Pediatric Intensive care
Soroka Medical center
Beer Sheva - Israel

PROSAFE International meeting 2011

Isaac Lazar MD

Austria
Hungary
Moldova
Slovenia
Romania
Croatia
Bosnia and Herzegovina
Serbia
Italy
Black Sea
Kosovo
Bulgaria
Montenegro
Macedonia (FYROM)
Albania
Tyrrhenian Sea
Greece
Turkey
Malta
Cyprus
Syria
Mediterranean Sea
Lebanon
Jordan
Israel
Libya
Egypt

Israel - Demographics

- Heterogeneous population
  - 7 million citizens - 10% over the age of 65
  - Diverse population:
    - 1 million new immigrants from former USSR
    - Immigrants from Ethiopia
    - ~ 20% minorities
    - Refugees from Darfur, Sudan, Eritrea
- Outcome Comparable to OECD
  - Life expectancy: M- 77.6 , W-81.8
  - Infant mortality - 5.1 per 1000 live births

Israel - Public Health Care System

- Equality of Access
  - Nationalized health system, comprehensive basket of services
  - Public financing by dedicated tax
- Freedom of choice
  - Freedom of choice among 4 Health Funds
  - Supplementary health insurance + private insurance
- Strong community based health care system
- Highly developed medical research facilities

SOROKA
MEDICAL CENTER

CLALIT

Soroka Medical Center

Israel
International boundary
District (meḥoz) boundary
National capital
District (meḥoz) center
Railroad
Divided highway
Other road
0 40 Kilometers
0 40 Miles
Lambert Conformal Conic Projection: SP 30N / 36N
Israel proclaimed Jerusalem as its capital in 1950, but the US, like nearly all other countries, maintains its Embassy in Tel Aviv.
The West Bank and Gaza Strip are Israeli-occupied with current status subject to the Israeli-Palestinian Interim Agreement – permanent status to be determined through further negotiation.
LEBANON
Tyre
Qiryat Shemona
GOLAN HEIGHTS (Israeli occupied)
Nahariyya
'Akko
Haifa
NORTHERN
Tiberias
Lake Tiberias
HAIFA
Nazareth
Hadera
Jenin
Netanya
Tulkarm
Jarash
CENTRAL
Nablus
Herzliyya
TEL AVIV
Tel Aviv-Yafo
WEST BANK
1994 Treaty Line
Bat Yam
Ram Allah
Amman
Rehovot
Ramla
Jericho
Ashdod
Jerusalem
Madaba
JERUSALEM
Ashqelon
Bethlehem
Mediterranean Sea
Qiryat Gat
Gaza
Hebron
GAZA STRIP
1950 Armistice Line
Khān Yūnis
1949 Armistice Line
Beersheva
Al Karak
SOUTHERN
Al 'Arish
Dimona
Zefa'
Aş Şafi
NEGEV
Bi'r Lahfan
Abū 'Ujaylah
Zin
'Ayn al Quşaymah
Mizpe Ramon
Bi'r Hasanah
Wadi al Arish
Ma'ān
EGYPT
SINAI
Al Kuntillah
Ra's an Naqb
An Nakhl
Yotvata
Elat
Tābā
Al 'Aqabah

Soroka Medical Center

- **Second largest hospital in Israel**
- **Covers 60% of Israel**
- **We take care of :**
  - **1,000,000 people throughout the Negev**
  - **400,000 children**
  - **IDF soldiers**
  - **Tourists**
  - **Humanitarian aid for Palestinians and refugees**
- **Central laboratories for region**
- **Largest Trauma Center**
- **Associated with BGU Faculty of Health Sciences**

Infrastructure

- Hospital beds - 1000
- Operating rooms: 18
- Emergency: 65 beds
- Delivery rooms: 17 (14000 annual deliveries)
- ICU: Surgical, Medical, Neurosurgical, CT ICU, CCICU, Neuro- ICU, Burn center, Pediatric ICU, Neonatal ICU

Emergency and Trauma

Affiliation with BGU

- The Joyce and Irving Goldman Medical School
- Medical School for International Health (collaboration with Columbia University)
- Nursing school
- Physical Therapy
- Paramedics
- Pharmacy
- Medical laboratory sciences
- MPH, MHA programs
- Master and PhD programs in basic medical sciences

Saban Pediatric Medical Center

Coffee Time

אזור סוגן

PERSOLIFE

PICU in ISRAEL

- Fourteen Pediatric dedicated ICU's
  - Six Major PICU (over 8 beds)
  - Two Pediatric designated CT-ICU
- Twenty seven active PICU specialists
  - Since 2002 – active PICU fellowship program
  - Almost all PICU specialists are Board accredited pediatricians with PICU training.

Israel
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Nazareth
Hadera
Jenin
Netanya
Tulkarm
Jarash
CENTRAL
Herzliyya
Nablus
TEL AVIV
WEST BANK
Tel Aviv-Yafo
Bat Yam
Ram Allah
Rehovot
Ramla
Amman
Ashdod
Jericho
Jerusalem
Madaba
Ashqelon
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1950 Armistice Line
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Al Karak
Al 'Arish
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Zefa'
Aş Şafi
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Mizpe Ramon
Bi'r Hasanah
Wadi al Arish
EGYPT
Ma'ān
SINAI
Al Kuntillah
Ra's an Naqb
An Nakhl
Yotvata
Elat
Tābā
Al 'Aqabah

Soroka PICU

Soroka PICU

- 8 approved bed space (active up to 12 beds)
- 4 active PICU attendings + pediatric resident in a non mandatory rotation.
- 28 PICU certified RN – BA, MA
- Ancillary staff: Social worker, Clinical Dietitian, Clinical pharmacist, PT/OT, Respiratory technician.

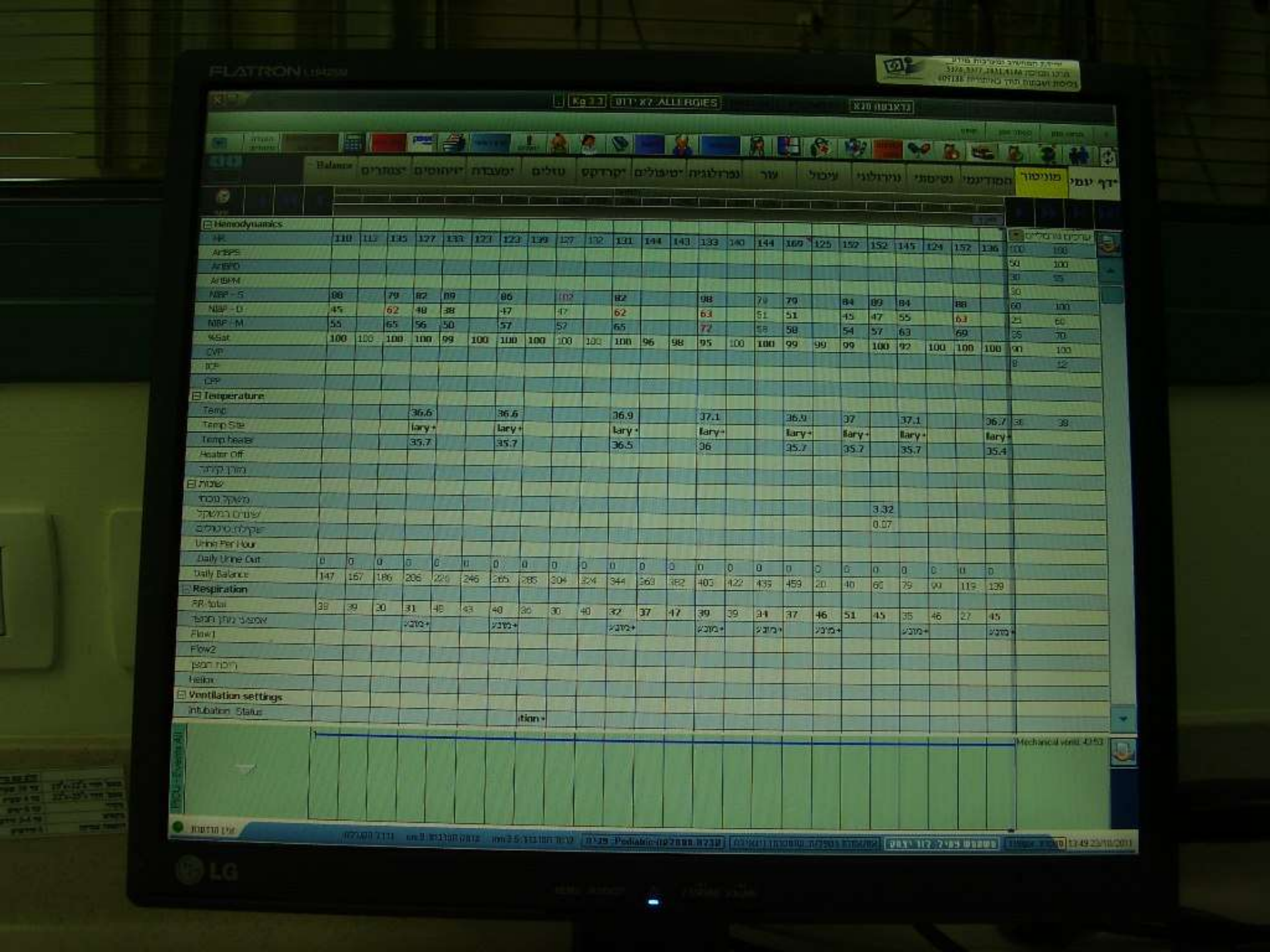
Soroka PICU

- About 500 admissions annually
- “Bread and Butter” PICU patients and “extra’s”
  - Trauma, Burns, Drowning, Environmental hazards
  - Envenominations and Intoxications
  - Infectious diseases – common and exotic
  - Hematology Oncology
  - Genetic and Metabolic Disorders
  - Congenital malformations
- Electronic Medical record system – iMDSoft

9
8
7

6
5

stryker


Balance
Hemodynamics
HR
ArtBPS
ArtBPD
ArtBPM
NIBP - S
NIBP - D
NIBP - M
%Sat
CVP
ICP
CPP
Temperature
Temp
Temp Site
Temp heater
Heater Off
Daily Urine Out
Daily Balance
Respiration
Flow1
Flow2
Helox
Ventilation settings
Intubation Status
Mechanical vent: 4353

Soroka PICU - PROSAFE

- Team – MD, RN, Research assistat (Med student), Epidemiologist.
- Difficulties:
  - Clalit HMO's administration
    - Patient privacy
    - Refusal to open WMO's system to the net – demand for a separate independent computer system.
  - Language barrier – need to translate PROSAFE into Hebrew.

Israel-Italy Joint Innovation Program for
Scientific and Technological Cooperation in R&D

MINISTRY OF SCIENCE
AND TECHNOLOGY

STATE OF ISRAEL

DIRECTORATE GENERAL
POLITICAL AND AFFAIRS OF THE
FOREIGN AFFAIRS

REPUBLIC OF ITALY

Application Form

TITLE (IN ENGLISH)

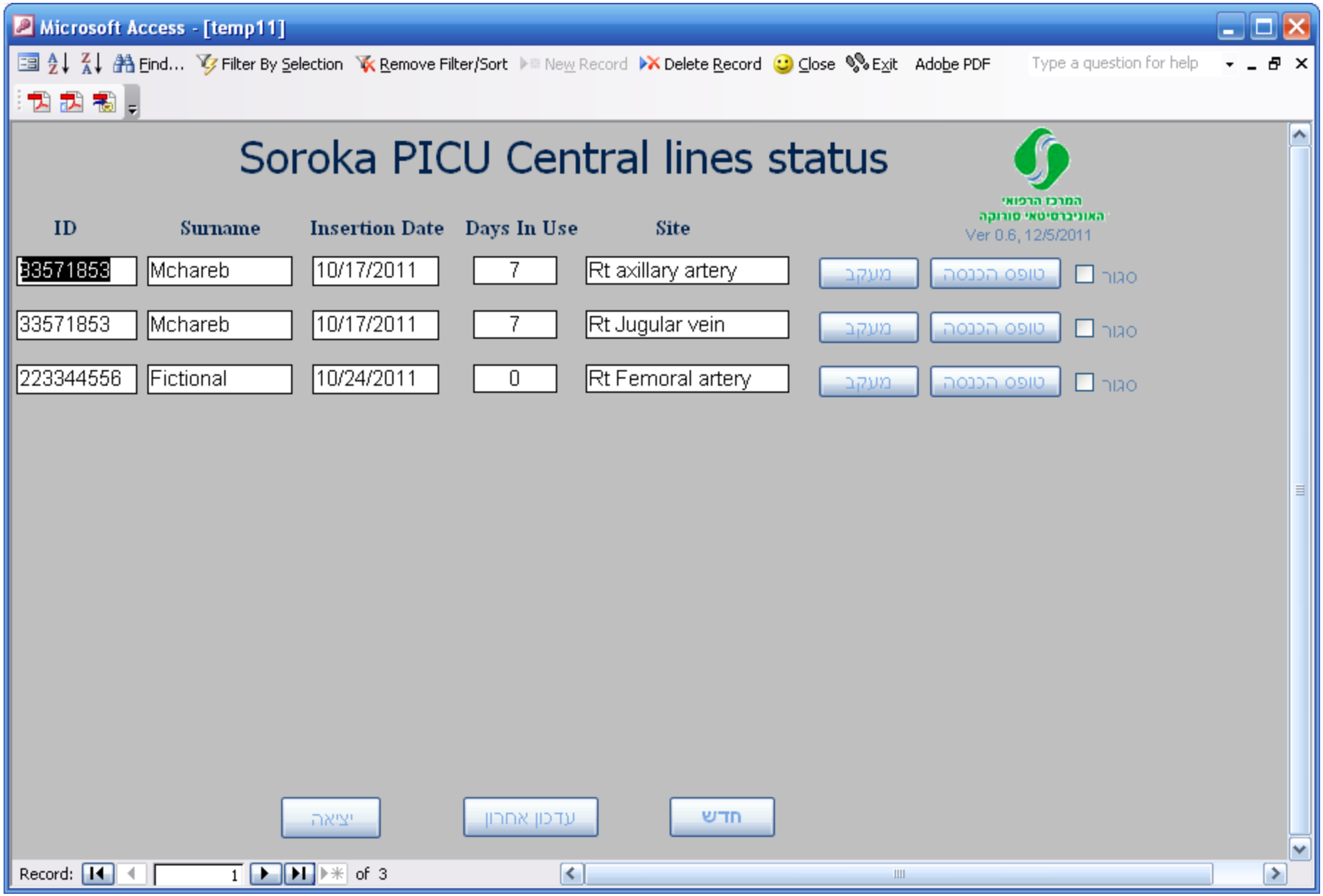
ASSESSMENT AND IMPROVEMENT OF QUALITY OF CARE IN ISRAELI INTENSIVE CARE UNITS ON THE BASIS OF THE ITALIAN PROSAFE EXPERIENCE

TITLE (IN HEBREW) (MUST BE ADDED)

הערכה ושיפור איכות הטיפול ביחידות טיפול נמרץ בישראל על בסיס נסיון הפרויקט האיטלקי פרוסייפ

Central venous and arterial central and peripheral catheter-related complications in patients admitted to the Pediatric Intensive Care Unit, Soroka University Medical Center, Beer-Sheva

1. Active surveillance for CVC and AL complications
   - Second year of Prospective study
   - Computerized data collection system


Microsoft Access - [temp11]
Find...
Filter By Selection
Remove Filter/Sort
New Record
Delete Record
Close
Exit
Adobe PDF
Type a question for help
Soroka PICU Central lines status
המרכז הרפואי
האוניברסיטאי סורוקה
Ver 0.6, 12/5/2011
ID
Surname
Insertion Date
Days In Use
Site
33571853
Mchareb
10/17/2011
7
Rt axillary artery
מעקב
טופס הכנסה
סגור
33571853
Mchareb
10/17/2011
7
Rt Jugular vein
מעקב
טופס הכנסה
סגור
223344556
Fictional
10/24/2011
0
Rt Femoral artery
מעקב
טופס הכנסה
סגור
יציאה
עדכון אחרון
חדש
Record:
1
of 3

Microsoft Access - [CentralLineInsertion]

Find... | Filter By Selection | Remove Filter/Sort | New Record | Delete Record | Close | Exit | Adobe PDF | Type a question for help

Central Line Insertion Monitoring

ID record (AutoNumber)

patientID

LName

FName

gender

birthdate

ethnicity

DateInsertion 10/24/2011

Inserter

InserterHandHygiene ☑

mask-eye shield ☐

large drape ☐

sterile gown ☑

sterile gloves ☑

cap ☑

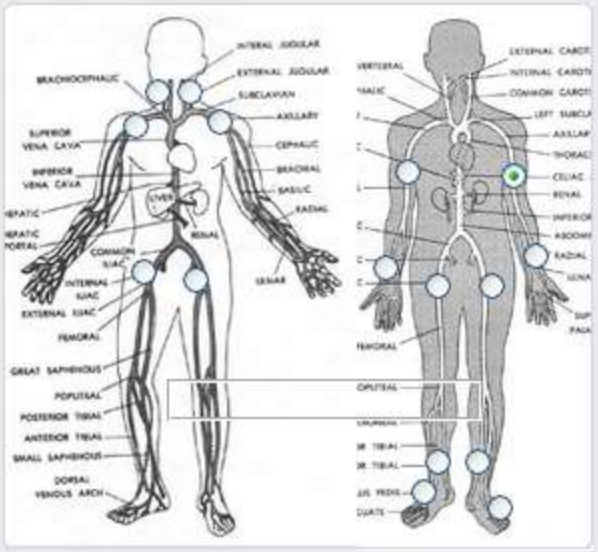
chlorhexidine gluconate ☑

povidone iodine ☐

alcohol ☑

skinPrep_compDry ☑

antimircobialCoated ☐



catheter type non-tunneled oth

number of attempts:

length:

diameter:

vigon:

angiocath:

quinton/tycos ☐

US used ☐

number of lumens

CL exchanged over a guidwire ☐

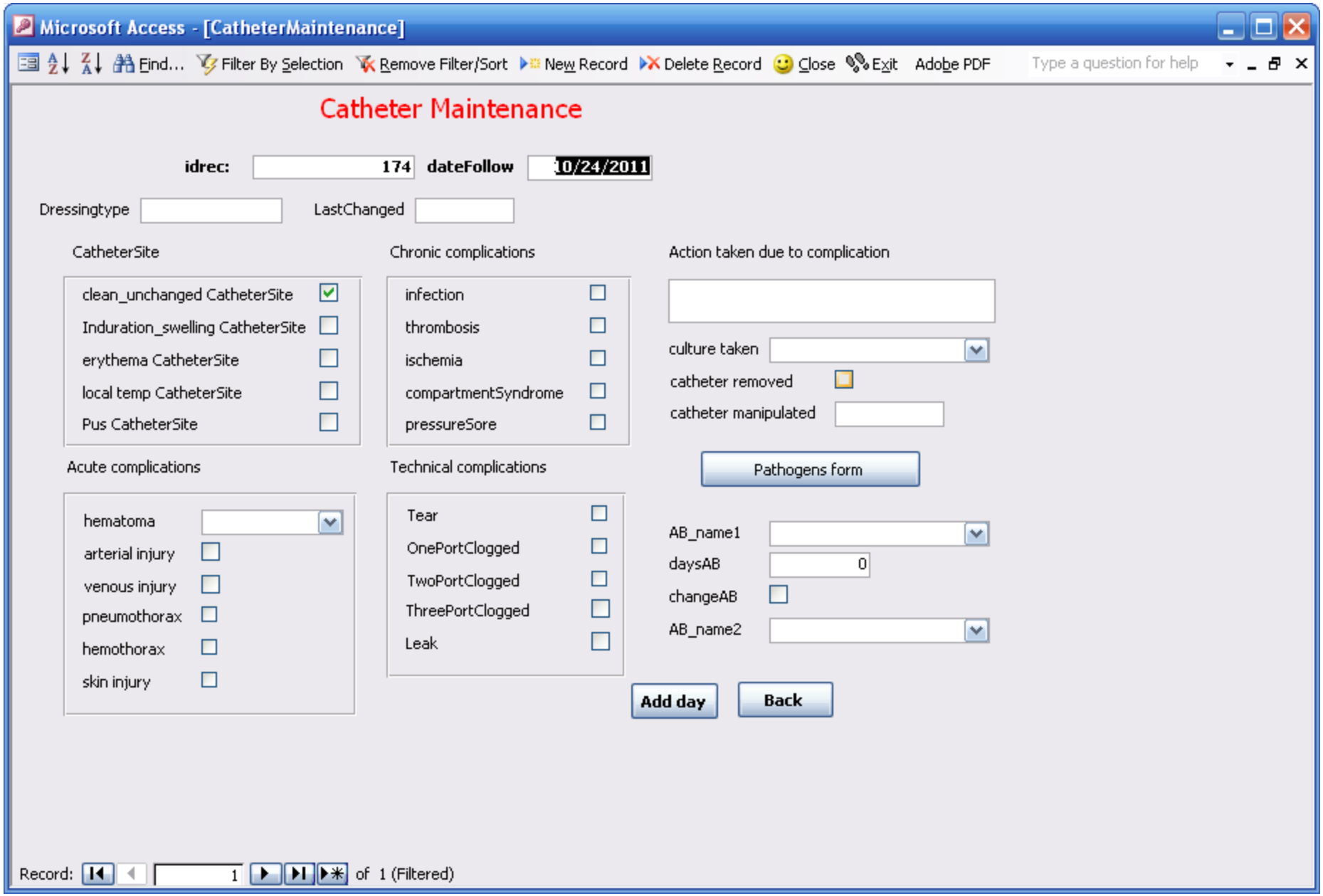
antiseptic ointment applied ☐

ReasonInsertion

Catheter Maintenance

Back

Record: 173 of 173

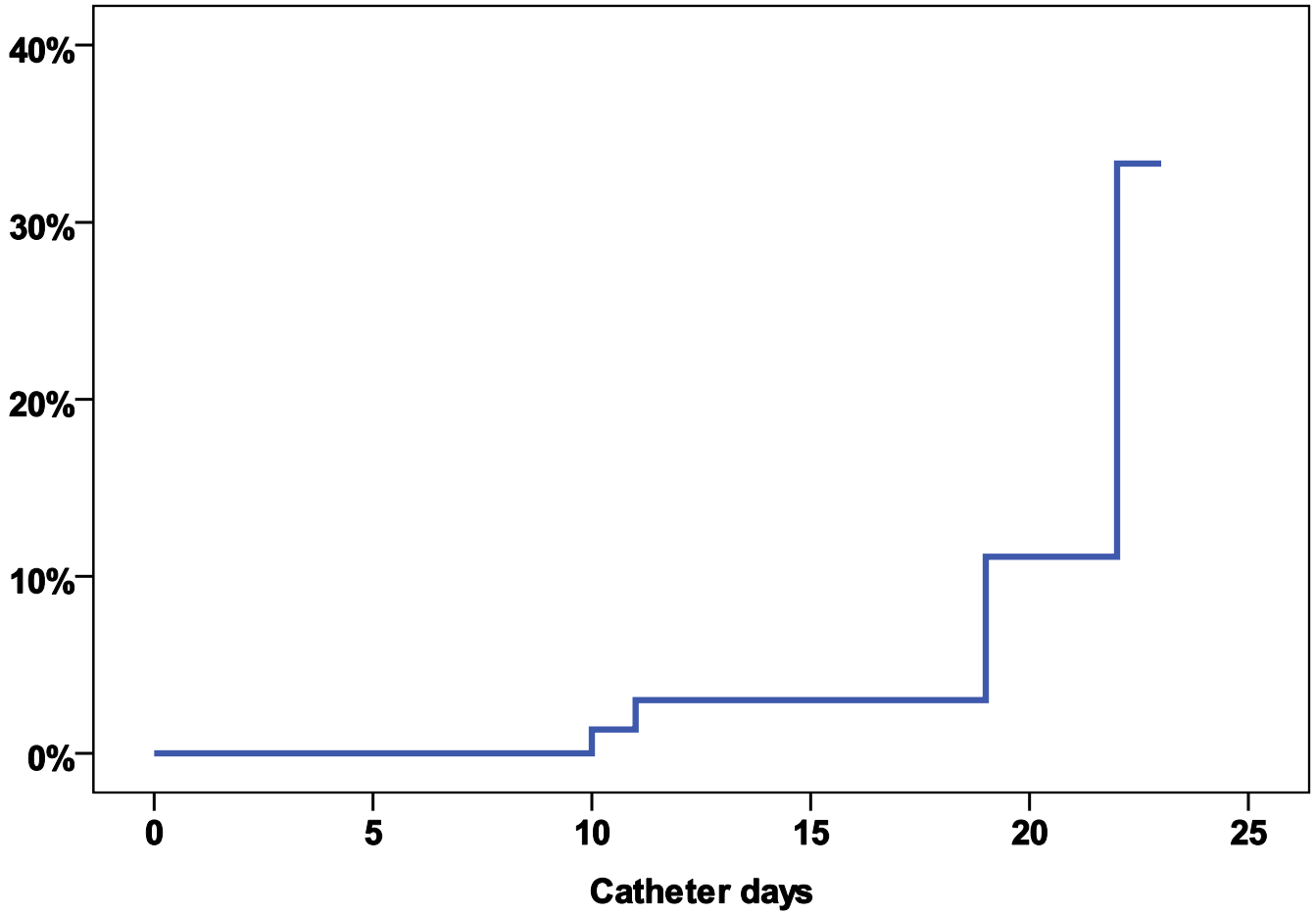

Microsoft Access - [CatheterMaintenance]
Find...
Filter By Selection
Remove Filter/Sort
New Record
Delete Record
Close
Exit
Adobe PDF
Type a question for help
Catheter Maintenance
idrec:
174
dateFollow
10/24/2011
Dressingtype
LastChanged
CatheterSite
clean_unchanged CatheterSite
Induration_swelling CatheterSite
erythema CatheterSite
local temp CatheterSite
Pus CatheterSite
Chronic complications
infection
thrombosis
ischemia
compartmentSyndrome
pressureSore
Action taken due to complication
culture taken
catheter removed
catheter manipulated
Pathogens form
Acute complications
hematoma
arterial injury
venous injury
pneumothorax
hemothorax
skin injury
Technical complications
Tear
OnePortClogged
TwoPortClogged
ThreePortClogged
Leak
AB_name1
daysAB
0
changeAB
AB_name2
Add day
Back
Record:
1
of 1 (Filtered)

Results

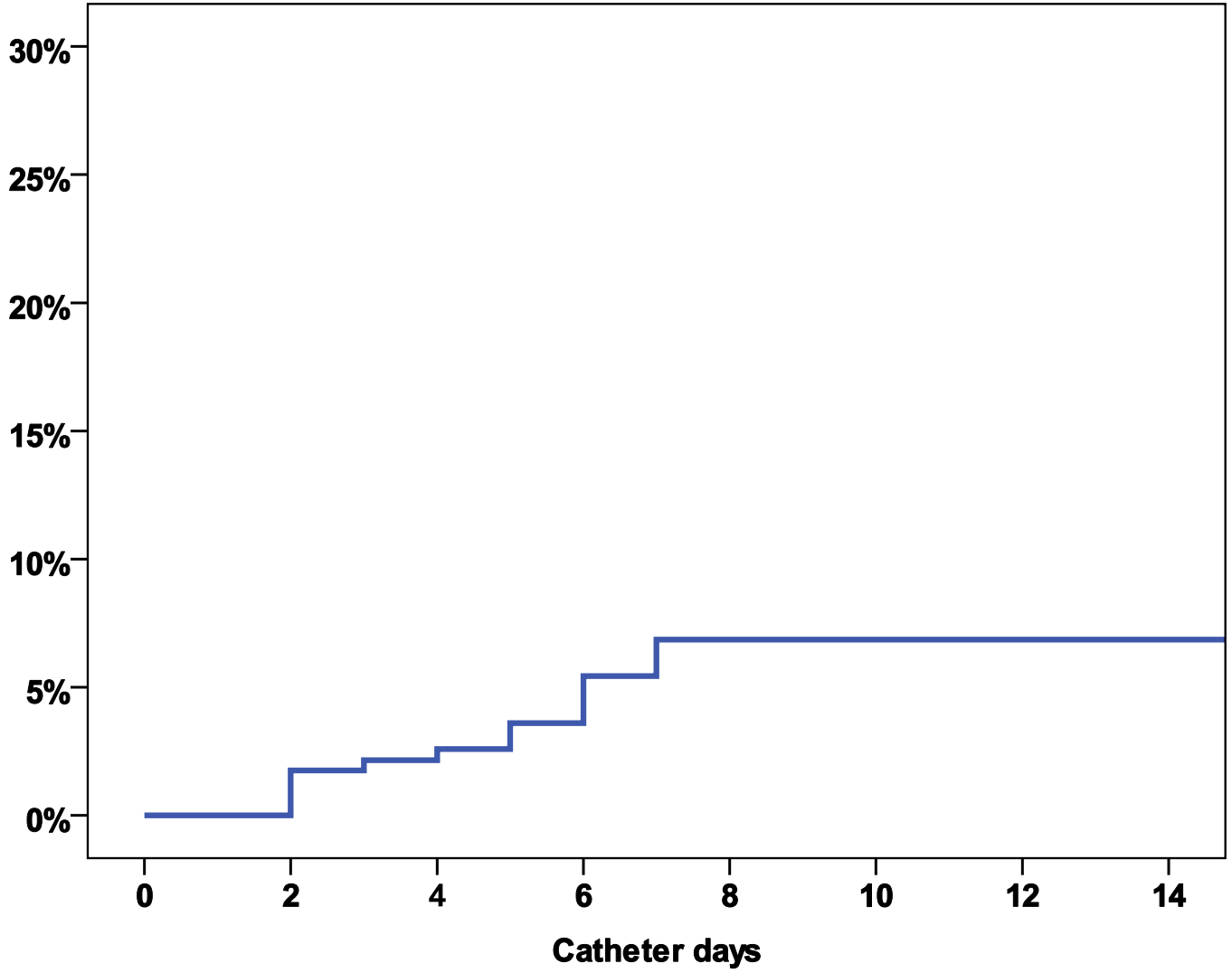
	Number (%*)	Catheter Days	Infectious complications**	Thrombotic-ischemic complications**	Mechanical complications**	Total complications**
Catheters	287 (100)	2102	4 (2/1000, 1.4)	14 (7/1000, 4.8)	14 (7/1000, 4.8)	32 (16/1000, 11.1)
Venous	110 (38.3)	966	2 (1.8)	4 (3.6)	2 (1.8)	8 (7.2)
Jugular	37 (12.8)	313	1 (2.7)	0	0	1 (2.7)
Femoral	72 (25)	643	1 (1.3)	4 (5.5)	2 (2.7)	7 (9.7)
Subclavian	1 (0.3)	10	0	0	0	0
Arterial	177 (61.6)	1136	2 (1.1)	10 (5.6)	12 (6.5)	24 (13.5)
Radial	75 (26.1)	364	0	3 (4)	7 (9.3)	10 (13.3)
Axillary	32 (11.1)	264	1 (3.1)	1 (3.1)	3 (9.3)	5 (15.6)
Femoral	54 (18.8)	441	1 (1.8)	6 (11.1)	0	7 (13)
Dorsalis pedis	12 (4.1)	45	0	0	1 (8.3)	1 (8.3)
Tibialis post.	4 (1.3)	22	0	0	1 (25)	1 (25)

%*- percentage of total number of catheters

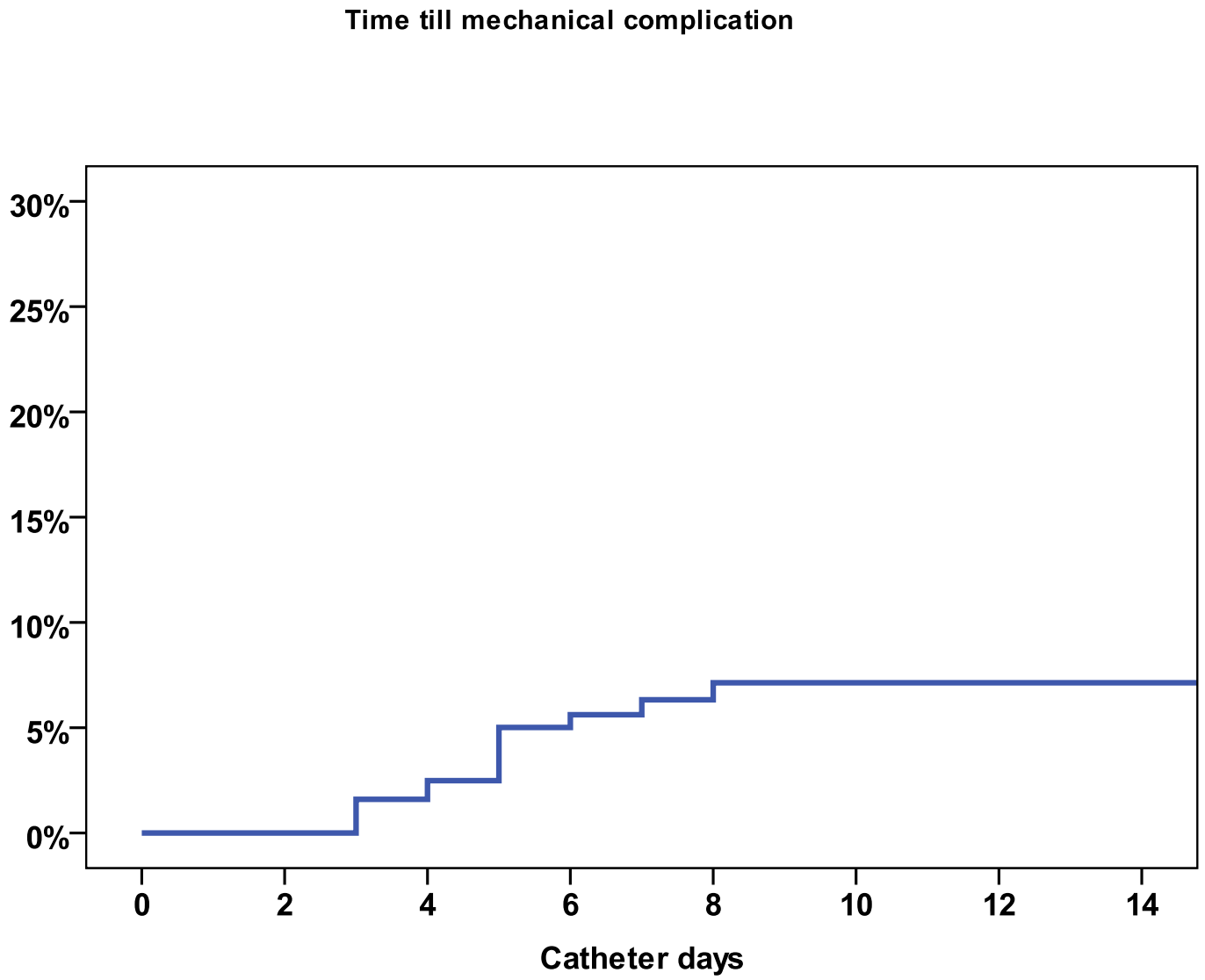
Kaplan-Mayer graph for risk to develop infectious complication



Kaplan-Mayer graph for risk to develop thrombo-embolic complication



Kaplan-Mayer graph for risk to develop local - mechanical complication



CDC Home | Search | Health Topics A-Z

MMWR

Recommendations and Reports

August 9, 2002 / 51(RR10);1-26

Guidelines for the Prevention of Intravascular Catheter-Related Infections

Prepared by
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Henry Masur, M.D.[1]
Rita D. McCormick, M.D.[7]
Leonard A. Mermel, D.O.[8]
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Issam I. Raad, M.D.[10]
Adrienne Randolph, M.D., M.Sc.[11]
Robert A. Weinstein, M.D.[12]

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[8]*Rhode Island Hospital and Brown University School of Medicine, Providence, Rhode Island*
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PEDIATRICS

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Pediatrics 2002;110;51-
DOI: 10.1542/peds.110.5.e51

This information is current as of February 19, 2006

The online version of this article, along with updated information and services, is located on the World Wide Web at:
http://www.pediatrics.org/cgi/content/full/110/5/e51

TABLE 3 CVL Insertion, Access, and Maintenance Bundles

CVL insertion bundle	Confirm CVL necessity with attending physician
	Review CVL insertion checklist
	Perform time-out to confirm patient identification and insertion site
	Use hand hygiene before donning and after removing gloves
	Use CVL insertion kit with maximal sterile barriers
	Skin antisepsis: 2% chlorhexidine if patient of EGA of >37 wk or 70% alcohol × 3 if patient of EGA of <37 wk
	Include CVL insertion "observer" with documented sign-off
CVL access bundle	Use hand hygiene
	Use clean gloves when accessing line
	Hub disinfection: 10-s alcohol scrub and dry with every entry
	Change end caps whenever removed to access lines
CVL maintenance bundle	No routine replacement of CVLs
	Use CVL dressing change kit to change dressing every 7 d or when damp, soiled, or loose
	Use hand hygiene and sterile gloves
	Skin antisepsis: 2% chlorhexidine if patient of EGA of >37 wk or 70% alcohol × 3 if patient of EGA of <37 wk
	Apply chlorhexidine-eluting disk after CVL insertion and every 7 d[30]
	Use transparent semipermeable dressing
	Use gauze only if bleeding or oozing; if required, change gauze at least every 2 d

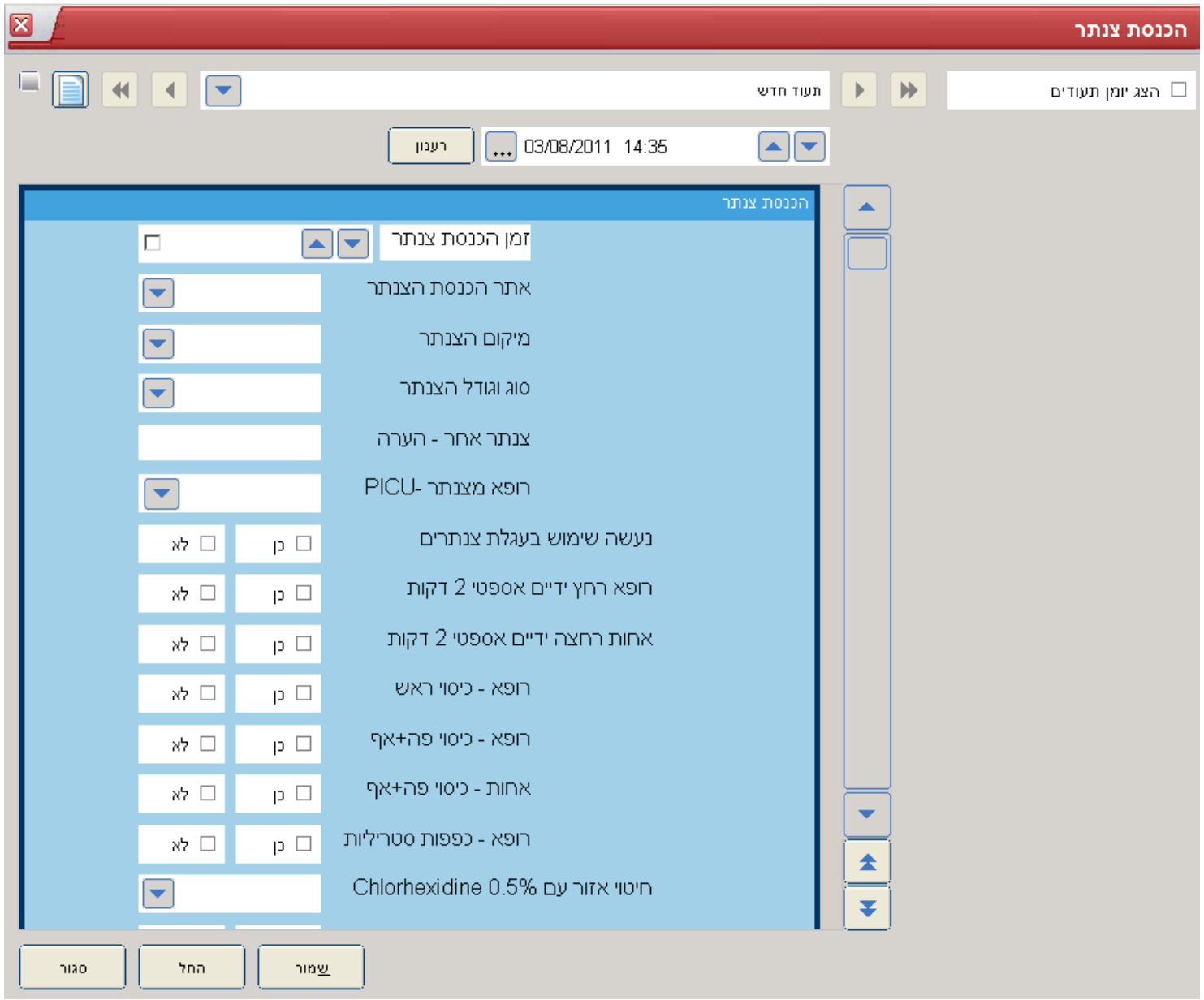
EGA indicates estimated gestational age.

Intervention

Bundle approach to decrease CVC complications

- RN and MD training
  - Lecture
  - self assessment Quiz
- Equipment
- Computerized data collection system

stryker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תעוד חדש
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זמן הכנסת צנתר
אתר הכנסת הצנתר
מיקום הצנתר
סוג וגודל הצנתר
צנתר אחר - הערה
רופא מצנתר -PICU
נעשה שימוש בעגלת צנתרים
רופא רחץ ידיים אספטי 2 דקות
אחות רחצה ידיים אספטי 2 דקות
רופא - כיסוי ראש
רופא - כיסוי פה+אף
אחות - כיסוי פה+אף
רופא - כפפות סטריליות
חיטוי אזור עם Chlorhexidine 0.5%
כן
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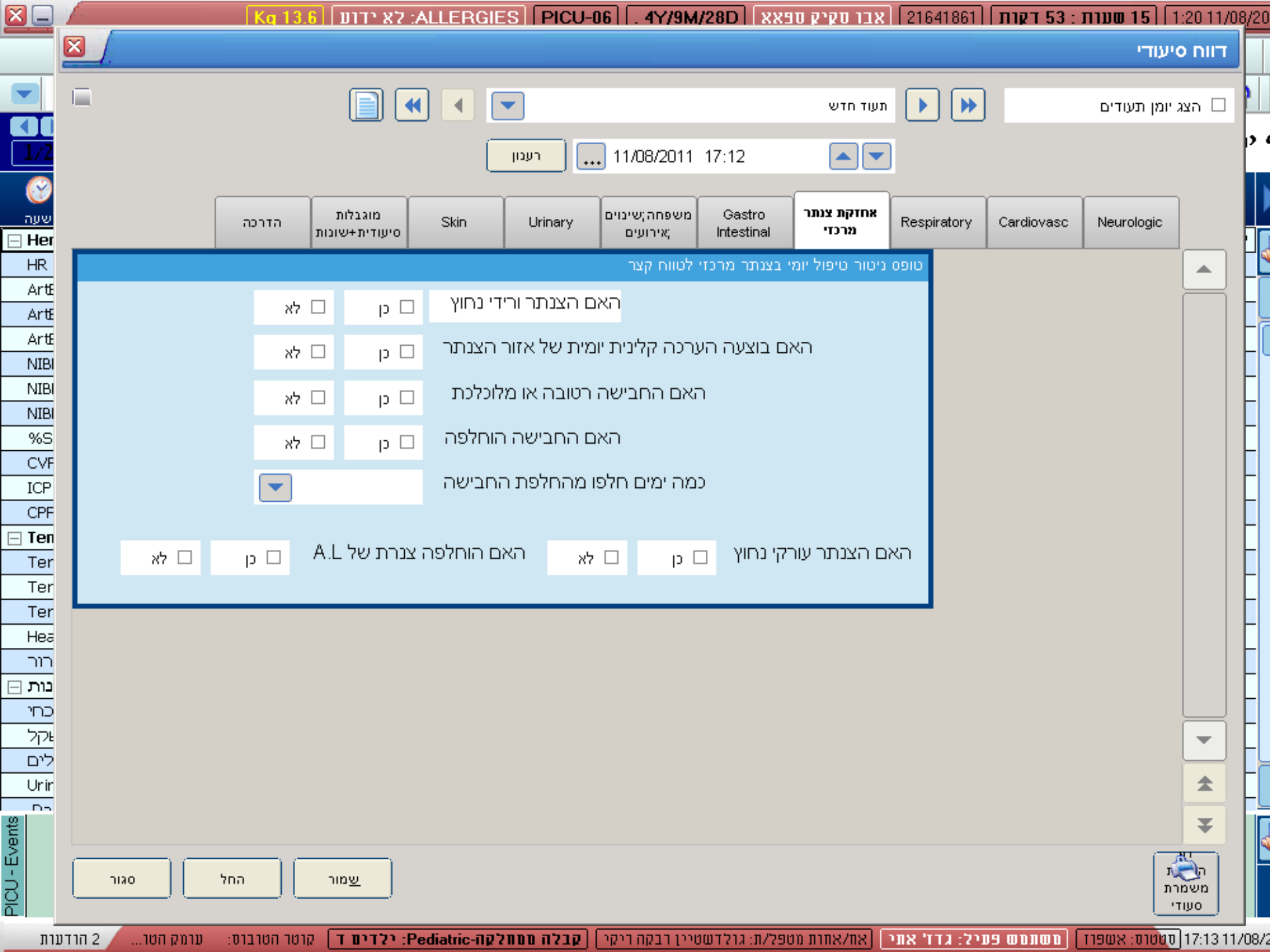
שמור
החל
סגור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PICU-06
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דווח סיעודי
הצג יומן תעודים
תעוד חדש
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Neurologic
Cardiovasc
Respiratory
אחזקת צנתר מרכזי
Gastro Intestinal
משפחה;שינוים ;אירועים
Urinary
Skin
מוגבלות סיעודית+שונות
הדרכה
טופס ניטור טיפול יומי בצנתר מרכזי לטווח קצר
האם הצנתר ורידי נחוץ
כן
לא
האם בוצעה הערכה קלינית יומית של אזור הצנתר
כן
לא
האם החבישה רטובה או מלוכלכת
כן
לא
האם החבישה הוחלפה
כן
לא
כמה ימים חלפו מהחלפת החבישה
האם הצנתר עורקי נחוץ
כן
לא
האם הוחלפה צנרת של A.L
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לא
שמור
החל
סגור
משמרת סעודי
PICU - Events
2 הודעות
קבלה מחלקה-Pediatric: ילדים ד
משתמש פעיל: גדי אתי
17:13 11/08/2

Thank You