Employment of healthcare informatics system to enhance the cost-effectiveness in the management of the patients on ventilators

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## Background

• In 2002, a ventilator ward was established

 Centralise the management of patients on ventilators in general wards

- Provide specialised care to patients
  - Invasive mechanical ventilation
  - Non-invasive mechanical ventilation

## Scope of services

- Multidisciplinary care
  - ICU specialists
  - Respiratory specialists
  - Nursing staff

Standard weaning protocol

Comfort care for end-of-life patients

## Objectives of study

 To identify factors of successful weaning for patients on ventilators

To improve the quality of care of patients

To improve the cost-effectiveness

## Methodology

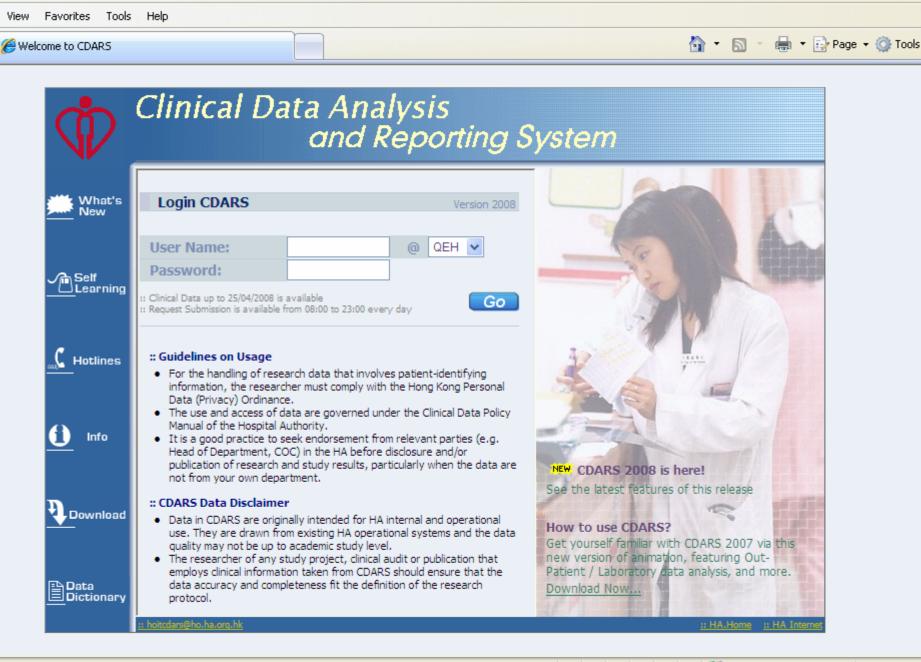
- Subjects
  - Patients admitted to the ventilator ward

- Period
  - From 1 January 2005 to 31 December 2007

## Methodology

- Data collected from CDARS
  - Demographic data
  - Diagnosis
  - Outcome
  - Risk factors

- Statistical method
  - Chi square test



http://cdars.home/

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Live Search

## Risk factors for analysis

- Age > 75 years
- Sex
- Cardiogenic shock
- Septic shock
- Myocardial infarction
- Chest infection
- Metastatic carcinoma

- DM
- COPD
- Chronic renal failure
- Liver failure
- stroke
- Ischemic heart disease

#### Results

- A total of 2677 patients
  - 1271 patients survived
  - 1406 patients died

- Average length of stay
  - Survived: 18.23 days
  - Died: 12.99 days

## Results

	Survived	Died	P
Age > 75	678	871	0.013
Cardiogenic shock	5	20	0.007
Septic shock	13	34	0.008
MI	118	178	0.015
Metastatic ca	4	16	0.016
Chest infection	335	578	<0.001
Stroke	128	263	<0.001

## Results

	Survived	Died	P
COPD	381	137	<0.001
DM	73	51	0.008
Male	518	580	0.540
Liver failure	4	10	0.169
CRF	42	49	0.884
IHD	146	145	0.266

#### Conclusion

- Multidisciplinary collaboration
  - Clinical vs IT

- Enhancement of services
  - Identify the factors of successful weaning by evidence based approach
  - Useful for selecting patients for intubation
  - Improve quality of care to patients
  - Improve the cost-effectiveness

#### Limitations

Retrospective approach

Completeness of data entry by doctors

#### **Future Direction**

 Standardization and optimization of clinical care based on local data of HA

 Adoption of such evidence based approach to other clinical services

#### • ICU

- Dr. PK Chan
- Dr. KF Hong
- Dr. KY Lai
- Dr. KW Au Yeung
- Dr. F Cheng

- Respiratory team
  - Dr. WM Chan
  - Dr. CK Ng
  - Dr. S Lee
  - Dr. WH O

- Nursing staff of ventilator ward
  - Ms WH Law
  - Ms HM Wong
  - Ms LP Sit
  - Mr HW Luk
  - Other supporting nurses

• IT specialists of CDARS team

# Thank you