

Thursday, September 15
A19 – Convention Hall C
14:15 – 15:45

Impact of Hospital Nurse Workforce Factors on Quality of Care and Nurse Well-Being in 15 Countries: Results from the RN4CAST-study

WELCOME



Presenters



Prof. Dr. Walter Sermeus, PhD, FEANS, RN
Professor of Healthcare Management
Leuven University, Belgium
Project Coordinator RN4CAST



Prof. Dr. Linda Aiken, PhD, FAAN, RN
Director, Center for Health Outcomes and Policy Research
University of Pennsylvania, USA
Project Vice-coordinator RN4CAST



Prof. Dr. Liming You, PhD, RN
Professor and Dean, School of Nursing
Sun Yat-sen University, Guangzhou, China



Prof. Dr. Hester Klopper, PhD, RN, MBA, FANSA
Professor and Dean, School of Nursing Science
North-West University, Potchefstroom, South Africa

RN4CAST ISQUA HONG KONG SESSION

- **Overview of the motivation, organization, and design of RN4CAST**
Walter Sermeus, Leuven University, Belgium
- **Findings and recommendations from Europe and USA**
Linda Aiken, U. Pennsylvania, USA
- **Findings and recommendations from China**
Liming You, Sun Yat-Sen University, China
- **Findings and recommendations from South-Africa**
Hester Klopper, North-West University, South-Africa
- **General discussion & implications for practice & policy**
All, moderated by Walter Sermeus, Leuven University, Belgium

RN4CAST RATIONALE

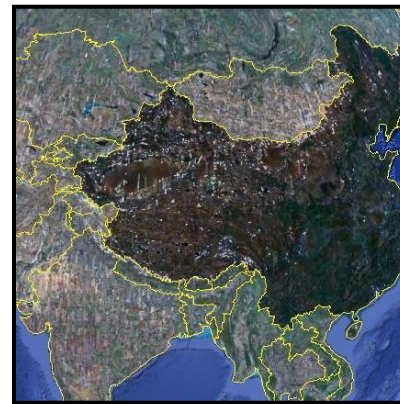
- Worldwide numeric, skill, and geographic imbalances in healthcare and nursing workforce.
- The workforce crisis is likely to increasingly affect quality and safety of healthcare and health system performance.
- Nursing workforce planning and forecasting efforts...
 - have a poor record of accurately predicting future nursing workforce needs and of informing policy interventions that avoid cyclical shortages.
 - don't take into account the dynamics between nurse-to-patient ratios, skill mix, nurse education level, and nursing work environment on one hand and nurse wellbeing and patient outcomes on the other hand.

The RN4CAST project aims innovative forecasting methods by addressing not only volumes, but quality of nursing staff as well as quality of patient care.

7th Framework Programme for Research and Technological Development



- 'RN4CAST: nurse forecasting in Europe': €3 million funding for 2009-2011
 - Health theme 3: Optimising the delivery of health care
 - 16 partners: 12 European countries, USA, China, South-Africa, Botswana
 - Co-ordination: Leuven University (W. Sermeus), U. Pennsylvania (L. Aiken)



RN4CAST DESIGN

- Multicountry, multilevel, cross-sectional design to obtain important unmeasured factors in forecasting models, collected at the hospital, nursing unit, and individual nurse and patient level:
 - Nurse survey
 - Patient survey
 - Hospital survey
 - Hospital Discharge data
- Setting
 - At least 30 general acute hospitals in each European country.
 - At least 2 general surgical and internal medicine wards in each hospital.

Nurse Survey

- The nursing work environment
 - Factors influencing the nursing work environment, job satisfaction, intention to leave
- Quality and safety
 - Incidents, quality nursing unit and hospital
- Most recent shift
 - Number of patients cared for, non-nursing tasks,...
- Characteristics of nurses
 - Age, gender, migration, experience

Patient Survey

- On one day
- Experiences
 - Care from nurses (respect,...)
 - Care from physicians (respect,...)
 - Hospital environment (cleanliness, calmness)
 - Pain management, information

Hospital Survey

- Type
- Patient activity
- Personnel deployment (nurses, physicians): number and qualification
- Personnel inflow and outflow
- Organisation and management of the nursing workforce

Hospital discharge data

- ❑ Routinely collected hospital discharge data (i.e. hospital discharge datasets containing information about patient demographics, medical diagnoses & interventions
 - ❑ ICD-9, ICD-10
 - ❑ length-of-stay
 - ❑ discharge status (e.g. in-hospital mortality)
- ❑ Selection of adult medical/surgical patients
- ❑ Outcomes will include mortality, failure-to-rescue and adverse events (e.g. pressure ulcers, nosocomial infections)

SAMPLE

USA (2006-2008) - 4 states
Pennsylvania, California, New Jersey, Florida



617 hospitals
27509 nurses

Millions of patients
In 430 hospitals

CHINA (2008-2010) – 9 Sites
6 provinces, 2 municipalities, 1 autonomous region



181 hospitals
9698 nurses

6494 patients
In 181 hospitals

EUROPE (2009-2010) - 12 countries
Belgium, Finland, Germany, Greece, Ireland, Netherlands, Norway, Spain, Switzerland, UK



486 hospitals
33541 nurses

11318 patients
In 210 hospitals

1364 HOSPITALS
75051 NURSES
**LARGEST NURSING
WORKFORCE STUDY**

South Africa (2009-2010) – 6 Provinces
Free State, North-West, Free State, KwaZulu-Natal, Eastern Cape, Western Cape



62 hospitals
4657 nurses

RN4CAST HOSPITAL DISCHARGE DATA

Country	Diagnosis	Procedure	Year	n records
Belgium	ICD-9-CM	ICD-9-CM	2007	911,658
Finland	ICD-10	Local based on NCSP	2008	733,243
England	ICD-10	OPCS	2009	1,401,613
Germany	ICD-10-GM	OPS 2010	2009	2,392,474
Ireland	ICD-10	ICD10 AM	2009	472,609
Netherlands	ICD-9-CM	ICD 9	2009	389,099
Norway	ICD-10	NCSP	2009	741,314
Poland	ICD-10	ICD-9	2009	1,099,891
Spain	ICD-9-CM	ICD-9-CM	2009	739,546

PROGRESS OF RN4CAST

EU PROPOSAL

PROTOCOL
FINALISATION

DATA
COLLECTION

DATA ANALYSIS AND POLICY IMPLICATIONS

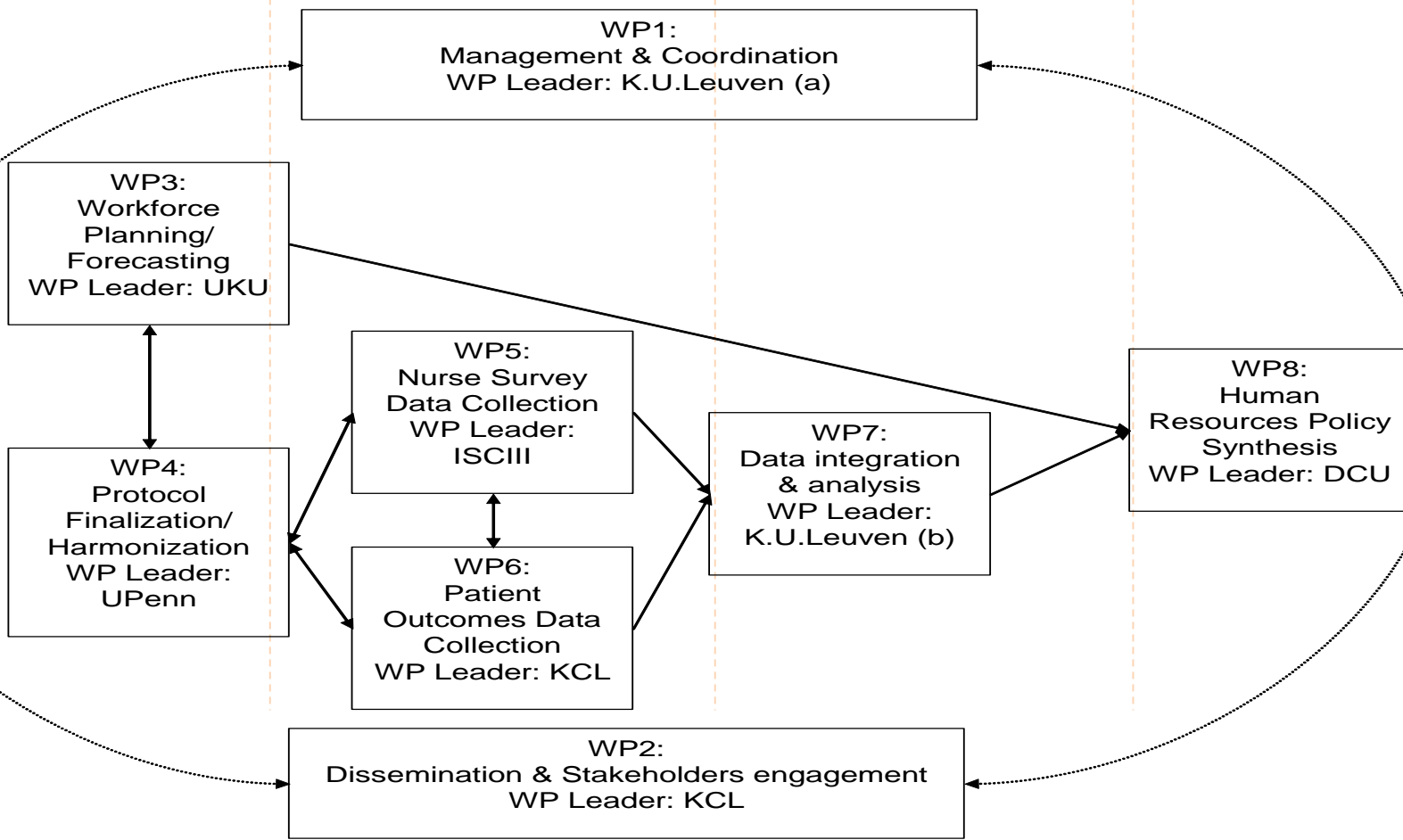
RN4CAST STUDY PROGRESS

2007-2008

2009

2010

2011



INFO

Website: WWW.RN4CAST.EU

Contact:

walter.sermeus@med.kuleuven.be

laiken@nursing.upenn.edu

youlm@mail.sysu.edu.cn

Hester.Klopper@nwu.ac.za



SERMEUS ET AL. (2011). NURSE FORECASTING IN EUROPE (RN4CAST): RATIONALE, DESIGN AND METHODOLOGY . BMC NURSING, 10(1):6 **OPEN ACCESS AT BIOMEDCENTRAL.COM**

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RN4CAST UPCOMING EVENTS

- **Joint conference FP7- funded projects: RN4CAST, MoHProf, and HealthPROMeTHEUS**

7-9 December 2011, Brussels, Belgium

- **International RN4CAST conference: Nursing workforce and quality of care in European hospitals**

14 September 2012, Basel, Switzerland

info: www.nursing.unibas.ch/rn4cast

