

SECTION I: SCENARIO OVERVIEW

Scenario Title:	Hypoglycemic Reaction in post-op patient
Original Scenario Developer(s):	C.O’Leary-Kelley, PhD, RN, CNE
Date - original scenario	12/07
Validation:	07/08 by M. Miller, MA, RN
Revision Dates:	05/10, 07/11 M. Miller, MA, RN, CHSE & A. Lucero, MSN, RN, Sutter med surg clinicians: S. Uchiyama, RN, S. Kennedy, RN 07/18 M. Miller, MA, RN, CHSE
Pilot testing:	08/08
QSEN revision:	12/14 M. Miller, MA, RN, CHSE
<p>Estimated Scenario Time: 15-20 minutes Debriefing time: 30-40 minutes</p> <p>Target group: Pre-licensure nursing students, new graduate, RN transition students, staff nurses</p> <p>Core case: Management of hypoglycemic reaction</p> <p>QSEN Competencies:</p> <ul style="list-style-type: none"> • Patient Safety • Teamwork and Collaboration • Patient-Centered Care <p>Brief Summary of Case:</p> <p>This case involves a 69 year old female patient on the second post-operative day following a laparoscopic cholecystectomy. She has a 30 year history of Type 1 Diabetes Mellitus. She remains hospitalized for observation following a decreased urinary output and a temp of 102.6°F. on her first post-operative day. She received Lantus insulin and Lispro insulin for her routine morning dose and Lispro per sliding scale for elevated blood sugar, has eaten 50% of her breakfast. Nurses are to recognize potential for hypoglycemia, cluster signs and symptoms, recognize deteriorating status, check blood sugar, check for orders and intervene appropriately, deciding between juice and 50% glucose. Patient has standard orders for fast acting CHO and 50% glucose. Daughter becomes alarmed and is distracting bordering on disruptive to nurses.</p>	

EVIDENCE BASE / REFERENCES (APA Format)
Lewis, S., Bucher, L. et. al. (2017). Medical-Surgical Nursing: Assessment and management of clinical problems, Mosby.
American Diabetes Association. Standards of medical care in diabetes — 2018. Retrieved from www.diabetes.org on 7/23/18
American College of Endocrinology Consensus Statement on Guidelines for Glycemic Control. https://www.aace.com/publications/guidelines
AADE Position Statement: Role of Diabetic Educator in Inpatient Diabetes Management (2016). Retrieved from https://www.diabeteseducator.org/docs/default-source/practice/practice-documents/position-statements/role-of-the-diabetes-educator-in-inpatient-diabetes-management.pdf?sfvrsn=2

SECTION II: CURRICULUM INTEGRATION

A. SCENARIO LEARNING OBJECTIVES

Learning Outcomes

1. Apply clinical decision making skills in analyzing and interpreting patient data
2. Communicate effectively with the patient, family and members of the health care team.
3. Provide care to patients using principles of safety.
4. Integrate understanding of multiple dimensions of patient care

Specific Learning Objectives

1. Prioritize focused patient assessment.
2. Gather relevant patient and contextual data, including data from family regarding baseline.
3. Differentiates causes of signs and symptoms in patient situation.
4. Recognize and initiate request for assistance and further orders appropriate to hypoglycemic reaction.
5. Check prescriber orders for appropriate treatment.
6. Perform timely interventions to address urgent or primary problem(s). (hypoglycemic reaction)
7. Delegate tasks appropriately for situation and role.
8. Reassess patient in response to interventions.
9. Use communication strategies to minimize risk associated with change of status reporting
10. Performs relevant patient/family teaching focused on prevention and early recognition.

Critical Learner Actions

1. Performs hand hygiene, identifies patient using 2 identifiers; identifies self and role.
2. Assesses patient immediately following “hand-off” report, gathering relevant data from patient and family
3. Positions patient for safety
4. Checks capillary blood glucose following safety guidelines
5. Checks prescribers orders
6. Administers either fast acting CHO orally or administer 50% dextrose according to protocol
7. Reassesses patient including capillary blood glucose, using safety guidelines
8. Communicates with patient and family regarding incident, intervention and further prevention
9. Documents appropriately.

B. PRE-SCENARIO LEARNER ACTIVITIES

Prerequisite Competencies

Required prior to participating in the scenario

Knowledge	Skills/ Attitudes
<input type="checkbox"/> Pathophysiology of Diabetes Mellitus	<input type="checkbox"/> Focused assessment skills
<input type="checkbox"/> Pharmacology of parenteral insulin	<input type="checkbox"/> Blood glucose monitoring
<input type="checkbox"/> Normal laboratory values for blood glucose	<input type="checkbox"/> IV assessment and management
<input type="checkbox"/> Structured Communication tool (SBAR)	<input type="checkbox"/> IV medication administration/documentation
<input type="checkbox"/> Management of diabetic emergencies	<input type="checkbox"/> Use of personal protective devices
<input type="checkbox"/> Standard protocols for diabetic emergencies and sliding scale insulin	<input type="checkbox"/> Therapeutic communication in acute situations
	<input type="checkbox"/> Pharmacology: Lispro & Lantus insulin

SECTION III: SCENARIO SCRIPT

A. Case summary

69-year-old female, s/p laparoscopic cholecystectomy on the 2nd post-op day. She has a 30-year history of Type 1 DM. She remains hospitalized due to a decreased urine output and elevated temp (102.2 F°) in first 24 hours post-op. She received her sub-Q dose of Lantus Insulin 10 units and Lispro 1 unit this morning at 0800 with an additional 3 units of Lispro insulin for an AC fingerstick BG of 202. She ate very little of her breakfast this morning and has been sleeping off and on.

B. Key contextual details

Nurses are receiving a “hand-off” report from a nurse who has suddenly been called home due to a child’s illness. She is distracted and gives a hurried report. The nurses are taking this patient in addition to their other patients. It is currently 10:30 in the morning.

C. Scenario Cast

Patient/ Client	<input type="checkbox"/> High fidelity simulator	
	<input type="checkbox"/> Mid-level simulator	
	<input type="checkbox"/> Task trainer	
	<input type="checkbox"/> Hybrid (Blended simulator)	
	<input type="checkbox"/> Standardized patient	
Role	Brief Descriptor (Optional)	Standardized Participant (SP) or Learner (L)
RN 1	Staff nurse	Learner
RN 2	Staff nurse (can either be in the scenario from the beginning or be called in by primary nurse)	Learner
CNA	Will bring in glucometer and juice	Standardized Participant

D. Patient/Client Profile				
Last name:	Paulsen	First name:	Betty	
Gender: Fe	Age: 69 (9/30/41)	Ht: 5'10"	Wt: 170	Code Status: Full
Spiritual Practice: Lutheran	Ethnicity: Caucasian		Primary Language spoken: English	
1. History of present illness				
69-year-old female, s/p laparoscopic cholecystectomy for recurring gall bladder pain over last 2 years with a 30 year history of Type 1 Diabetes well controlled on Lantus insulin once a day and Lispro insulin 1 unit before each meal with occasional boluses of lispro insulin for elevated glucose levels				
Primary Medical Diagnosis		Cholelithiasis, Type 1 Diabetes		

2. Review of Systems	
CNS	A & O x 4; speech clear
Cardiovascular	S1 S2 Lispro; distal pulses 1+ palpable; skin warm/dry
Pulmonary	Lungs clear to auscultation
Renal/Hepatic	WNL, no abnormalities seen in laboratory workup
Gastrointestinal	Occasional RUQ (gall bladder type) pain
Endocrine	Type 1 DM x 30 years
Heme/Coag	WNL
Musculoskeletal	Moves all extremities equally
Integument	1-cm dry ulcerated area to lateral aspect L ankle
Developmental Hx	WNL
Psychiatric Hx	None reported
Social Hx	Denies ETOH; denies drug use. Widowed; lives alone. One adult child in the area.
Alternative/ Complementary Medicine Hx	None reported

Medication allergies:	NKDA	Reaction:	
Food/other allergies:	NKFA	Reaction:	

3. Current medications	Drug	Dose	Route	Frequency
	Lantus Insulin	10 Units	SQ	Every morning
	Lispro Insulin	1 Unit	SQ	Before each meal
	Lispro Insulin	Sliding scale	SQ	Before meals and h.s.
	Lisinopril	5 mg	PO	BID

4. Laboratory, Diagnostic Study Results					
Na: 136	K:4.8	Cl: 102	HCO ₃ : 24	BUN: 26	
Cr: 0.8	BS:130	HgA1C: 6%	GFR: 55		
Ca: 9.0	Mg: 1.2	Phos: 3.5			
Hgb: 14 Gm	Hct: 51%	Plt:250,000	WBC:6,000	ABO Blood Type: O+	
PT	PTT	INR	Troponin:	BNP:	
Ammonia:	Amylase:	Lipase:	Albumin:	Lactate:	
ABG-pH:	paO ₂ :	paCO ₂ :	HCO ₃ /BE:	SaO ₂ :	
VDRL:	GBS:	Herpes:	HIV:		
CXR:	ECG: 12 lead -				
CT:	MRI:				

E. Baseline Simulator/Standardized Patient State
(This may vary from the baseline data provided to learners)

1. Initial physical appearance

Gender: female	Attire: patient gown, slightly damp				
Alterations in appearance (moulage):					
1. age appropriate wig, glasses					
2. Cold, clammy skin all over (face, upper chest, arms) rub Vaseline, spray with ice water, pack face, chest, upper arms in ice packs for at least 30 minutes prior to scenario. <i>(Remember to remove ice bags and re-spray just prior to learners entering room)</i>					
3. Small dry bandage to wound (inner aspect of left ankle)					
4. Lap chole dressings (see drawing)					
x	ID band present, accurate information		ID band present, inaccurate information		ID band absent or not applicable
	Allergy band present, accurate information		Allergy band present, inaccurate information	x	Allergy band absent or not applicable

2. Initial Vital Signs Monitor display in simulation action room:

x	No monitor display		Monitor on, but no data displayed		Monitor on, standard display	
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BP: 130/84	HR: 84	RR: 20	T: 100° F (37.8°C)	SpO ₂ : 98% RA
CVP:	PAS:	PAD:	PCWP:	CO:
AIRWAY:	ETCO ₂ :	FHR:		
Lungs: Sounds/mechanics	Left: clear		Right: clear	
Heart:	Sounds:	S1, S2		
	ECG rhythm:	NSR if monitored		
	Other:			
Bowel sounds:	hypoactive		Other:	

3. Initial Intravenous line set up					
	Saline lock #1	Site:			IV patent (Y/N)
	IV #1	Site:	Fluid type:	Initial rate:	IV patent (Y/N)
x	Main	RA	D5 ½ NS w 20 mEq KCl	100 mL/hr.	
	Piggyback				
x	IV #2	Site:	Fluid type:	Initial rate:	IV patent (Y/N)
	Main	RA	500 mL NS for PB flush q8h and PRN		
x	Piggyback				
4. Initial Non-invasive monitors set up					
x	NIBP		ECG First lead:		ECG Second lead:
x	Pulse oximeter	x	Temp monitor/type	x	Other: Sequential stockings
5. Initial Hemodynamic monitors set up					
	A-line Site:		Catheter/tubing Patency (Y/N)	CVP Site:	PAC Site:
6. Other monitors/devices					
x	Foley catheter	Amount: 200 mL	Appearance of urine: clear light yellow		
	Epidural catheter	x	Infusion pump:	Pump settings: Primary Piggyback (2 nd channel)	
	Fetal Heart rate monitor/tocometer		Internal	External	
Environment, Equipment, Essential props					
Recommend standardized set ups for each commonly simulated environment					
1. Scenario setting: (example: patient room, home, ED, lobby)					
Patient room in unmonitored medical-surgical unit					

2. Equipment, supplies, monitors					
(In simulation action room or available in adjacent core storage rooms)					
x	Bedpan/ Urinal		Foley catheter kit	Straight cath. kit	x Incentive spirometer
x	IV Infusion pump		Feeding pump	Pressure bag	Wall suction
	Nasogastric tube		ETT suction catheters	Oral suction catheters	Chest tube insertion kit
	Defibrillator		Code Cart	12-lead ECG	Chest tube equip
	PCA infusion pump		Epidural infusion pump	Central line Insertion Kit	Dressing Δ equipment
x	IV fluid Type:	In addition to running IV, have 1 L NS		IV fluid additives:	Blood product ABO Type: # of units:

3. Respiratory therapy equipment/devices							
x	Nasal cannula		Face tent	x	Simple Face Mask		Non re-breather mask
x	BVM/Ambu bag		Nebulizer tx kit		Flowmeters (extra supply)		

4. Documentation and Order Forms							
x	Health Care Provider orders	x	Med Admin Record	x	H & P	x	Lab Results
	Progress Notes		Graphic record	x	Anesthesia/PACU record		ED Record
	Medication reconciliation		Transfer orders	x	Standing (protocol) orders		ICU flow sheet
x	Nurses' Notes		Dx test reports		Code Record		Prenatal record
x	Actual medical record binder, constructed per institutional guidelines				Other Describe:		

#	Medication	Dosage	Route	#	Medication	Dosage	Route
4	Acetaminophen	650 mg	PO	1	Lantus Insulin	30 cc	SQ
2	50 % dextrose	12.5 gm/25 mL	IV	1	Lispro Insulin	30 cc	SQ
1	Ancef	1 gram	IVPB	2	Lisinopril	5 mg	PO
2	Zofran	4 mg/2 mL	IV	2	Hydrocodone	5/325	PO

CASE FLOW / TRIGGERS/ SCENARIO DEVELOPMENT STATES

Initiation of Scenario :

Report given by off-going nurse: Betty Paulsen, a 69 year-old female, is s/p laparoscopic cholecystectomy POD #2. She has a 30-year history of Type 1 DM controlled with LANTUS insulin morning and evening and occasional Lispro coverage. She developed a decreased urine output in the first 24 hours after surgery but is voiding well now (200 mL void since shift started). She spiked a temperature last night to 102.2 F⁰ (38.8°C.) She remains hospitalized for work up and observation of her post-operative complications. She also has a 1-cm dry ulcerated area on the lateral aspect of her left ankle. She received his sub-Q dose of Lantus Insulin 10 units and 1 unit of Lispro this morning at 0800 for her routine insulin coverage and an additional 3 Units for an AC fingerstick BG of 202. She ate very little of her breakfast this morning and has been sleeping off and on. Her vital signs have been stable @ BP 130/84, HR – 84, RR-20, sats 98% on room air; last temp was 100°F (37.7°C.) following Acetaminophen @ 6:00 am for a temp of 101°F.

STATE / PATIENT STATUS	DESIRED LEARNER ACTIONS & TRIGGERS TO MOVE TO NEXT STATE		
<p>1. Baseline</p> <p>Patient lying in bed, pale and diaphoretic with wet gown. Slow to respond to questions, but complains of being cold with anxious speech.</p>	<p>Operator</p> <p>BP 140/90 HR 90 RR 20, unlabored Sats – 98% on room air T 100°F (37.7°C.) (monitor displays when learners take vital signs)</p> <p>Changes: ↑ HR to 120 over 2 minutes</p> <p>Triggers: Completes assessment & tasks or 5 minutes</p>	<p>Learner Actions</p> <ol style="list-style-type: none"> 1. Wash hands 2. Identify patient 3. Introduce self and role 4. Begins focused assessment 5. Recognizes abnormal assessment data 6. Validates appropriate findings with family member 	<p>Debriefing Points:</p> <ul style="list-style-type: none"> ▪ National Patient Safety Goals ▪ Possible causes of ↓ LOC & anxiety in this patient ▪ Factors included in decision making in this situation ▪ Significance of changes in patient status ▪ Strategies for communicating with patient to decrease own and patient anxiety

STATE / PATIENT STATUS	DESIRED ACTIONS & TRIGGERS TO MOVE TO NEXT STATE		
<p>2.</p> <p>Patient becomes increasingly anxious and somewhat confused. States “why am I so sweaty and cold?”</p>	<p>Operator:</p> <p>Keep HR at 120 bpm</p> <p>Triggers: <i>CNA or second nurse delivers glucometer & juice</i></p> <p>Nurse checks CBG</p>	<p>Learner Actions:</p> <ol style="list-style-type: none"> 1. Recognizes clinical manifestations of hypoglycemia 2. Verbalizes need for CBG and requests CNA to get glucometer and juice. 3. Communicates calmly with patient/family 4. Checks chart for current orders to cover hypoglycemia 5. Checks CBG following safety guidelines 	<p>Debriefing Points:</p> <ul style="list-style-type: none"> ▪ Possible causes of patient’s s/s ▪ Factors considered and assessments made in clinical decision making ▪ Differential: hypo- & hyper-glcemia ▪ Strategies for communicating with patients/family in acute situations ▪ Appropriate delegation ▪ Agency protocol for hypoglycemic reaction
STATE / PATIENT STATUS	DESIRED ACTIONS & TRIGGERS TO MOVE TO NEXT STATE		
<p>3.</p> <p>Patient becomes less responsive; unable to follow directions → moves to unresponsive state.</p> <p>Family member becomes very agitated, interrupting nurses with questions. Once nurse addresses family concerns, does respond to interventions and calmly sits at bedside.</p>	<p>Operator:</p> <p>No change in parameters</p> <p>Triggers:</p> <p>Patient responds to administration of 50% dextrose.</p>	<p>Learner Actions:</p> <ol style="list-style-type: none"> 1. Nurse reports CBG of “52” 2. Assesses swallow 3. Assures patency of IV 4. Administers 50% dextrose according to protocol 5. Assesses patient LOC while administering medication. 6. Assures additional staff is calming family member. 7. As patient awakens, responds to patient’s questions re. treatment and rationale. 	<p>Debriefing Points:</p> <ul style="list-style-type: none"> ▪ Confirms hypoglycemic reaction. ▪ Decision making re. treatment options. ▪ Orange juice vs. apple juice ▪ Strategies for dealing with disruptive family members during acute situations ▪ Non-verbal communication between team members ▪ Feedback loop

STATE / PATIENT STATUS	DESIRED ACTIONS & TRIGGERS TO MOVE TO NEXT STATE		
<p>4.</p> <p>Patient gradually responds and asks “what happened?” “Why am I so wet? Did I wet the bed”?</p> <p>Very concerned over family members distress. Family member very emotional.</p>	<p>Operator:</p> <p>130/80 HR – 92 RR – 20</p> <p>Triggers:</p> <p>Learner actions complete within 5 minutes</p>	<p>Learner Actions:</p> <ol style="list-style-type: none"> 1. Continue to monitor patient 2. Prepare SBAR report to charge nurse 3. Verbalize need to recheck CBG in 15 minutes ... or re-checks CBG (102) 4. Schedule patient/family teaching re. causes/prevention of hypoglycemic reaction 	<p>Debriefing Points</p> <ul style="list-style-type: none"> ▪ Significance of reassessment following treatment with 50% dextrose ▪ Criteria for repeating treatment. ▪ Timing of teaching for optimal results ▪ Differences in treatment options depending on timing of hypoglycemic reaction.
<p>Scenario End Point: Nurses need to leave to care for an additional patient returning from OR/PACU. Nurse communicates to patient and family, informing them to call the nurse immediately if concerned.</p>			
<p>Suggestions to <u>decrease</u> complexity: No family member in the room</p> <p>Suggestions to <u>increase</u> complexity: Lack of response to first treatment with 50% dextrose</p>			



Sutter Maternity &
Surgery Center

Patient Name: Betty Paulson DOB: 12/22/1941 Age: 69 MR#: 357901	Diagnosis: Cholelithiasis, Type 1 Diabetes, Hypertension
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† **No Known Allergies**
 † Allergies & Sensitivities

Date	Time	HEALTH CARE PROVIDER ORDERS AND SIGNATURE
	0800	Admit to inpatient services
		Vital signs per post-op protocol
		Titrate O ₂ to keep O ₂ sats greater than 92%
		Reinforce dressings PRN
		D5 ½ NS with 20 mEq KCl @ 100 mL/hour
		Convert to IV lock when PO intake adequate; flush lock PRN
		Hang 500 mL NS flush bag for IV piggybacks
		Hydrocodone/APAP (5/325) 1-2 tabs q6h PRN moderate to severe pain. Do not exceed 4 grams Acetaminophen in 24 hours) Give 1 tab for moderate pain and 2 tabs for severe pain Acetaminophen 650 mg PO q 4 h PRN mild pain or temperature > 38°C Pain Scale Key: Mild 1-3, Moderate 4-6, Severe 7-10
		Ondansetron (Zofran) 4 mg IV q 8 h PRN nausea
		Zolpidem (Ambien) 5 mg PO qHS PRN insomnia. May repeat x1 in 1 hour FSBG before meals and at bedtime.
		Cover FSBG with Lispro Insulin per sliding scale before meals and at bedtime
		Lispro 1 Unit subcutaneously before each meal
		Lantus insulin 10 Units subcutaneously every morning
		Follow sliding scale and hypoglycemia protocols
		Lisinopril 5 mg PO bid
		Ancef gm 1 IVPB q8h
		50% Dextrose 12.5 Gm/25 mL IV Push PRN, blood sugar less than 80.
		Foley catheter to gravity drainage. Notify MD if output less than 30 mL/hour
Signature		

1. History of present illness

History of Type 1 Diabetes x 30 years and a recent history of renal insufficiency. She developed decreased urine output in the first 24 hours after surgery and spiked a temp of 102.6. She remains hospitalized for observation and work up.

Primary Medical Diagnosis Cholecystitis & cholelithiasis with post-op complications

2. Review of Systems

CNS	Alert & oriented x 3
Cardiovascular	S ₁ , S ₂ Lispro without murmurs, distal pulses 1+, skin warm and dry, BP130/84
Pulmonary	Clear to auscultation
Renal	Within normal limits
GI/Elimination	RUQ (gall bladder) type pain
Hepatic/Pancreatic	History of cholecystitis
Endocrine	Type 1 Diabetes x 30 years
Heme/Coag	wnl
Musculoskeletal	wnl
Integument	1 cm dry ulcerated area (L) lateral ankle
Developmental Hx	Retired school teacher
Psych History	wnl
Social History	Denies ETOH; denies drug use. Widowed; lives alone. One adult child in the area.
Spiritual History	Practicing Lutheran
Alternative/ Complementary Medicine History	NA

Medication None Known Reaction:

allergies:
Food/other None Known Reaction:
allergies:

HISTORY & PHYSICAL EXAM	
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Hematology

8/16

WBC	<u>6.0</u>	(4.8 – 10.8)
RBC	<u>3.9</u>	(4.2 – 6.0)
HGB	<u>14 gm.</u>	(12.0 – 16.0)
HCT	<u>51.0</u>	(34.0 – 43.0)
MCV	_____	(81.0 – 99.0)
MCH	_____	(27.0 – 31.0)
MCHC	_____	(32.0 – 36.0)
RDW	_____	(11.5 – 14.5)
Plat Count	<u>250</u>	(150 –400)
M Plat Ct	_____	(7.4 – 10.4)
PT	_____	(10.5-13.0sec)
INR	_____	
PTT	_____	(21-36sec)

8/16 @ 8:00 pm

	<u>9.8</u>	

	<u>13.2</u>	
	<u>47</u>	

Chemistry

Na	<u>136</u>	(135-153)
K+	<u>4.8</u>	(3.6-5.4)
Cl	<u>102</u>	(97-107)
Phosphorus	<u>3.5</u>	(2.7-4.5)
Mg	<u>1.2</u>	(1.8-3.0)
Ca ⁺⁺	<u>9.0</u>	(8.7-10.4)
Glu	<u>130</u>	(70-100)
A1C	<u>6.0</u>	(4.0-5.9]
Bun	<u>26</u>	(7-29)
Creat	<u>0.8</u>	(0.5-1.4)
GFR	<u>55</u>	(> 60)

LABORATORY REPORTS

Patient Name: Betty Paulson	Diagnosis: Cholelithiasis Insulin Dependent Diabetes
DOB:	
Age: 69	
MR#:	
Lispro Sliding Scale q AC & HS (0800, 1200, 1800, 2200)	
<i>If FSBG is less than 70 follow hypoglycemic protocol (Give 4 ounces orange or apple juice or D50 1 amp IV, recheck in 15 minutes and call MD)</i>	
Blood Sugar	Insulin
70 - 100	∅
101 - 130	1 Unit
131 - 150	2 units
151 –190	2 units
191 – 220	3 units
221 – 250	4 units
251 – 280	5 units
281 – 310	6 units
311 – 340	7 units
341– 379	8 units
380 – 400	9 units
401 – 430	10 units
431 – 460	11 units
<i>Greater than 461</i>	<i>call lab to draw blood glucose and call MD</i>