses cooperated with the researchers in compiling the artefacts for analysis and triangulation. This analysis was performed by three researchers and discussed in the project group.
Process Map of primary care-hospital admission-discharge Handovers

Developed on December 7, 2009, at the Karolinska University Hospital, Huddinge, Sweden.

Participants from the emergency ward at Karolinska Huddinge:
a medical secretary; 2 registered nurses; 2 physicians; and the director (a senior physician) of the ward.

Participants from two separate primary health care centres:
2 primary care nurses and 2 general practitioners.

Process map facilitator was a senior physician (research consultant to the Handover project).
Process Map, Sweden

Facilitators
- A list of current medications
- The reason for seeking ED care
- When a patient has an existing relationship with primary and community care
- A list of medications dispensed through the “Apo-dot” system
- An information card sent from a nursing home
- Information about communicable diseases, e.g., MRSA, VRE
- Reports from recent diagnostic tests, e.g., ordered by the primary care provider
- A report (oral and/or written) from the ambulance service
- Information about previous care episodes and assessments

Barriers
- Uncertain patient ID
- Information system barriers – information is not accessible to all care givers across organizations
- Language barriers when interpreter is not available
- The patient and/or companion do not know the patient’s history
- Pre-existing healthcare relationships are not known
- Incomplete or out-of-date information about the patient sent along in a contact card from a nursing home
- Only medications prescribed at the ED are documented in the electronic record; not (necessarily) which prescriptions the patient had upon arrival
- Patient integrity protection regulations restrict access to important information across providers and/or information systems – this includes e.g., access to a patient’s medication list from primary care.
- The existence of many different care providers – many of whom are not part of the public information system – makes it difficult to trace previous diagnostic and care episodes of potential relevance for understanding the present situation

Facilitators for discharge planning
- Integrated care planning in different IGs (Take Care and WebCare)
- Phone numbers available in WebCare to community actors, e.g., the patient’s district nurse
- Communication by telephone

Facilitators
- Identification of existing support in the community
- Understanding of the patient’s previous (“habitual”) condition
- Information system (IS) communication between hospital and primary and community care actors
- Placing the idea of discharge with the patient’s family/careers

Barriers to discharge planning
- It can be a challenge to identify and reach the “right” actor to plan future care
- Short notice (24 h) when a care planning meeting is called
- Fragmented primary care: while district nursing care is (always) offered by the primary care center nearest the patient’s current residence, patient’s can choose a primary care physician (PCP) based elsewhere
- A lack of communication across different IGs (e.g., Take Care, WebCare, Pr/Doc.)
- Difficulty to find out from the hospital who each patient’s PCP is
- Uncertainty at the hospital regarding which routines work best across different service providers in the community
- Uncertainty regarding who is responsible for what aspects of care after discharge and who has the overall responsibility.

In-patient care, which includes:
- Care planning meeting with community actors (primary healthcare; municipality based home care)
- Decision on forthcoming discharge.

Barriers
- Return to community setting
- No
- Admission?
- Yes

Facilitators
- The patient arrives at the Emergency Department (ED)
- Assessment: History, physical examination, diagnostic testing, initial therapy

Barriers
- Unclear to PCPs if all medications were noted at admission and thus which medication changes have been made during the hospital episode
- Prescription of medications which are not available 24 h in the community
- Care plans which do not harmonize with existing routines and capacities in the community
- WebCare only covers patients from 65 years old – other communication modalities are needed for younger patients

The patient is discharged from the hospital

The patient transfers to the community setting

The patient is cared for in the community setting
Advanced Medical Home Care
Referral notes written by nurse including prescribed drugs (electronic record system shared with hospital)

Notes from ambulance care providers
Notes by ER nurses

Admission history by physician
Telephone notes taken by nurse at ward, from admitting physician

Prescribed and administered drugs during stay
Admitting nurses notes about nursing care

Advanced Medical Home Care
Records about home visits following discharge

Referral for follow-up to primary care physician

Discarded

Notes from primary care physician
- patient contacts by phone
No initiative from primary care?!

Outpatient visit at pulmonary clinic 4 month after discharge
Discharge report by physician

Electronic prescriptions at discharge

By ambulance to ED, admitted
Inpatient Stay Day 1
Discharge Day 2
Follow up by 3 different levels of care

Dyspnoe

Notes from ambulance care providers
Notes by ER nurses

Artefact Analysis

APPENDIX E
## Analysis and triangulation of results

The handover summarized above may be divided into two parts, all of which will be commented from the following different perspectives: artifacts, interviews with patient and wife, with admitting nurse (HN), discharging doctor (H) and community nurse (CN):

1. **Handover from Advanced Home Care (AHC) to hospital (H):**
2. **Handover from Hospital to Primary Care Provider (PCP), AHC and Specialist Outpatient Clinic (S) – including follow-up**

### 1. From home to hospital

<table>
<thead>
<tr>
<th>Barriers:</th>
<th>Artefacts prospectively collected</th>
<th>Patient interview after 7 weeks</th>
<th>Hospital staff interviewed after 5-7 days</th>
<th>Community nurse interviewed after 8 weeks</th>
</tr>
</thead>
<tbody>
<tr>
<td>No problems in spite of after hour admission</td>
<td>“Learned to always call AHC and get referral after hours”</td>
<td>No need for more information</td>
<td>AHC was not interviewed; AHC and CN seldom communicates</td>
<td></td>
</tr>
<tr>
<td>Listed at private PC</td>
<td>Lacks continuous contact with a doctor</td>
<td>CN did not know about hospitalization</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shared IT-system AHC-H and ambulance - H</td>
<td>Knows the best way to handle emergencies; Brings own medication list</td>
<td>Earlier information in patient record</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

### 2. From hospital to home

<table>
<thead>
<tr>
<th>Barriers:</th>
<th>Artefacts prospectively collected</th>
<th>Patient interview after 7 weeks</th>
<th>Hospital staff interviewed after 5-7 days</th>
<th>Community nurse interviewed after 8 weeks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incl need for follow-up, written but did not reach PC?</td>
<td>Medical discharge report incl need for follow-up, written but did not reach PC?</td>
<td>Never heard from PC about a medical discharge report</td>
<td>Hospital don’t give elderly patients enough time to understand and learn, and don’t understand probl at home</td>
<td></td>
</tr>
<tr>
<td>The wife calls CN to tell about hospitalization.</td>
<td>Patient manage himself by the help of wife. Wife or patient calls.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. This patient was admitted several times after the inclusion visit (13 times in 6 months) due to his declining health.
2. Information from community nurse; could be improved since they both served this patient in his home.
3. Private PC cannot read hospital records.
4. Private physician newly retired; patient have problem find a new person he can trust.
5. Best practice: admitting ward nurse should have used web-care. Extra important to private PCs.
6. From the artifacts not possible to learn about nursing information and about arrangements for going home. Don’t know if the patient received a printed copy of e-prescriptions.
7. Guidelines from the National Board of Health and welfare (2008) to prevent medication errors in handovers are available. Misses here: No medical discharge report sent? Primary care not informed; when informed by patient's wife, they didn't consider medical changes as shown by patient and AHC. Neither did the patient/wife get counseling. New policy: hospital physicians can’t book X-rays to be followed-up by PC.
8. Discharge nurse should have used web-care and nursing discharge report.
9. The follow-up on the patients lung function was not scheduled until much later.
10. AHC performs own follow-up through electronic notes the day after discharge - patient feels better and is satisfied with medication changes.
## APPENDIX F
### HANDOVER QUALITY ASSURANCE REPORT

<table>
<thead>
<tr>
<th></th>
<th>ITALY</th>
<th>NETHERLANDS</th>
<th>POLAND</th>
<th>SPAIN</th>
<th>SWEDEN</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. How were the data collected?</td>
<td>Structured interviews, focus groups, process mapping, document collection for artefact analysis – each conducted in the country-specific setting</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Could the evidence (fieldwork notes, interview transcripts, recordings, documentary analysis, etc.) be inspected independently by others?</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>3. How were themes and concepts identified from the data?</td>
<td>For the interviews and focus groups, themes were identified by a multi-stage process. Following initial interviews, each coding team identified several themes that were emerging from the data. At the HANDOVER meeting in Barcelona, the coding team developed a “consensus list of codes”. These codes were then developed into a codebook which was used for subsequent coding of all the data. Conference calls with the coding team were held to further discuss potential changes to the codebook as potential themes arose during the coding process.</td>
<td></td>
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</tr>
<tr>
<td>4. Who conducted the interview, focus group, process mapping, and artefact analysis?</td>
<td><strong>Interviews:</strong> Conducted by one researcher and one member of the hospital staff.  <strong>Focus groups:</strong></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td><strong>Interviews:</strong> Conducted by one of two trained interviewers – one a general practitioner and one organizational</td>
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<tr>
<td></td>
<td><strong>Interviews:</strong> All interviews were performed by two trained interviewers from professional qualitative research</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td><strong>Interviews:</strong> Interviews were performed by two trained interviewers, one physician in residency and one linguist and</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Interviews:</strong> Conducted by one of two trained interviewers, one nurse and one medical social worker, both</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deliverable D3</td>
<td>Conducted by one researcher. <strong>Process mapping:</strong> Conducted by one researcher and one hospital physician. <strong>Artefact analysis:</strong> conducted by one researcher and one hospital physician.</td>
<td>sociologist. <strong>Focus groups:</strong> Conducted by one researcher. <strong>Process mapping:</strong> Conducted by one researcher and one hospital physician. <strong>Artefact analysis:</strong> conducted by one researcher and one hospital physician.</td>
<td>company. <strong>Focus groups:</strong> Conducted by one nurse and one GP researcher. <strong>Process mapping:</strong> Conducted by an experienced trainer in patient safety, with a background in nursing, accompanied by the two researchers who conducted the individual interviews. <strong>Artefact analysis:</strong> Conducted by one nurse and one GP researcher. <strong>Process mapping:</strong> Conducted by a moderator with the same background as the focus group participants (except for patient focus group). Accompanied by 2 researchers. <strong>Artefact analysis:</strong> conducted by one nurse and one GP researcher. <strong>Process mapping:</strong> Conducted by an experienced trainer in patient safety, with a background in nursing, accompanied by the two researchers who conducted the individual interviews. <strong>Artefact analysis:</strong> Conducted by one nurse and one GP researcher.</td>
<td>communication specialist with a background in nursing, both familiar with hospital care. <strong>Focus groups:</strong> All focus groups were conducted by the same moderator who had substantial experience in this field of research. Two members of the research team alternated in participating in the focus groups as observers and passed prompts, if required, to the moderator. <strong>Process mapping:</strong> Remaining question: Who conducted the process mapping exercise? <strong>Artefact analysis:</strong> Documents/artefacts from the patient’s hospital stay were collected at inclusion of each patient and from primary care after the last interview.</td>
<td>familiar with emergency care. <strong>Focus groups:</strong> Three researchers alternated in conducting focus group interviews – each group led by one trained moderator and one co-worker. <strong>Process mapping:</strong> Process mapping was conducted by two researchers, of which one is well-experienced with the method. <strong>Artefact analysis:</strong> Documents/artefacts from the patient’s hospital stay were collected at inclusion of each patient and from primary care after the last interview.</td>
</tr>
</tbody>
</table>
researchers and consulted with Handover Hospital Coordinator. from the patient’s hospital stay were collected on two patients, which were identified through the patient interviews. Two researchers participated compiling the artefacts for analysis and triangulation. Two project nurses cooperated with the researchers in compiling the artefacts for analysis and triangulation. This analysis was performed by three researchers and discussed in the project group.

<table>
<thead>
<tr>
<th>5. Was the analysis repeated by more than one researcher to ensure reliability?</th>
<th>Yes</th>
<th>Yes</th>
<th>Yes</th>
<th>Yes</th>
<th>Yes</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>6. How were participants selected? e.g. purposive, convenience, consecutive, snowball</th>
<th>Patent-related inclusion criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;18 years of age</td>
<td>&gt;18 years of age</td>
</tr>
<tr>
<td>Patient admitted to emergency room</td>
<td>If patient had slight mental problems, to answer questions, the interview was only</td>
</tr>
<tr>
<td></td>
<td>&gt;18 years of age</td>
</tr>
<tr>
<td></td>
<td>age ≥ 60</td>
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<tr>
<td></td>
<td>with many multiple co-morbidities and poly pharmacy (more than 6 drugs prescribed at)</td>
</tr>
<tr>
<td></td>
<td>??</td>
</tr>
<tr>
<td></td>
<td>&gt;18 years of age</td>
</tr>
<tr>
<td></td>
<td>If living at a nursing home, only within a geographically specified area</td>
</tr>
<tr>
<td>conducted when a representative (family member) was available</td>
<td>discharge). inhabitants of the near by districts of Krakow admitted to General Surgery or Internal Disease Depts of two hospitals located in Krakow: the Good Brothers’ Hospital and the Specialist Hospital of S. Zeromski.</td>
</tr>
<tr>
<td>--------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Patient admitted to one academic hospital (x) or to one middle-sized hospital (y) in regional area</td>
<td></td>
</tr>
<tr>
<td>Patient discharged from internal medicine, pulmonary diseases, cardiology or (vascular) surgical wards</td>
<td></td>
</tr>
<tr>
<td>Sampling aimed at equal numbers of the different hospital settings (x and y) and wards.</td>
<td></td>
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</tbody>
</table>

**Professional inclusion criteria**

- Sampling in order to get representation of seniors and juniors, and equal numbers of nurses vs physicians (when possible)

<table>
<thead>
<tr>
<th>Nurses and physicians from emergency rooms</th>
<th>Nurses and physicians from internal medicine,</th>
<th>Doctors and nurses from General Surgery or Internal</th>
<th>??</th>
<th>Nurses and physicians from</th>
</tr>
</thead>
</table>

**Table:**

- **Header row:**
  - Nurses and physicians from emergency rooms
  - Nurses and physicians from internal medicine
  - Doctors and nurses from General Surgery or Internal
  - ??
  - Nurses and physicians from

---

**Notes:**

- Deliverable D3
- HANDOVER – 2008 – 223409
| and emergency wards | pulmonary diseases, cardiology or (vascular) surgical wards, at the academic hospital (x) or middle-size hospital (y) | Disease Depts of two hospitals located in Krakow: the Good Brothers’ Hospital and the Specialist Hospital of S. Zeromski., whose patients have been previously recruited patients - respondents community nurses and general practitioners | primary care Nurses and physicians from emergency rooms and emergency wards |
| Deliverable D3 |
| Nurses and physicians from primary care and hospital wards |
| Primary care physicians |

7. Method of approach - How were participants approached? *e.g. face-to-face, telephone, mail, email*

<p>| Patient Interviews: Patients approached with oral information about the study. If patient agreed to participate, a letter sent to schedule interview Provider Interviews? Interviews with hospital physicians and one nurse, |
| Patient Interviews: Patients from internal and surgical wards were approached with oral and written information about the study by the interviewers, the day of or the day before discharge. If the patient or a representative family member agreed to |
| Patient Interviews: Target Patients were recruited by Handover Hospital Coordinators during their hospital stay (on the day of discharge) and asked to confirm in writing their participation in the study interview, |
| Patient Interviews: Target patients were approached with oral and written information about the study by a project nurse on the day of discharge from the emergency ward. If the patient agreed to participate, he/she was told that he/she would receive a letter and a |</p>
<table>
<thead>
<tr>
<th>Deliverable D3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Process Mapping</strong>&lt;br&gt;The target participants were recruited from ED nurse, general practitioners, hospital nurses, responsible for admission or discharge, were scheduled as soon as possible by one of the two interviewers at a location suitable for the interviewee.</td>
</tr>
<tr>
<td>Deliverable D3</td>
</tr>
<tr>
<td>----------------</td>
</tr>
<tr>
<td>hospital physicians and medical secretary.</td>
</tr>
<tr>
<td>the already involved wards, by mail, phone or directly approached. Patients/relatives (who met the inclusion criteria) were approached at the wards by one of the researchers. A patient representative was approached by phone. PC physicians were recruited by phone and mail. Purposive sampling was partly used because of some expertise in handover issues.</td>
</tr>
<tr>
<td>the phone call, when date of interview was scheduled and conditions for interview were specified. Provider Interviews: Hospital medical professionals (doctors and nurses, whose patients have been previously recruited) were recruited by the Handover Hospital Coordinator and asked to participate in the study interview. Most of doctors respondents admitted the patient, only two participated in the discharge. Professionals were scheduled for interviews the soonest after patient discharge, at a suitable location.</td>
</tr>
<tr>
<td>member (hospital physician and/or nurse) was scheduled as soon as possible by one of the two interviewers at a location suitable for the interviewee.</td>
</tr>
<tr>
<td>Focus Groups: Four groups with 5-6 participants each were interviewed, each profession separately: hospital physicians, hospital nurses, general practitioners, primary care/community nurses. A fifth focus groups was held with patients; however, despite various attempts only three patients the group was thereafter scheduled.</td>
</tr>
<tr>
<td>The community nurses were invited by help of the regional Center for Family and Community Medicine. An information letter with the scheduled time was send to the eight nurses who were willing to participate.</td>
</tr>
<tr>
<td>The GPs were recruited by help of the managers of five primary care centers. Eight general practitioners, all from the same primary care center, participated in the focus group.</td>
</tr>
<tr>
<td>One process map group has been conducted at the academic hospital. Two primary care/community nurses, two general</td>
</tr>
<tr>
<td>was thereafter scheduled.</td>
</tr>
<tr>
<td>Deliverable D3</td>
</tr>
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<td>---</td>
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</tbody>
</table>
**Focus Groups:**
Doctors and nurses from hospital and PC level were recruited by NCQA researcher via phone calls; the respondents approached had not less than 10 years of work experience, this including handover (a purposive sampling method was used for recruitment).

Patients were recruited by the moderators with snowball methodology. After the initial recruitment, a phone call was made to information director, one informatics, one social worker, one cultural mediator, and two link nurses (one from primary care and one from hospital care).

In the second hospital, the process mapping group was constituted of: two primary care nurses, two general practitioner, one medical secretary from primary care and one medical secretary from the hospital, two hospital nurses, the hospital-primary care coordinator, participated. The hospital nurses, physicians and the medical secretary were recruited face-to-face at the hospital by the moderators. A few community nurses and general practitioners were invited to the activity after being interviewed. When the meeting was scheduled an information letter was sent out.
verify, whether they comply to the criteria. The patient criteria involved a hospital stay within the last 6 months (1 group—internal disease patients; 2 group—surgical patients); communicative skills; consent to participate in the focus group interview.

**Process Mapping**

Participation in process mapping focus groups was as follows: 10 patients (5 in each patient focus group), 4 hospital physicians, 7 hospital nurses, 4 GPs and 7 primary care/community two hospital nurses and two specialists (from a medical and surgical speciality).

Remaining questions: How were the participants approached/recruited?
Each of the six focus groups developed two process maps for handover: idealistic and realistic. The process map included patient journey from PC level to the post hospital visit in PC practice.

The recruitment for process mapping focus groups was identical with the recruitment for focus groups.

### Sample size

- How many participants were in the study?
- How many people refused to participate or dropped out?

See Tables 1 – 4 in Chapter 3, Methods

### Interview guide

<table>
<thead>
<tr>
<th></th>
<th>Were questions, prompts, guides provided by the authors?</th>
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</thead>
<tbody>
<tr>
<td>1</td>
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### Deliverable D3

#### b. Was it pilot tested?

<table>
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<tr>
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<th>Yes</th>
<th>Yes</th>
<th>Yes</th>
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<tbody>
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<td>Pilot interviews were performed in order to allow the clinical staff members of the research group to get familiar with semi-structured interview technique</td>
<td>No, due to experience of the researchers we did not conducted pilot interviews.</td>
<td>Pilot interviews were initially performed and assessed by the local research group.</td>
<td>Yes, pilot interviews were initially performed and assessed by the local research group.</td>
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#### c. Is it being made available?

<table>
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#### 10. Focus group guide

#### a. Were questions, prompts, guides provided by the authors?

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#### b. Was it pilot tested?

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<td>No piloting, as we have used the professionals certified in qualitative research</td>
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#### c. Is it being made available?

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#### 11. Audio/visual recording - Did the research use audio

<table>
<thead>
<tr>
<th>Audio recording of interviews, focus groups, and process mapping.</th>
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**Handover** – 2008 - 223409

61
<table>
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<th>Question</th>
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