



Nursing Informatics

Adoption of Health Informatics Standard

Dr Mohd Azrin Zubir

Content

Chapter 1

Chapter 2

Chapter 3



Chapter 1

The Importance of

Nurses in Healthcare

Service

Nursing contributes 44 percent of direct patient costs (inpatient)

John M. Welton

Medical University of South Carolina, College of Nursing, Charleston, South Carolina

Health Affairs, 26, no. 3 (2007): 900

doi: 10.1377/hlthaff.26.3.900

© 2007 by [Project HOPE](#)

Nursing makes up 42.9 percent of all hospital labour

John M. Welton

Medical University of South Carolina, College of Nursing, Charleston, South Carolina

In Malaysia, nurses comprise 2– 3% of the female workforce

A critical review of the nursing shortage
in Malaysia

T. Barnett et al 2010 The Authors. Journal compilation © 2010 International Council of Nurses

54,208

Registered Nurse (RN)

ref: Ministry of Health Malaysia Health Fact 2008

1:512

RN to Population

ref: Ministry of Health Malaysia Health Fact 2008

18,643

Community Nurse

ref: Ministry of Health Malaysia Health Fact 2008

1:1,487

Community Nurse to Population

ref: Ministry of Health Malaysia Health Fact 2008

1:200

The Target

A critical review of the nursing shortage
in Malaysia

T. Barnett et al 2010 The Authors. Journal compilation © 2010 International Council of Nurses

76

Nursing Colleges

ref: 2006 MOHE

174,000

by 2020



Conclusion 1

Nursing Care is Vital and
Important in Healthcare
Delivery



Chapter 2

Nursing and Informatics

1850s

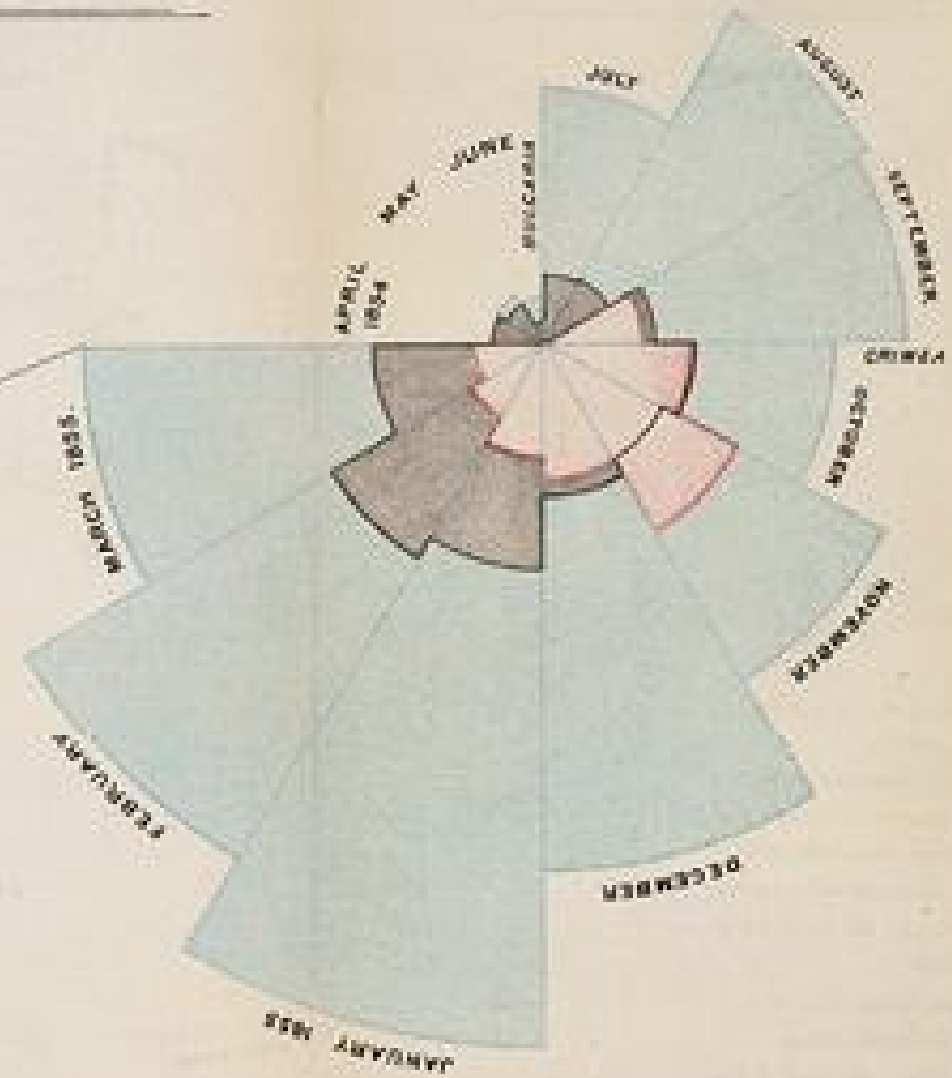
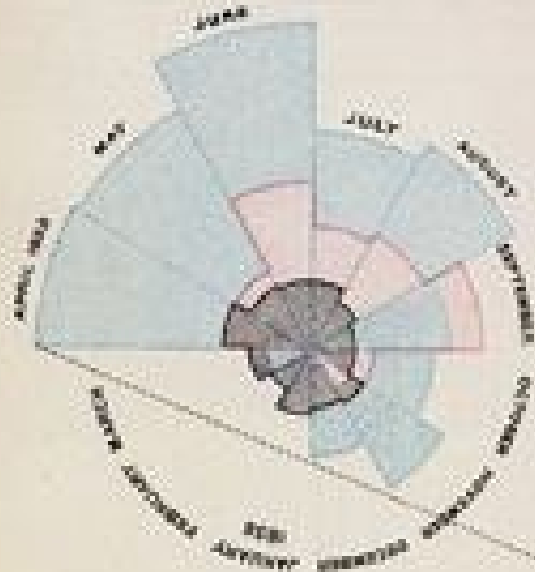


Florence Nightingale

Nurse

Writer

Statistician



The arms of the blue, red, & black wedges are each measured from the centre as the common centre.

The blue wedges measured from the centre of the circle represent area for area the deaths from Preventable or Mitigable Zymotic diseases, the red wedges measured from the centre the deaths from wounds & the black wedges measured from the centre the deaths from all other causes.

The black line across the red triangle in Nov^r 1854 marks the boundary of the deaths from all other causes during the month.

In October 1854, & April 1855 the black area overlaps with the red, in January & February 1855 the blue overlaps with the black.

The entire areas may be compared by following the blue, the red & the black lines enclosing them.

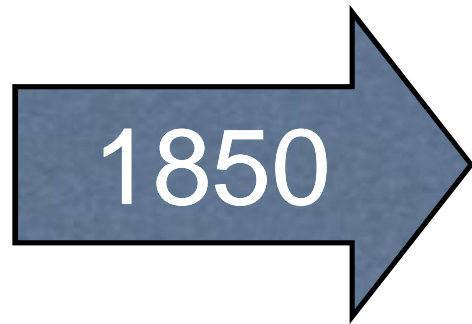
Revised & Enlarged Edition

Nightingale Rose Diagram

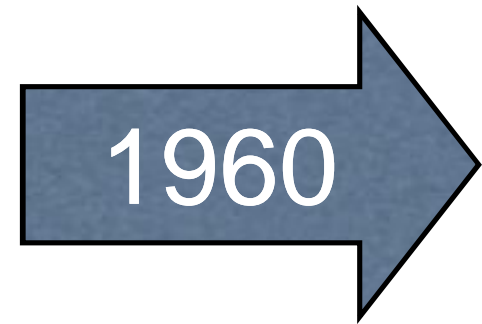
a true pioneer in the graphical representation of statistics

INFORMATICIAN

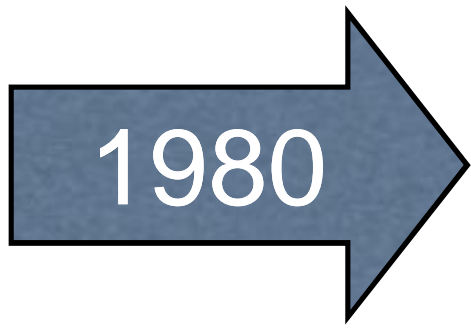
**informatics is not new
in nursing profession**



Florence Nightingale
polar graph
medical documentation

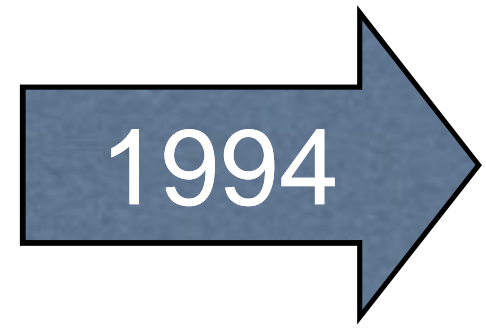


The birth of
Informatique Medical
Medical Informatics



Evolution of
Medical Informatics to
Health Informatics

evolution in healthcare



emergence of
Nursing Informatics
(a branch from healthcare
informatics)

Recognised as a
nursing specialties
in the US

Nursing informatics is a specialty that integrates nursing science, computer science, and information science to manage and communicate data, information, and knowledge in nursing practice.

Nursing informatics facilitates the integration of data, information, and knowledge to support patients, nurses, and other providers in their decision making in all roles and settings. This support is accomplished through the use of information structures, information processes, and information technology.



**Nursing
Science**

**Computer
Science**

**Information
Science**

Nursing
Science

Computer
Science

Nursing
Informatics

Information
Science

Departments

Search All Departments

nursing informatics

GO

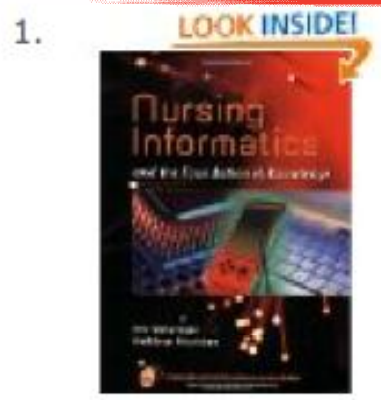
1 Cart

'nursing informatics'

Showing 1 - 16 of 639 Results

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mania!
create
your list
HERE
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GO!



1. **Nursing Informatics: A Foundation of Knowledge** by Dee (2008)

Buy new: \$59.95 **\$49.20**

37 new from \$25.99 41 used from \$23.98

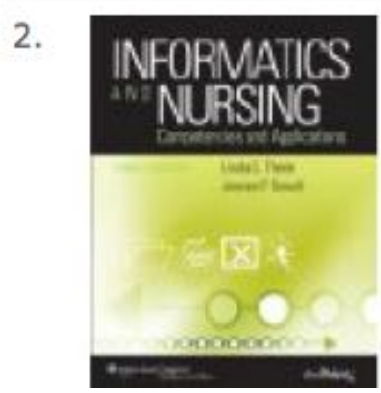
Get it by **Wednesday, June 23** if you order in the next **5 hours** and

★★★★★ (3) Prime

Excerpt - Front Matter: "... **Nursing Informatics** and the Foundation of Knowledge, FACCE, ..."

Surprise me! See a random page in this book.

Books: See all 585 items



2. **Informatics and Nursing: Competencies and Applications** by Sewell (**Paperback** - Apr. 1, 2009)

Buy new: \$50.95 **\$41.27**

23 new from \$36.02 17 used from \$40.00

Get it by **Wednesday, June 23** if you order in the next **3 hours** and

★★★★★ (1) Prime

639

Nursing contribution in IT

- Key professionals in health Informatics
(whom I met and learned from them)

Marion J Ball



Professor at John Hopkins

Board Member at Institute of Medicine

Former President of International
Medical Informatics Association (IMIA)

Nancy Lorenzi



Assistant Vice-Chancellor for Health Affairs
and Professor of Biomedical Informatics,
Vanderbilt University Medical Center

Fellow of the American College of Medical Informatics

Former President of IMIA

Tom Beale



Introduced Business Process
Reengineering
Methodology in NHS and KKM

Successful Consultant in Canada

t communication with health care team 26
family members

assessment, treatment and education 22

mentation 2

Administration of Medication 1

Shopping for hospital supplies, equipment 5

Impact in nursing care

Research: 10-bed surgical intensive care unit
(ICU) at a Veterans Affairs Medical Center
Minneapolis

study the impact of the system on the percentage
of time nurses spent on documentation and total
patient care tasks

They found that the percentage of time spent on documentation decreased from 35.1 to 24.2 percent ($p = .025$) after the ICU information system was installed and,

although not that significant, the percentage of time providing direct patient care increased from 31.3 to 40.1 percent ($p = .085$).

Almost half of the time saved on documentation was instead spent on

patient assessment,

a direct patient-care task,

which increased from 4.0 to 9.4 percent of total nurse time ($p=.001$)



Chapter 3

The Importance of Nursing Informatics in Malaysia

Importance of Nursing Informatics

Implementation of Hospital
and/or
Clinic Information System

Importance of Nursing Informatics

It changes the way we
execute our work process



Importance of Nursing Informatics

Someone from nursing background will have to provide the nursing requirement in the information system



Importance of Nursing Informatics

Data that nurses use/capture?

Information that nurses
will analyse or report?

Nursing workflow?



eg. Hospital Information System

S Patient Management System

R Electronic Medical Record

Nursing Record

Nursing Orders

eMAR

Patient Assessment

Nursing Diagnosis

Nursing Care
Plan

Nursing Outcomes

Medication Administration Record

eg. Hospital Information System



Standardisation
of Data &
Forms

Patient Assessment

Nursing Diagnosis

Nursing Care

Plan

Nursing Outcome

eg. Hospital Information System



Standardisation
Data &
Forms

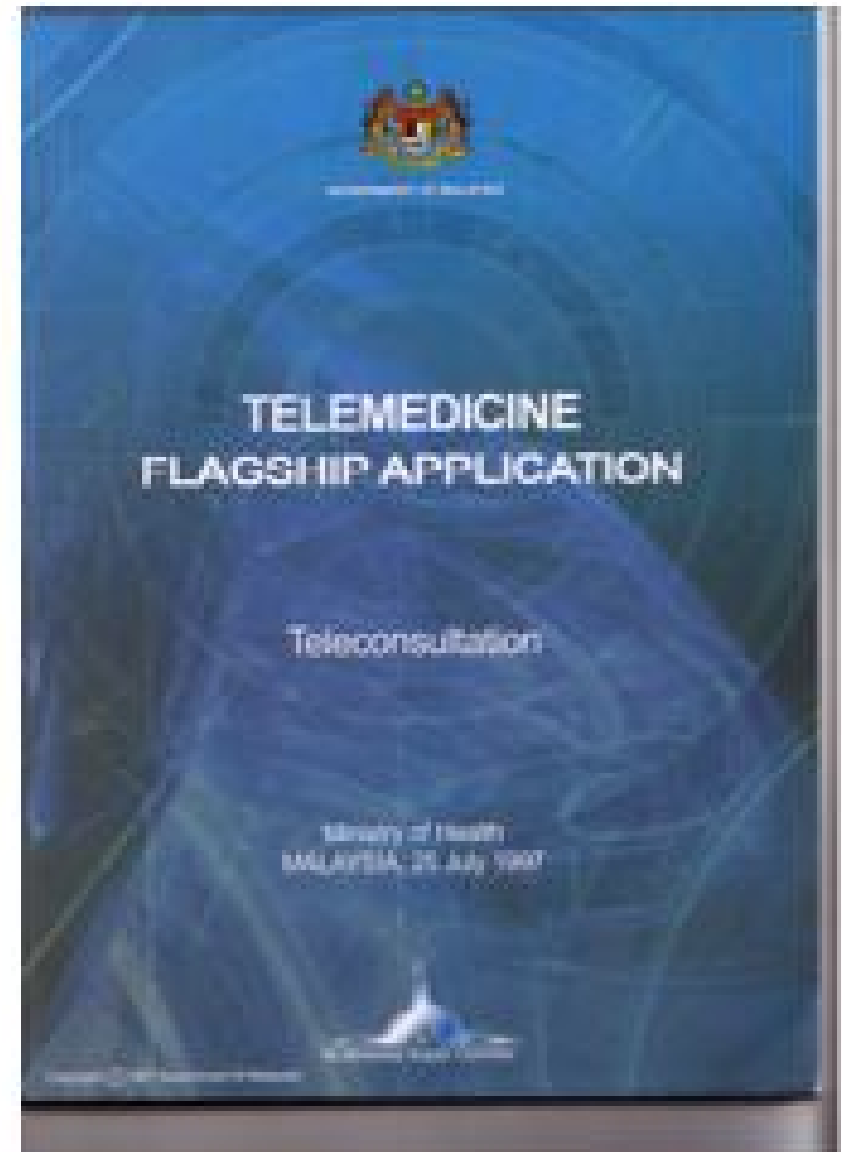
Integration
Requirement
with other
system

Patient Assessment
Nursing Diagnosis
Nursing Care
Plan
Nursing Outcomes

Telehealth Blueprint

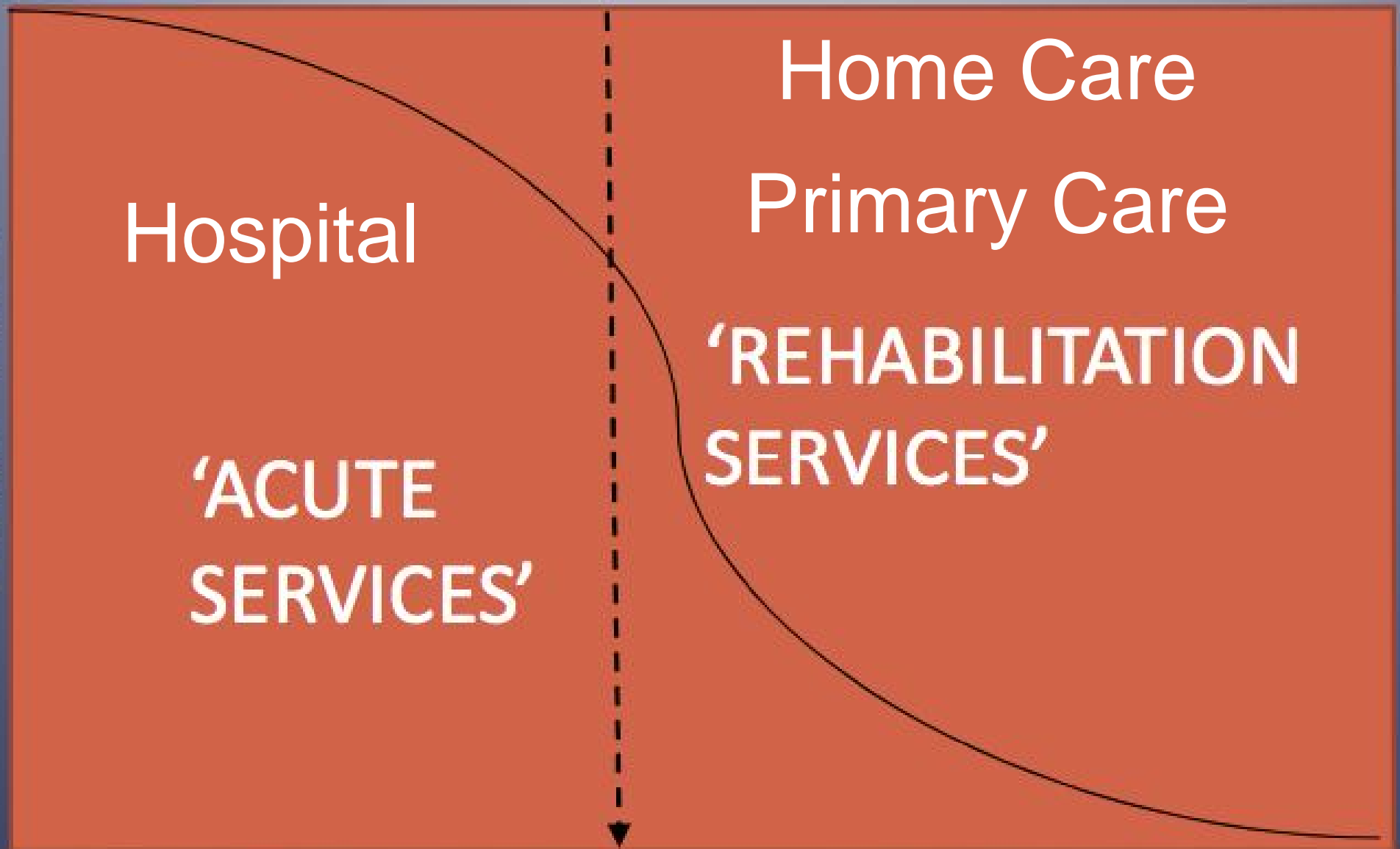
Published in 1997

- Health System of the Future
- The healthcare services shall be supported by telecommunications, information and multimedia technologies
- It describes the National Health IT Framework



CHANGE OF CARE TYPE

CARE TYPE



Hospital

'ACUTE
SERVICES'

Home Care

Primary Care

'REHABILITATION
SERVICES'

DAY OF EPISODE OF CARE OR SPELL

Ageing Population

1.4 million

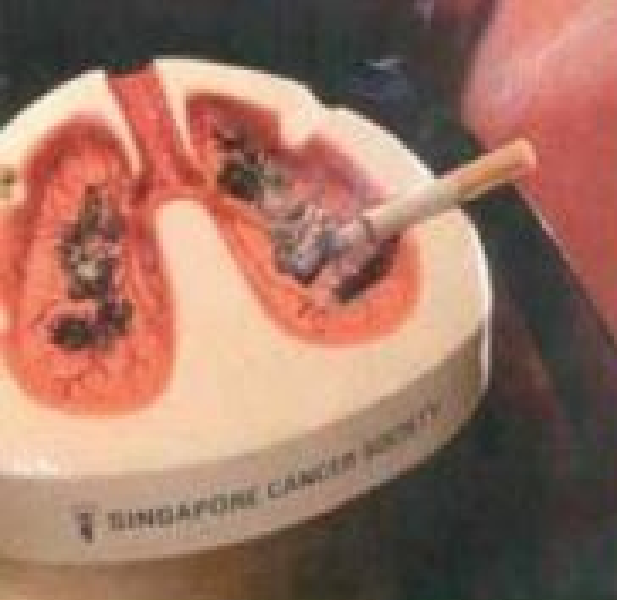
3 to 4 million in 2020

Increasing Cost

S: Average Cost per inpatient bed day \$ 570

UK	% of Expenditure	% of Events	Approximate Cost per Event
Inpatients	54%	3%	€2,500
DayCases	6%	2%	€475
Outpatients	13%	13%	€115
ER	3%	3%	€85
Community	10%	25%	€45
GP	14%	54%	€30

Malaysia: average cost for a diabetic patients' admission in hospital was RM1951



3 risk factors -
smoking, poor diet, lack physical
activity

FOUR major chronic diseases -
heart, DM, lungs,
cancers

50 per cents

Disease Burden

10 Principal Causes of Death in MOH Hospitals

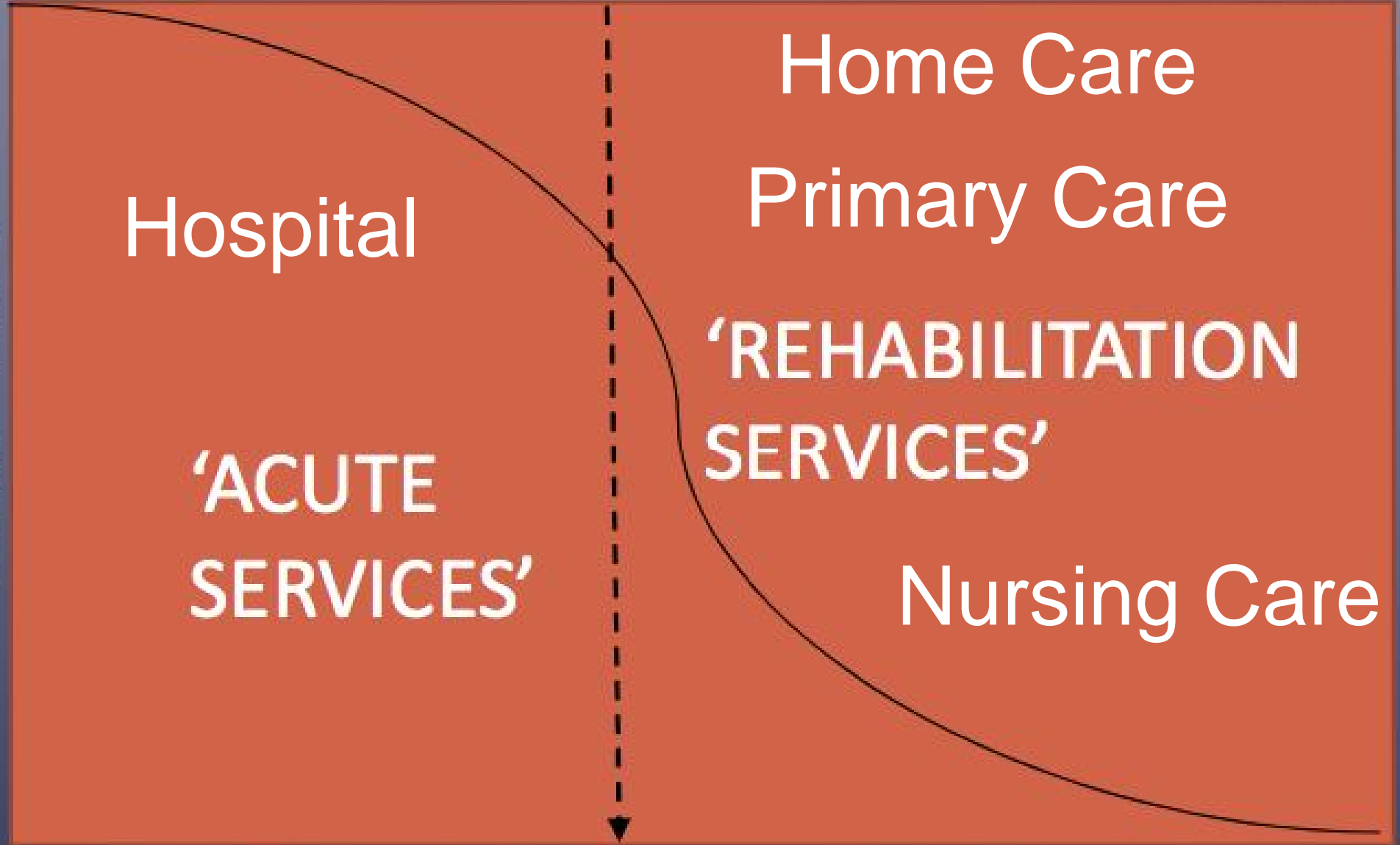
1.	Heart Diseases & Diseases of Pulmonary Circulation	16.54%
2.	Septicaemia	13.18%
3.	Malignant Neoplasms	11.21%
4.	Pneumonia	9.28%
5.	Cerebrovascular Diseases	8.65%

Healthcare of the Future

- The Vision Key Content
 - Patient empowerment (Prevention is better than cure)
 - Push for primary care
 - Equity
 - IT Projects in government
 - Myhealth portal & other Telehealth projects
 - Teleprimary care

CHANGE OF CARE TYPE

CARE TYPE



DAY OF EPISODE OF CARE OR SPELL

More Patients Need

ospital

information flow

Care at Home
near to home

uce Stay
Hospital

Nursing Care

Clinic Setting Homeo

H.I.S

uce Stay
Hospital

information flow

integration

Care at Home
near to home

Nursing Care

Clinic Setting Homeoc

use IT

use IT

H.I.S

information flow

Care at Home
near to home

integration

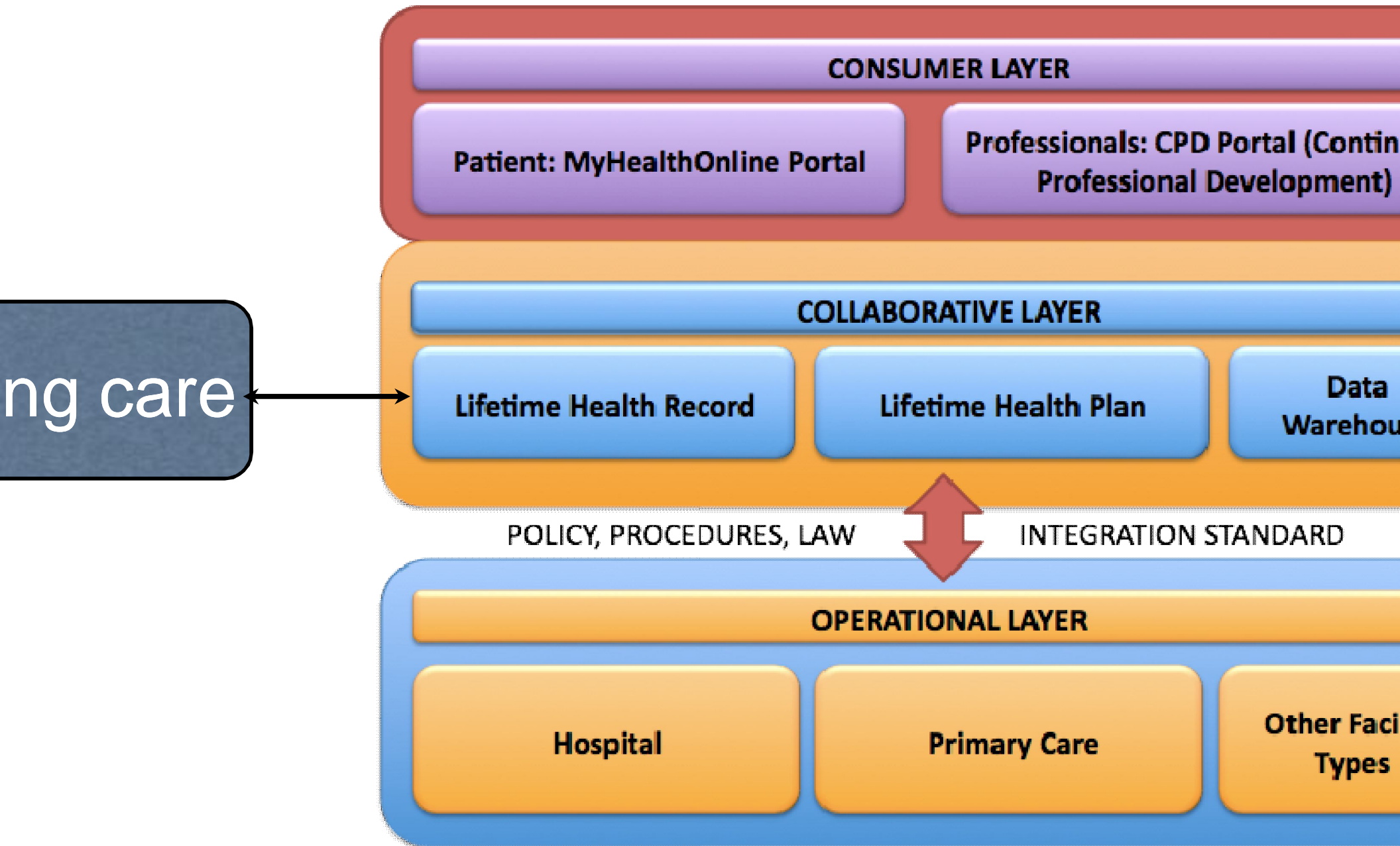
what data?

format?

how to transfer?

how nurse
can access info

Malaysia Health ICT Landscape



Integration Healthcare Enterprise



Patient Care Coordination

Patient Care Coordination Technical Framework

Comments and implementer feedback on all documents can be submitted to the c

Revision 5.0

2009-08-10

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Final Text

PCC Technical Framework Rev. 5.0 Final Text

Three IHE PCC Integration Profiles are specified as Final Text in Version 5.0 of the Sharing of Medical Summaries Integration Profile (XDS-MS), including Medical Summary Department Referral (EDR), and Exchange of Personal Health Record Content (XF

- [PCC Technical Framework Volume 1, Revision 5.0](#) - Revised 2009-08-10
- [PCC Technical Framework Volume 2, Revision 5.0](#) - Revised 2009-08-10

Supplements for Trial Implementation

The IHE Patient Care Coordination Technical Committee invites organizations to test the PCC Technical Framework for Trial Implementation. These trial implementations start in January 2010.

- [Antepartum Record \(APR\) Supplement](#) - Revised 2009-08-10
- [Care Management \(CM\)](#) - Published 2008-08-26
- [Content Modules Supplement](#) - Revised 2009-08-10
- [Emergency Department Encounter Summary \(EDES\)](#) - Revised 2009-08-10
- [EMS Transfer of Care \(ETC\)](#) - Revised 2009-08-10
- [Immunization Content \(IC\) Supplement](#) - Revised 2009-08-10
- [Labor and Delivery Record Supplement \(LDR\)](#) - Revised 2009-08-10
- [Patient Plan of Care \(PPOC\) Supplement](#) - Revised 2009-08-10
- [Query for Existing Data \(QED\)](#) - Published 2008-08-26
- [Request for Clinical Guidance \(RCG\)](#) - Revised 2009-08-10

Integration Healthcare Enterprise



Patient Care Coordination

nursing sub committees

nursing e-summaries

Nursing Informatics

it is needed

1:200

The Target

A critical review of the nursing shortage
in Malaysia

T. Barnett et al 2010 The Authors. Journal compilation © 2010 International Council of Nurses



Nursing Informatics

it is needed

a new career path

may provide a better working environment
for nurses to serve at rural areas

information technology

aim at meaningful use

st be driven by users/healthcare profession

information technology in healthcare

output driven

quantity

outcome
driven

quality

safety

Conclusion

- Feel free to join us in health informatics world
- we will be providing advance courses in nursing informatics

azrinmd@mpmsb.net

THANK YOU

