



**Critical Care  
Nutrition**

Case Report Forms  
&  
Worksheets

**International Nutrition Survey  
2009**

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## Case Report Form & Worksheets

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## User and Site Registration (Form A)

### Part A.

Before completing the site registration process, please answer a few questions about yourself:

1. First Name \_\_\_\_\_ Last Name \_\_\_\_\_

2. Address \_\_\_\_\_

City \_\_\_\_\_ State/Province/County \_\_\_\_\_

Country \_\_\_\_\_

Telephone: \_\_\_\_\_ Fax: \_\_\_\_\_

Email: \_\_\_\_\_

3. What is your gender? Male  Female

4. What is your age?

18-24 years

25-34 years

35 -44 years

45-54 years

55-64 years

65 years and over

5. What is your role in the ICU?

Dietitian

Registered Nurse

Research Co-ordinator

Doctor

Pharmacist

Other, please specify \_\_\_\_\_

ICU Name \_\_\_\_\_

**6. How did you hear about the study?**

Professional Society  Please specify \_\_\_\_\_

Internet

Conference  Please specify \_\_\_\_\_

Colleague

Other, Please specify \_\_\_\_\_

**7. Did you require ethics approval to participate in this survey? Yes  No**

if yes, please specify:

expedited review without patient consent

expedited review with patient consent

full review without patient consent

full review with patient consent

**Part B.**

To register your site, please provide the following information.

*You may need to ask your ICU Medical or Nursing Director to help you with some responses*

**Hospital Information**

1. Hospital Name: \_\_\_\_\_
2. Type of Hospital:  Teaching  Non-Teaching
3. City: \_\_\_\_\_
4. Province/State/Country: \_\_\_\_\_
5. Country: \_\_\_\_\_
6. Size of hospital (number of beds): \_\_\_\_\_

**ICU Information**

1. Does your hospital have multiple ICUs? Yes  No   
 If yes, ICU name (e.g. medical, surgical, trauma) \_\_\_\_\_
2. ICU Type: **Open** (Attending physician remains in charge, ICU physician consults)   
**Closed** (Care transferred or shared with ICU physician)   
**Other** please specify \_\_\_\_\_
3. Case Types: (select all that apply)
 

medical <input type="checkbox"/>	neurological <input type="checkbox"/>
surgical <input type="checkbox"/>	neurosurgical <input type="checkbox"/>
trauma <input type="checkbox"/>	cardiac surgery <input type="checkbox"/>
pediatrics <input type="checkbox"/>	burns <input type="checkbox"/>
other (specify) _____	
4. Is there a designated ICU Medical Director? Yes  No
7. Number of beds in ICU: \_\_\_\_\_

8. What time does your ICU flow sheet run from? (e.g. 07:00)

\_\_\_\_:\_\_\_\_

8. Do you have a Dietitian working in the ICU?

Yes

No

If yes, amount of FTE (full time equivalent) dietitian \_\_\_\_\_

## Feeding Protocol

1. Do you use a bedside feeding protocol/algorithm that allows the nurse to advance or withhold tube feedings as specified by the protocol/algorithm?

Yes

No

If yes, please answer the following:

a) Do you use a gastric residual volume threshold to adjust feeds? Yes  No

If yes, what gastric residual volume threshold do you use? \_\_\_\_\_ mls

b) Does your feeding protocol include an algorithm for: (please check ALL that apply)

Motility agents

Small Bowel Feeding

Withholding for procedures

Head Of Bed elevation

Other (Please Specify): \_\_\_\_\_

## Blood Sugar Monitoring

1. Do you use a protocol to monitor blood sugar control or the administration of insulin?

(for the average ICU patient and NOT for those with Diabetic Ketoacidosis (DKA) or hyperosmolar non-ketotic coma)

Yes

No

If yes, what range of blood glucose do you target? Lower: \_\_\_\_\_ Upper: \_\_\_\_\_ mmol/L  
(mmol/L = ng/dL X 0.0555)





### Patient Information (Form B)

*Data can be completed retrospectively. Head of Bed needs to be observed on Day 1 of data collection and is an OPTIONAL field.*

Patient Number corresponds to the Patient Number from Screening Log

Patient number	Sex (Male or Female)	Age (Years)	Hospital Admission (Date & Time)	ICU Admission (Date & Time)	Start of Mechanical Ventilation in ICU (Date & Time) <sup>£</sup>	Admission Category* (medical or elective/emergency surgical)	Admission Diagnosis*	Presence of ARDS (Yes or No)	Head of Bed Elevation (degrees) (0-90)	APACHE II Score <sup>#</sup>
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										

\*Select from taxonomy

# If not available, complete Apache II worksheet (Form C)

£ If ventilation initiated prior to ICU admission, start date and time are same as ICU admission date and time

## ICU Admission Diagnosis Taxonomy

### NON-OPERATIVE CONDITIONS

Choose from this list if admission category is medical

#### Cardiovascular / vascular:

1.  Cardiogenic shock
2.  Cardiac arrest
3.  Aortic aneurysm
4.  Congestive heart failure
5.  Peripheral vascular disease
6.  Rhythm disturbance
7.  Acute myocardial infarction
8.  Hypertension
9.  Other CV disease: \_\_\_\_\_

#### Respiratory:

10.  Parasitic pneumonia (ie.pneumocystis carinii)
11.  Aspiration pneumonia
12.  Respiratory neoplasm (inc. larynx, trachea)
13.  Respiratory arrest
14.  Pulmonary edema (non-cardiogenic)
15.  Bacterial / Viral pneumonia
16.  Chronic obstructive pulmonary disease
17.  Pulmonary embolism
18.  Mechanical airway obstruction
19.  Asthma
20.  Other respiratory disease: \_\_\_\_\_

#### Gastrointestinal:

21.  Hepatic failure
22.  GI perforation/obstruction
23.  GI bleeding due to varices
24.  GI inflammatory disease (ulcerative colitis, crohn's disease)
25.  GI bleeding due to ulcer/laceration
26.  GI bleeding due to diverticulosis
27.  Pancreatitis
28.  Other GI disease: \_\_\_\_\_

#### Neurologic:

29.  Intracerebral hemorrhage
30.  Subarachnoid hemorrhage
31.  Stroke
32.  Neurologic infection
33.  Neurologic neoplasm
34.  Neuromuscular disease
35.  Seizure
36.  Other neurologic disease: \_\_\_\_\_

#### Sepsis:

37.  Sepsis (other than urinary tract)
38.  Sepsis of urinary tract origin

#### Trauma:

39.  Head trauma (with/without multiple trauma)
40.  Multiple trauma (excluding head trauma)

#### Metabolic:

41.  Metabolic coma
42.  Diabetic ketoacidosis
43.  Drug overdose
44.  Other metabolic disease: \_\_\_\_\_

#### Hematologic:

45.  Coagulopathy //neutropeniathrombocytopenia
46.  Other hematologic condition: \_\_\_\_\_

#### Other:

47.  Renal disease: \_\_\_\_\_

48.  Burns
49.  Other medical disease: \_\_\_\_\_

### POST-OPERATIVE CONDITIONS:

Choose from this list if admission category is surgical

#### Vascular / cardiovascular:

50.  Dissecting/ruptured aorta
51.  Peripheral vascular surgery (no bypass graft)
52.  Valvular heart surgery/CABG
53.  Elective abdominal aneurysm repair
54.  Peripheral artery bypass graft
55.  Carotid endarterectomy
56.  Other CV disease: \_\_\_\_\_

#### Respiratory:

57.  Respiratory infection
58.  Lung neoplasm
59.  Respiratory neoplasm (mouth, sinus, larynx, trachea)
60.  Other respiratory disease: \_\_\_\_\_

#### Gastrointestinal:

61.  GI perforation/rupture
62.  GI inflammatory disease
63.  GI obstruction
64.  GI bleeding
65.  Pancreatitis
66.  Liver transplant
67.  GI neoplasm
68.  GI cholecystitis / cholangitis
69.  Other GI disease: \_\_\_\_\_

#### Neurologic:

70.  Intracerebral hemorrhage
71.  Subdural/epidural hematoma
72.  Subarachnoid hemorrhage
73.  Laminectomy/other spinal cord surgery
74.  Craniotomy for neoplasm
75.  Other neurologic disease: \_\_\_\_\_

#### Trauma:

76.  Head trauma (with/without multiple trauma)
77.  Multiple trauma (excluding head trauma)

#### Renal:

78.  Renal neoplasm
79.  Other renal disease: \_\_\_\_\_

#### Gynecologic:

80.  Hysterectomy

#### Orthopedic:

81.  Hip or extremity fracture

#### Bariatric Surgery:

82.  Laparoscopic Banding
83.  Laparoscopic Gastric Bypass
84.  Open Gastric Bypass (Roux-en-Y)
85.  Vertical Banded Gastroplasty

#### Other:

86.  Other surgical condition: \_\_\_\_\_

## APACHE II Worksheet (Form C)

Screening# \_\_\_\_\_

Patient# \_\_\_\_\_

Enter the highest and lowest values from the first 24 hours from admission to ICU.

	Highest	Lowest
<b>Temperature</b> – indicate if rectal, tympanic, core, axilla or oral °C  Conversion information: If axilla + 1°C, If oral + 0.5°C * If °F, use conversion factor: $- 32 \div 1.8$		
<b>Systolic Blood Pressure (mmHg)</b>		
<b>Diastolic Blood Pressure (mmHg)</b>		
<b>Heart Rate (Ventricular Response)</b>		
<b>Resp. Rate (non-ventilated or ventilated)</b>		
<b>Oxygenation:</b> a. If $FiO_2 \geq 0.5$ record the $FiO_2$ , $PaCO_2$ , and the $PaO_2$ b. If $FiO_2 < 0.5$ only record $PaO_2$ If <b>NO</b> arterial blood gases check here <input type="checkbox"/>		
<b>Arterial pH</b>		
$FiO_2$		
$PaCO_2$		
$PaO_2$		
<b>Serum <math>HCO_3</math></b> (venous-mmol/L or mEq/L) If <b>NO</b> arterial blood gases, replaces arterial pH and assumes normal oxygenation.		
<b>Serum Sodium</b> (mmol/L or mEq/L)		
<b>Serum Potassium</b> (mmol/L or $FiO_2 < 0.5$ record only $PaO_2$ mEq/L)		
<b>Serum Creatinine</b> ( $\mu$ mol/L) (If mg/dl, use conversion factor: x88.4)		
If patient is in acute renal failure, check here <input type="checkbox"/>		
<b>Hematocrit (%)</b> (If fraction, use conversion factor x100)		
<b>White Blood Count</b> (total/ $mm^3$ ) (in 1000s)		

\* Only required for manual calculations of APACHE II. If using the online forum, core temperature will be calculated automatically based on the route selected.

Glasgow Coma Score (GCS) = \_\_\_\_\_ (3-15)

or circle one option for each box

*For intubated patients use verbal scoring column allocated*

**Best Verbal Response**

5	Orientated
4	Confused
3	Inappropriate
2	Incomprehensible
1	No Response

**"Verbal" Intubated**

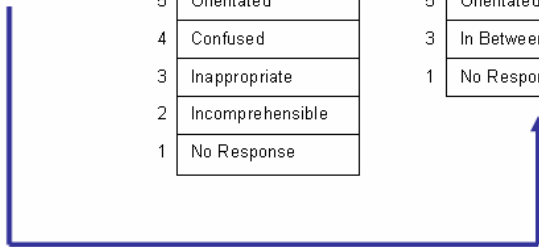
5	Orientated
3	In Between
1	No Response

**Best Motor Response**

6	Obeys
5	Localises
4	Flexion – Withd.
3	Flexion – Decort.
2	Extension
1	No Response

**Best Eye Opening**

4	Spontaneous
3	To Command
2	To Pain
1	No Response



**Chronic Health Points.**

Circle one option from the following box:

- |  |
|--|
| <p>5- For non-operative or emergency postoperative patients<br/>                 2- For elective postoperative patients<br/>                 0- If patient does NOT have a history of severe organ system insufficiency and is NOT immuno-compromised.</p> |
|--|

**Chronic Health Definitions**

Organ insufficiency or immuno-compromised state evident prior to this hospital admission and are consistent with the following criteria:

**Liver:** Biopsy-proven cirrhosis and documented portal hypertension; prior episodes of upper GI bleeding attributed to portal hypertension; or prior episodes of hepatic failure/encephalopathy/coma

**Cardiovascular:** New York Heart Association Class IV

**Respiratory:** Chronic restrictive, obstructive, or vascular disease resulting in severe exercise restriction (i.e., unable to climb stairs or perform activities of daily living or household duties; or documented chronic hyposia, hypercapnia, secondary polycythemia, severe pulmonary hypertension (>40 mmHg), or ventilator dependency

**Renal:** Receiving chronic dialysis

**Immuno-Compromised:** The patient has received therapy that suppresses resistance to infection (i.e., immuno-suppressive treatment, chemotherapy, radiation, long term or recent high dose steroids, or has a disease that is sufficiently advanced to suppress resistance to infection (i.e., leukaemia, lymphoma, AIDS)



## Baseline Nutrition Assessment (Form D)

*This form can be completed retrospectively*

Patient number	Height (meters)	Weight (kg)	Weight used in calculating requirements*	Determination of energy requirements*	Prescribed energy intake (Kcal/day)	Prescribed protein intake (grams / day)
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						

\*Refer to taxonomy and record the appropriate number



## Baseline Nutrition Assessment Taxonomy

What body weight did you use in calculating nutritional requirements? Choose from the following.

Code	Weight
1	Actual (ABW) (measured or estimated)
2	Ideal (IBW) based on Hamwi formula
3	Ideal (IBW) based on BMI 20-25 Kg/m <sup>2</sup>
4	Adjusted by 25% (ABW x 0.25 + IBW)
5	Adjusted by 40% (ABW x 0.4 + IBW)
6	Adjusted average ((ABW + IBW) x 0.5)
7	No weight used in calculation
8	No assessment completed
9	Other, please specify

### Energy Requirements

What predictive equation do you use to determine energy requirements? Choose from the following (Select ALL that apply).

Code	Predictive Equation
1	Harris Benedict Equation
2	Schofield Equation with no adjustment for stress and activity
3	Schofield Equation with adjustment for stress and/or activity
4	Mifflin-St. Jeor Equation
5	Ireton-Jones Equation
6	Weight based <20 Kcal/Kg
7	Weight based: 20-24 Kcal/Kg
8	Weight based: 25-29 Kcal/Kg
9	Weight based: 30-35 Kcal/Kg
10	Provide 1200 – 1499 Kcal as standard
11	Provide 1500-2000 Kcal as standard
12	Indirect calorimetry
13	Other, please specify



**Critical Care  
Nutrition**

**Daily Nutrition Data (Form E)**

To be filled out **daily** for each patient.

ICU Name \_\_\_\_\_

Screening No \_\_\_\_\_

Patient No \_\_\_\_\_

Date and Time EN Initiated in ICU \_\_\_\_\_ Date and Time PN Initiated in ICU \_\_\_\_\_

Study Day #	1 ICU Admit	2	3	4	5	6	7	8	9	10	11	12
Date: dd/mm/yy:												
Type of Nutrition Received												
EN (Y/N)												
PN (Y/N)												
Oral (Y/N)												
Morning blood sugar (mmol/l) (If in mg/dL, x0.0555 to convert to mmol/L)												
Hypoglycemic event (Y/N) (Blood sugar <3.5 mmol/l) (mmol/l)												
Insulin units/day												
Supplemental Glutamine (Y/N)												
Glutamine dose (g)												
Glutamine route (EN/IV)												
Supplemental Probiotics (Y/N)												
Supplemental Selenium (Y/N)												
Selenium dose (g)												
Selenium route (EN/IV)												
Propofol (>6hours) Y/N												
Kcals from propofol												



### Daily Nutrition Data (Form E)

#### Enteral Nutrition

Study Day #	1	2	3	4	5	6	7	8	9	10	11	12
EN formula name(s) Choose code# from taxonomy												
Kilocalories received												
Protein received (grams)												
Location of feeding tube Choose from taxonomy												
EN interrupted today (Y/N)												
Total time EN interrupted (h; min)												
Reasons EN interrupted Choose from taxonomy												
Motility agents Choose from taxonomy												

#### Parenteral Nutrition

Study Day #	1	2	3	4	5	6	7	8	9	10	11	12
Reason EN not provided? Choose from taxonomy												
Parenteral solution Choose from taxonomy												
Kilocalories received												
Protein received (grams)												

## Enteral Nutrition Taxonomies

### Enteral Formulas

#### A. Abbott International

Code	Formula Name	Code	Formula Name
A1	AlitraQ	A24	Osmolite with Fiber
A2	Edanec	A25	Osmolite HN
A3	Edanec HN	A26	Osmolite HN Plus
A4	Ensure	A27	Osmolite High Protein
A5	Ensure HP	A28	Oxepa
A6	Ensure Plus	A29	Optimental
A7	Glucerna	A30	Optimental 1.0
A8	Glucerna Select	A31	Perative
A9	Jevity	A32	Pivot 1.5 Cal
A10	Jevity 1 Cal	A33	Promote
A11	Jevity 1.2 Cal	A34	Promote with Fiber
A12	Jevity 1.5 Cal	A35	Pulmocare
A13	Jevity Plus 1.5 k/cal	A36	Pulmocare II
A14	Jevity 2 with FOS	A37	Suplena
A15	Jevity with FOS	A38	Two Cal HN
A16	Jevity HiCal	A39	Vital
A17	Jevity Plus	A40	Vital HN
A18	Jevity Promote	A41	Supplement: Juven
A19	Nepro	A42	Supplement: Polycose powder
A20	Osmolite	A43	Supplement: Polycose Liquid
A21	Osmolite 1 Cal	A44	Supplement: Promod
A22	Osmolite 1.2 Cal	A45	Supplement: Prosure
A23	Osmolite 1.5 Cal	A46	Other Abbott Product (please specify)

#### B. Fresenius Kabi

Code	Formula Name	Code	Formula Name
B1	1000 complete	B14	Intestamin
B2	1200 complete	B15	Reconvan
B3	1800 complete	B16	Supportan
B4	Diben	B17	Survimed Renal
B5	Fresubin Original	B18	Survimed OPD
B6	Fresubin Original Fibre	B19	Other Fresenius Kabi Product
B7	Fresubin Energy		
B8	Fresubin Energy Fibre		
B9	Fresubin HP Energy		
B10	Fresubin Soya Fibre		
B11	Fresubin HEPA		
B12	Fresubin Diabetes		
B13	Fresubin		

## C. Nestle

Code	Formula Name	Code	Formula Name
C1	Boost 1.0 Standard	C24	Nutren Replete Fiber
C2	Boost 1.5 Plus Calories	C25	Nutrihep
C3	Crucial	C26	Peptamen
C4	Compleat	C27	Peptamen 1.5
C5	Diabetisource AC	C28	Peptamen OS
C6	Fibersource HN	C29	Peptamen OS 1.5
C7	Glutasolve	C30	Peptamen with Prebio 1
C8	Impact	C31	Peptamen AF 1.2 with Prebio
C9	Impact Glutamine	C32	Renalcal
C10	Impact with Fiber	C33	Resource 2.0
C11	Impact 1.5	C34	Resource Diabetic
C12	Isosource HN	C35	Tolerex
C13	Isosource HN with fibre	C36	Vivonex TEN
C14	Isosource VHN	C37	Vivonex Plus
C15	Isosource 1.5 Cal	C38	Vivonex RTF
C16	Novasource Renal	C39	Supplements- Beneprotein Instant Protein Powder
C17	Nutren 1.0	C40	Supplements - Microlipid
C18	Nutren 1.0 Fiber	C41	Supplements – Resource Benecalorie
C19	Nutren 1.5	C42	Supplements - MCT Oil
C20	Nutren 2.0	C43	Supplements-Resource Glutasolve
C21	Nutren Glytrol	C44	Supplements: Resource Arginaid
C22	Nutren Pulmonary	C45	Supplements- Resource Benefiber
C23	Nutren Replete	C46	Other Nestle Product

## D. Nutricia

Code	Formula Name	Code	Formula Name
D1	Cubison	D14	Nutrison Concentrated
D2	Diason	D15	Nutrison Pre
D3	Nutrison Standard	D16	Nutrison Low Energy Multi Fibre
D4	Nutrison Multi Fibre	D17	Nutrisorb Low Energy
D5	Nutrison Protein Plus Multi Fibre	D18	Nutrisorb Low Energy Soy Multi Fibre
D6	Nutrison Protein Plus	D19	Peptisorb
D7	Nutrison1000 Complete Multi Fibre	D20	Supplement: Calogen
D8	Nutrison 1200 Complete Multi Fibre	D21	Supplement: Protifar
D9	Nutrison Energy Multi Fibre	D22	Supplement: Polycal Powder / Fantomalt
D10	Nutrison Energy	D23	Supplement: Polycal Liquid
D11	Nutrison Soya	D24	Supplement: DuoCal
D12	Nutrison MCT	D25	Supplement: Fortimel
D13	Nutrison Low Sodium	D26	Other Nutricia Product

### E. B.Braun

Code	Formula Name
E1	Nutricomp Standard
E2	Nutricomp Standard with Fibre
E3	Nutricomp Standard with Fibre D
E4	Nutricomp
E5	Nutricomp Diabetes
E6	Nutricomp Hepa
E7	Nutricomp Intensive
E8	Nutricomp Immun
E9	Nutricomp MCT
E10	Nutricomp Peptid
E11	Nutricomp Energy
E12	Nutricomp Energy Fibre
E13	Other B.Braun Product

### F. Miscellaneous Companies

Code	Formula Name
F1	Baxter: Restore-X
F2	MEAD JOHNSON: Portagen
F3	Hormel Health: Immun-Aid
F4	Hormel Health: Hepatic-Aid
F5	Hormel Health: Glutasorb
F6	Hormel Health: Propass
F7	National Nutrition: Argiment
F8	National Nutrition: Argitein
F9	National Nutrition: Prosource liquid
F10	National Nutrition: Prosource powder
F11	Global Health: Procel
F12	Medical Nutrition: Pro-stat
F13	Victus Inc: Immunex Plus
F14	Wyeth: Enercal
F15	Wyeth: Enercal Plus
F16	Other

**Motility agents**

1. Metoclopramide
2. Motilium
3. Erythromycin
4. Other: Specify \_\_\_\_\_
5. None

**Location of feeding tube**

1. Gastric confirmed
2. Gastric presumed
3. Post-pyloric duodenal confirmed
4. Post-pyloric duodenal presumed
5. Post-pyloric jejunal confirmed
6. Post-pyloric jejunal presumed
7. No tube in place

**Parenteral Nutrition****Reason Enteral Nutrition Not Provided**

1. No clinical contraindication to EN
2. Mechanical bowel obstruction
3. Bowel ischemia
4. Small bowel ileus
5. Small bowel fistulae
6. Gastrointestinal perforation
7. Short Gut Syndrome
8. Hemodynamic instability
9. Proximal bowel anastomosis
10. Not tolerating enteral feeding
11. No access to small bowel
12. Pancreatitis
13. Gastrointestinal bleed
14. Gastrointestinal surgery
15. Other, specify \_\_\_\_\_



Screening # \_\_\_\_\_

Patient # \_\_\_\_\_

### Outcomes Form (Form F)

Initial Information	EN first initiated	<input type="checkbox"/>	EN initiated prior to ICU admission	yyyy	mm	dd
		<input type="checkbox"/>	EN initiated in ICU:			
	Date	2008	_____	_____	Time	_____
		<input type="checkbox"/>	EN not initiated during first 12 days in ICU			
Initial Information	PN first initiated	<input type="checkbox"/>	PN initiated prior to ICU admission			
		<input type="checkbox"/>	PN initiated in ICU:			
	Date	2008	_____	_____	Time	_____
		<input type="checkbox"/>	PN not initiated during first 12 days in ICU			

Discharge Information	Death	Date	2008	_____	_____	Time	_____
	ICU discharge	Date	2008	_____	_____	Time	_____
	Hospital discharge	Date	2008	_____	_____	Time	_____
	Mechanical Ventilation discontinued	Date	2008	_____	_____	Time	_____

N.B. On the eCRF you will have the option of selecting if the outcome has not occurred at day 60, or if outcome date and time is same as death.