Analysis Plan for Service IO and Service Event Harmonization(6-17-99)

Introduction: As demonstrated during TC Version 3 message building efforts, significant work is required to adequately harmonize the state transition diagrams of Service Event and Service Intent_or_Order. Two solutions have been proposed. One involves retaining a separation between the Master Service class, Service Event class and the Service Intent_or_Order class, harmonizing the subclasses, and developing messages based on the three super-classes. The second is merging the three super-classes, which eliminates redundancy, but increases the number of states represented by one class, complicating the state transition diagram for the merged class.
Goal: Choose solution with minimum complexity for message development and implementation.
Justification Criterion: Reduced cost of implementation for HL7 and HL7 customers
Risks: Need stable RIM by 2001; need resources to stop RIM tuning and get to message development; chosen solution will persist for many years
Plan: Create three teams to prepare for ½ day presentation to M&M at Indy:

- Team 1 to identify test environment use cases for robustness testing of the model
- Team 2 to harmonize the two classes and demonstrate MIM, State transition diagrams, MOD, and HMD discussion under test environment use cases to M&M at Indy
- Team 3 to merge two classes into one structure and demonstrate same development under test environment use cases to M&M at Indy

Potential Outcomes:

- Team 2 or Team 3 gives up before M&M—Team 1 buys the beers
- Team 2 and Team 3 present at M&M in Indy—M&M gives suggestions and buys the beers
- Team 2 and Team 3 negotiate single proposal after M&M and submit for TC voting in September—HL7 buys the beers
- No single solution to disagreement and RIM stays unstable—No beers

Details:

- Minimum analysis and review process:
  - Select Teams One, Two and Three
  - Team 1 requests and develops use cases for test environment and identifies messages and actor level trigger events
  - Pre-M&M--Out of cycle Meeting—Date and Place to be negotiated(or could this occur by email?)
    - Team 1 presents Use Cases to Teams 2&3
    - Teams 2 & 3 meet independently to harmonize class hierarchies into one or two respectively and then build MIM's, State Transition Diagrams, MODS, and messages
      - Team 2 makes sure all action subclass attributes needed are present in both SE and SIO hierarchies
        - Add lifecycles to two classes SIO and SE as needed
        - Use OCL if needed to isolate attributes to selected lifecycle stages
      - Team 3 begins from Service Event Hierarchy with revised subclass model:
        - Add attributes to structure common to all lifecycle stages from intent to completion
        - Add attributes plus OCL statements for attributes applicable to only selected lifecycle stages
  - Robustness Comparison M&M presentation— ½ Day at Harmonization in Indy
    - Session One--Review Service Event Model
    - Session Two—Use Case Testing Environment
    - Session Threee—Side by Side Comparison of Interaction Diagrams
    - Session Three—Side by Side Comparison MIM's
    - Session Four—Side by Side Comparison MOD's
    - Session Five—Side by Side Comparison State Transition diagrams of separated classes and merged classes
    - Session Six—Comparison of HMD issues
    - Session Seven—M&M Discussion and M&M charges to modify

- Follow-up Out of Cycle Meeting—Date and Place Unknown
  - Apply M&M suggestions to proposal(s)
- Proposal at September HL7 meeting

Team 1:

Dan Russler(MKH)
Heather Von Allmen(SMS)
Rita H Barsoum(KP)
Joann Larson(KP)
Greg.J.Thomas(KP)
others

Team 1 Deliverables:

Initial Storyboard Straw Man:

Precondition: During a hospital stay for a R knee replacement for DJD, a clinician sees a patient on 4-5-2000 at 12pm who is now 3 days post-op. A temperature of 101 had been documented by nursing at 9am as well as routine, post-op knee questions and exam, which reported minimal knee pain(2+) and no wound redness. Since surgery, the patient has been receiving D_5¼NS with 20meq/l potassium IV at 75cc/hr until discontinued.

Body Text: The clinician rechecks temp(101.4), diagnoses fever and assigns the "fever after knee replacement" protocol to the patient. The protocol includes (among other things): a recheck of temperature; a question about pain in the knee with surgery; an examination for redness around the knee incision; an order for a CBC; a diagnosis of fever with assignment to the problem list as item Fever; a goal of rule-out joint space infection by 6pm; an order to consult Infectious Disease for the fever by 5pm; and a patient results review session by clinician to inform patient of condition that completes the review cycle for each result scheduled at 7pm. Clinician deletes recheck temp from protocol since already done. Clinician performs questions and physical exam and documents findings and changes in findings(Temp 101.4, knee pain 4+, wound redness mild), problem(Fever), goal(rule out joint infection), and orders(CBC, ID consult, and f/u review) in progress note. Clinician signs progress note.

Lab draws, performs, and reports CBC(WBC 15000).

An Infectious Disease consultant reviews data, examines patient, and performs joint space aspiration of cloudy fluid at 4pm and gets a "stat Gram stain with culture & sensitivity," which is recorded as a verbal order by Nurse who has nursing assistant take specimen to lab. ID Consult then diagnoses "R Knee Joint Space Infection" supported by above findings and cloudy synovial fluid. Gram stain results demonstrate gram positive cocci at 5pm. ID Consult reviews gram stain result, diagnoses "probable staph aureus," and suggests Cefazolin 1g qh8.

Later, at 7pm, Clinician discontinues "r/o goal," documents showing patients results of findings, lab, and ID consult diagnosis. Patient verbally consents to recommended IVantibiotic and clinician records agreement.

The clinician places an order for 1gm Cefazolin to be administered every 8 hours for five days to treat "R Knee Joint Space Infection" noted above. Upon receipt of this order, the pharmacist revises it to be given piggyback in a solution of 50ml D5W and run in over a one hour time period. Administration of each dose is documented by the nursing staff.

One day later, lab returns the finding of staph aureus on culture and begins sensitivity testing. The Clinician changes diagnosis to R Knee Joint Space Infection secondary to staph aureus as demonstrated on the culture. Six hours subsequent, the lab report indicates sensitivity to Cefazolin.

After 4 more days, the patient has shown sufficient response to treatment to be discharged. The clinician places an order for the following prescriptions: 1) Dicloxacillin 500 mgm QID P.O. X 10 days; no refills; 2) Vicodin E.S. 1 – 2 tabs q 4 – 6 hrs prn for pain (not to exceed 6 tabs per day)2 refills, 30 tabs; and 3) Colace 250mg 1 capsule at HS, 100 capsules, no refills. 4) Walker X 4wks.

The clinician writes an order for Physical Therapy consult to follow-up at home. The patient is to return to orthopedic clinic in 10 days. PT supplies walker, instructs on use and documents delivery and instructions.

The pharmacist acknowledges receipt of prescriptions, validates the licensure of clinician, and fills the dicloxacillin with NDC # 00332-3125-09 and fills Colace prescription with docusate sodium NDC# 00677-0192-01. The pharmacist makes a therapeutic substitution hydrocodone bitartrate/acetaminophen(5mg/500mg) NDC # 00044-0727-02 3 tabs for the Vicodin E.S NDC#00044-0728-02 2tabs. The patient's wife appears at the pharmacy to pick up the medication from the pharmacy clerk. She declines the analgesic. The pharmacy clerk accepts the co-payment of $5 each for the antibiotic and the Colace. The pharmacy clerk notes the reason for declining the analgesic. The pharmacist consults with the wife regarding the use and purpose of the prescribed medications. The pharmacy technician returns the Vicodin to stock.

The next day the Physical Therapist sees the patient at home and the patient has difficulty with the regimen due to pain. The physical therapist recommends that the patient take a pain medication prior to the next session. The patient calls pharmacy and requests that the Vicodin prescription be filled. The pharmacist confirms existence of prescription and fills it. The patient's wife picks up the prescription.

Two weeks later the patient calls and asks for a refill on the Vicodin. The pharmacist confirms that a refill is valid and fills the prescription.

Decomposition of Storyboard to Use Cases:

Precondition:

1) Registration Clerk enters admission diagnosis of DJD on patient.
2) Surgeon replaces R knee on patient on 4-2-2000 and records event in op note with value "successful."
3) Surgeon orders IV of 1000 ml D5/.25NS with 20meq Potassium run in at 75cc/hr until d/c.
4) Nurse takes temp of 101 on patient on 4-5-2000 at 9am.
5) Nurse asks patient about R knee pain and receives value of 2+.
6) Nurse checks R knee wound redness and records "none."

Body Text:

7) Clinician rechecks temp at 12pm and notes value of 101.4.
8) Clinician makes diagnosis of fever on patient supported by temps of 101 and 101.4.
9) Clinician assigns protocol "fever after knee replacement" to problem Fever on patient with reason diagnosis Fever.
10) Clinician deletes recheck of temperature from protocol citing recent recheck to document variance.
11) Clinician enters item on Problem List for patient named by diagnosis Fever.
12) Clinician asks patient about R knee pain and records answer as 4+.
13) Clinician compares 4+ with former observation 2+ and R knee pain comparison value is "worsened."
14) Clinician checks R knee wound redness and records "mild."
15) Clinician compares "mild" with former observation "none" and R knee wound redness comparison value is "worsened."
16) Clinician creates goal for patient of Rule-out Joint Space Infection by 6pm with reasons Diagnosis Fever, knee pain worsened and knee wound redness worsened.
17) Clinician confirms orders of CBC, Consult ID, and f/u review on patient with reason Diagnosis Fever and goal of Rule Out Joint Space Infection by 6pm.
18) Clinician commits note to permanent(signs note).
19) Scheduling acknowledges receipt of patient review session at 7pm.
20) Scheduling notifies Clinician of patient review session at 7pm
21) Clinician acknowledges scheduling of patient review session at 7pm
22) Med Tech acknowledges receipt of order for CBC.
23) Med Tech draws CBC and time is recorded.
24) Clinician views CBC draw time.
25) MedTech places blood in machine and assigns result with WBC value of 15000 to patient.
26) Clinician acknowledges receipt of CBC report.
27) ID consult acknowledges receipt of order for ID consult with consult acceptance.

ID consult examines patient and data and aspirates cloudy synovial fluid from right knee joint space.

28) Nurse documents verbal order from ID consult for stat synovial fluid gram stain, culture, and sensitivity with diagnosis Fever.
29) Med Tech acknowledges receipt of order for synovial fluid exam.
30) Nurse records nursing assistant transport of synovial fluid to lab.
31) ID consult documents consult diagnosis of "Right Knee Joint Space Infection" supported by temp, progress note, knee findings, CBC and cloudy synovial fluid.
32) Med Tech receives synovial fluid specimen at 4:45 PM.
33) Med Tech places culture plates in incubator at 4:50 PM
34) Med Tech performs gram stain and reports finding of gram positive cocci to clinician at 5 PM.
35) ID consult reviews gram stain report.
36) ID consult cosigns verbal order for gram stain, culture and sensitivity.
37) ID consult writes second progress note with updated diagnosis of "R Knee Joint Space Infection, probable staph aureus," supported by gram stain result.
38) ID consult recommends Cefazolin 1g IV q8h
39) ID consult signs progress note.
40) Clinician acknowledges receipt of ID consult reports.

41) Clinician compares goal "r/o of R Knee Joint Space Infection" by 6pm to consult diagnosis and discontinues goal due to diagnosis by ID consult.
42) Clinician records at 7pm review of temp, knee findings, CBC, gram stain and ID consult diagnosis with patient
43) Clinician documents patient level of understanding of results review as "good."
44) Clinician documents patient verbal consent to risks of IV antibiotic.
45) Clinician orders Cefazolin(GPI #02100015102115) 1g IV q8h for 5 days with reason pointing to former diagnosis of "Right Knee Joint Space Infection, probable staph aureus."
46) Pharmacy revises order to include 50ml of D5W given piggyback and run in over 1 hour.
47) Pharmacy fills Cefazolin order with Cefazolin NDC # 00093-0705-07
48) Pharmacy acknowledges receipt of order for Cefazolin with revisions.
49) Pharmacy tech transports Cefazolin from pharmacy to medication cart and signs Cefazolin in.
50) RN hangs a bottle of D5 .25NS 1000cc at 50 cc/hr via pump, and records the start time. (insert time).
51) RN hangs a piggy back of the Cefazolin in 50 ml D5W and records the administration time (insert time).
52) RN records Cefazolin infusion is complete after one 30 minutes.
53) RN hangs the second dose of Cefazolin eight hours later at (insert time), and records administration.
54) RN records Cefazolin infusion is complete after 30 minutes.
55) RN removes the completed bottle of D5 .25NS and hangs a new bottle approximately 20 hours after the previous bottle and documents.
56) The next day at 1PM Med Tech reads the culture and reports moderate growth of Staph Aureus
57) Med Tech sets up sensitivities at 2 PM
58) Med tech reads sensitivities at 8 PM and reports sensitivity to Cefazolin.
59) Clinician views culture report.
60) Clinician changes diagnosis on problem list to "R Knee Joint Space Infection secondary to Staph Aureus" as demonstrated on culture report.

.....

61) The clinician writes the discharge order on 4-9-2000.
62) Clinician orders walker from Hospital PT

The clinician sends a discharge prescription with the current diagnosis to the pharmacy for:

63) 1) Dicloxacillin 500 mgm QID P.O. times 10 days no refills GPI # 01300020100115;
64) 2) Vicodin E.S. 1 – 2 tabs q 4 – 6 hrs prn for pain 2 refills, 30 tabs GPI # 65991702100350; and
65) 3) Colace 250mg 1 capsule at HS, 100 capsules, no refills GPI # 46500010300120.
66) The clinician writes an order for Home Physical Therapy consult to follow-up at home one day after discharge.
67) The clinician writes an order for a follow-up appointment to be scheduled in Orthopedic Clinic in 10 days.
68) Scheduling fills order for appointment in Orthopedic clinic and informs patient.
69) Hospital PT acknowledges receipt of walker order.
70) Hospital PT supplies walker, instructs on use and documents delivery and instructions.
71) The pharmacist validates licensure of clinician and fills the dicloxacillin with NDC#00332-3125-09 and acknowledges order.
72) The pharmacist validates licensure of clinician and fills the Colace prescription with docusate sodium NDC # 00677-0192-0 and acknowledges order.
73) The pharmacist validates licensure and DEA # and makes a therapeutic substitution hydrocodone bitartrate/acetaminophen(5mg/500mg) NDC # 00044-0727-02 3 tabs for the Vicodin E.S NDC#00044-0728-02 2tabs not to exceed 8 tabs per day and acknowledges order.
74) The pharmacy clerk records the co-payment of $5 each for the antibiotic and the Colace when medications picked up.
75) The pharmacist consults with the wife regarding the use and purpose of the prescribed medications and documents interaction.
76) The pharmacist records the reason for declining the Vicodin as "feeling well."
77) The pharmacy technician returns the Vicodin to stock.
78) Home PT accepts the consult from clinician.
79) Physical Therapist sees the patient at home on 4-10-2000 and documents difficulty with the regimen due to pain and recommends filling prescription.

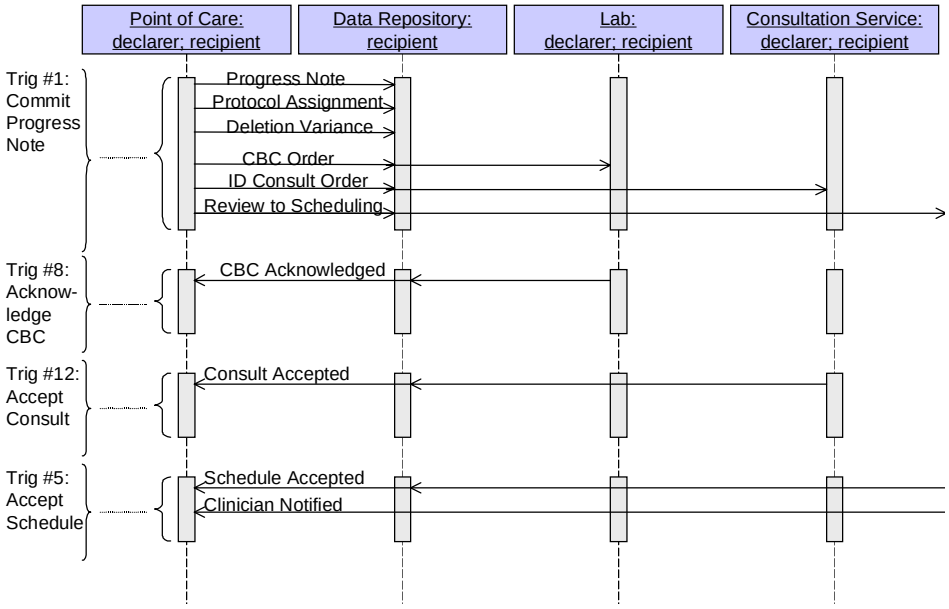
80) The patient calls pharmacy and requests that the Vicodin prescription be filled.
81) The pharmacist confirms existence of prescription and fills it.
82) The pharmacist documents the delivery of the prescription to the patient's wife.
83) The pharmacist refills the Vicodin two weeks later on request of the patient.

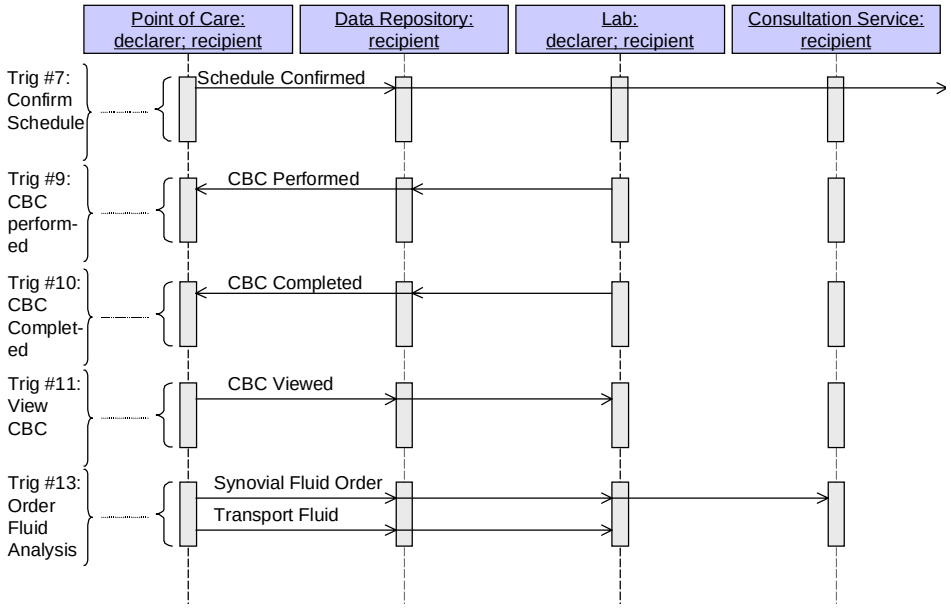
The applications support the following message level use cases(among others) with trigger events and relations as noted:

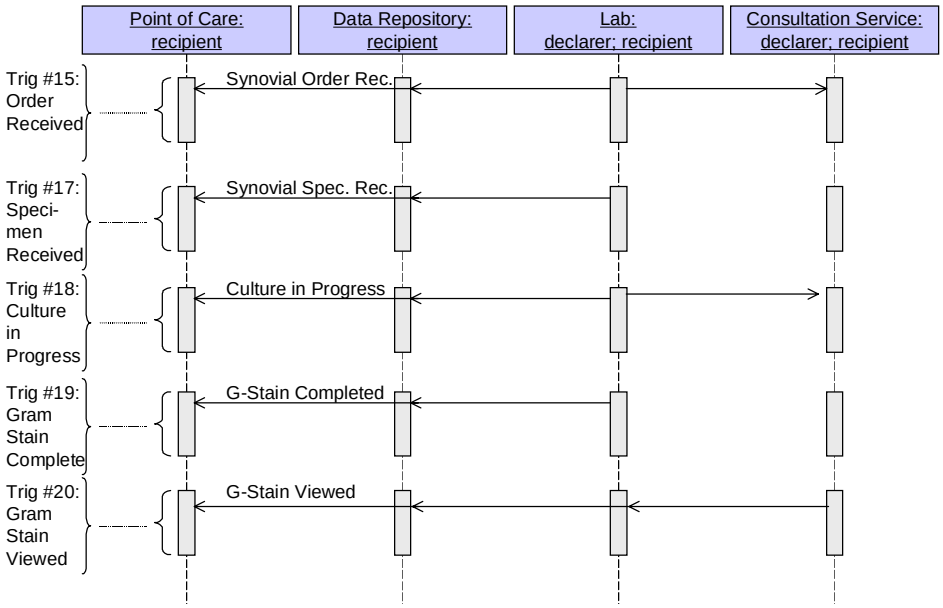
1) Sending Progress Note to data repository on "commit" from Clinician from UC#18 including:
    - Documentation Recheck Temp 100.4 at 12pm from UC#7
    - New Diagnosis Fever supported by Temps 101 and 101.4 from UC#8
    - Assignment of "Fever after Knee Replacement" protocol to patient with Diagnosis Fever as Reason (which instantiates all actions noted above for patient as intended) from UC#9.
    - Variance notation from UC#10
    - Fever added to Problem List from UC#11.
    - Documentation of knee pain questions from UC#12-13.
    - Documentation of Physical Findings including Knee wound redness from UC#14-15.
    - Documentation of new goal pertaining to Problem of fever from UC#16
    - Sending order of CBC to lab for Reason Fever and sending order of ID consult to ID Associates for Reason Fever and sending order for review with patient to scheduling from UC#17.
2) Sending order of CBC to lab for Reason Fever from UC #17 on trigger UC#18
3) Sending order of ID consult to ID Associates for Reason Fever from UC#17 on trigger UC#18
4) Sending order for f/u review with patient to scheduling from UC#17 on trigger UC#18
5) Notification from scheduling of receipt of f/u review with patient from UC#19
6) Notification of clinician from scheduling of f/u review with patient from UC#20 on trigger UC#19
7) Acknowledgement by Clinician of f/u review with patient at 7pm from UC#21
8) Notification from lab of "CBC received" from UC#22
9) Notification from lab of "CBC performed" from UC#23-24.
10) Notification from lab of CBC completed, with WBC 15000 and other component results normal, from UC#25.
11) Acknowledgment of viewing of CBC by Clinician to lab from UC#26
12) Notification from ID Associates of "ID consult accepted" from UC#27
13) Verbal order from ID consult to lab via nursing for stat synovial fluid gram stain, culture and sensitivity from UC#28
14) Notification from nursing to lab that synovial fluid being transported by nursing assistant from UC#30 on trigger UC#28
15) Notification from Med Tech of verbal order received from UC#29
16) Sending Consult Note to data repository with documentation of consult diagnosis Right Knee Joint Infection supported by temp, knee findings, and CBC from UC#31
17) Notification from Lab of synovial fluid received from UC #32
18) Notification from Lab of synovial fluid culture "in progress" from UC#33
19) Notification from Lab of "gram stain" completed, with gram positive cocci from UC #34
20) Acknowledgment of viewing of gram stain report by ID consult from UC#35
21) Cosignature of verbal order by ID consult from UC#36
22) Send progress note to data repository from UC#39 including:
    - Diagnosis of "R Knee Joint Space Infection, probable staph aureus," supported by gram stain result from UC#37
    - Recommendation for Cefazolin from UC#38
23) Acknowledgement that Clinician views first consult note from UC#40
24) Acknowledgement that Clinician views second consult note from UC#40
25) Send goal discontinuation due to ID consult diagnosis from UC#41
26) Send documentation of viewing of temp, knee findings, CBC, gram stain and ID consult diagnosis by Patient to repository from UC#42 along with documentation of patient understanding of results as "good" by Clinician from UC#43.
27) Patient consent of IV antibiotic from UC#44.

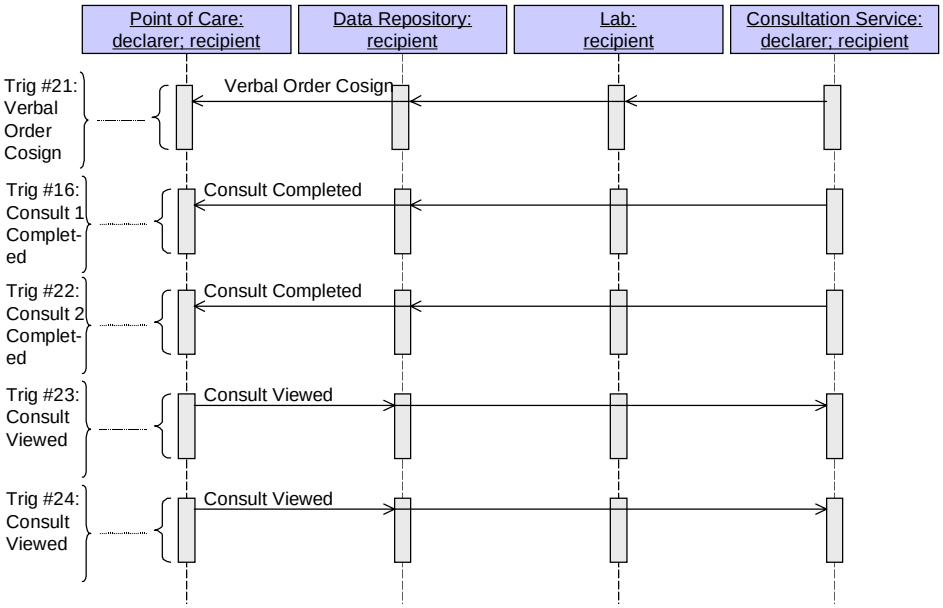
28) Sending order for Cefazolin to pharmacy from UC #45.
29) Acknowledgment of Cefazolin order with revisions. From UC #46-48.
30) Notification of Cefazolin transport from pharmacy to nursing from UC#49
31) Send documentation of administration of D5 .25 NS w/ potassium IV started to pharmacy from UC #50.
32) Send documentation of administration of D5W w/ Cefazolin piggyback order started(administration 1) to pharmacy from UC #51
33) Send documentation of administration of Cefazolin completed to pharmacy from UC#52.
34) Send documentation of administration of D5W w/ Cefazolin piggyback started(administration 2) from UC #53
35) Send documentation of administration of Cefazolin completed to pharmacy from UC#54.
36) Send documentation of administration of D5 .25 NS w/ potassium IV completed to pharmacy from UC #55.
37) Send documentation of administration of D5 .25 NS w/ potassium IV started to pharmacy from UC #55.
38) Notification from Lab of "culture" completed, with gram positive cocci, sensitivities to follow from UC #56
39) Notification from Lab of sensitivities "performed" from UC #57
40) Notification from Lab of "sensitivities" completed, with sensitivity to Cefazolin from UC #58
41) Acknowledgement that Clinician views culture and sensitivity report from UC#59.
42) Sending change of diagnosis by clinician to data repository from UC#60
43) Sending discharge by clinician to ADT system from UC#61
44) Sending order for walker to PT from UC#62
45) Sending orders to pharmacy for: 1) Dicloxacillin 500 mg QID P.O. X 10 days, no refills(GPI # 01300020100115); 2) Vicodin E.S. 1 – 2 tabs q 4 – 6 hrs prn for pain 2 refills, 30 tabs(GPI # 65991702100350); and 3) Colace 250mg 1 capsule at HS, 100 capsules, no refills(GPI # 46500010300120) from UC# 63-65.
46) Acknowledgment from Pharmacy of receipt of discharge prescriptions with revisions from UC# 71-73
47) Acknowledgment from Hospital PT of receipt of walker prescription from UC# 69
48) Sending of documentation by Hospital PT of crutch delivery and instruction from UC#70
49) Sending order for PT consult by Clinician to Home PT Service from UC#66
50) Acceptance of PT order by Home PT Service from UC#78
51) Sending order by Clinician to scheduling for f/u appointment in Orthopedic Clinic from UC#67
52) Acknowledgement by Scheduling that order is received and patient is notified from UC#68.
53) Notification from Pharmacy to clinician and data repository that the dicloxacillin and docusate sodium were dispensed to the patient, analgesic declined, consultation was given, total co-payment of $5 each was collected. From UC# 74-76.
54) Notification from Pharmacy to Pharmacy that hydrocodone was returned to stock from UC#77.
55) Acknowledgment from Home Physical Therapy of receipt of Physical Therapy consult from UC# 78
56) Sends PT consult note to repository with observation of pain from UC#79
57) Notification from Pharmacy to Pharmacy that patient requests hydrocodone prescription be filled from UC#80.
58) Notification from Pharmacy to Pharmacy that pharmacist approves filling of hydrocodone from UC#81.
59) Notification from Pharmacy to Clinician and Repository that the hydrocodone has been dispensed to the wife and consultation was given from UC# 82
60) Notification from Pharmacy to Repository that a refill of the hydrocodone has been dispensed to the patient from UC#83.

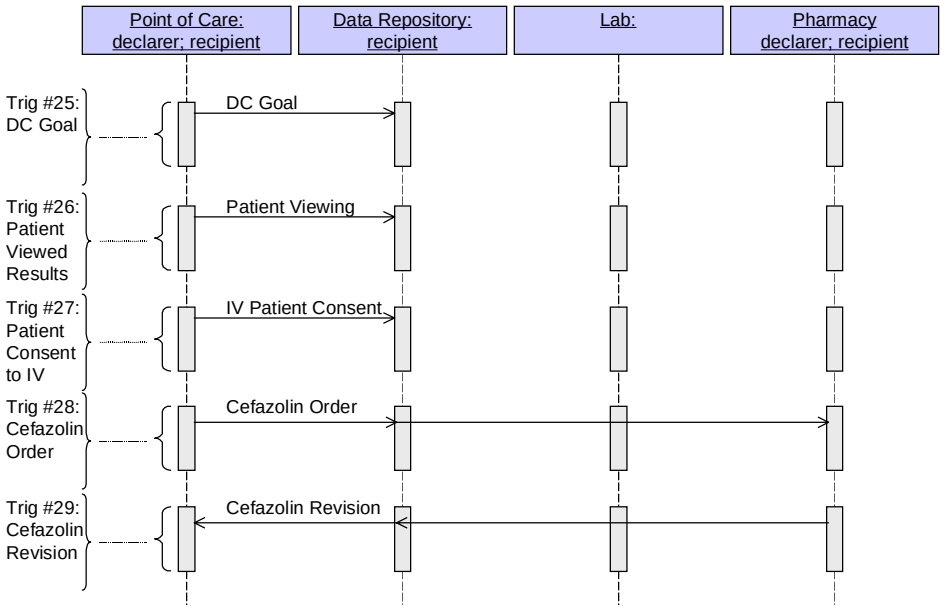
Interaction Diagrams:

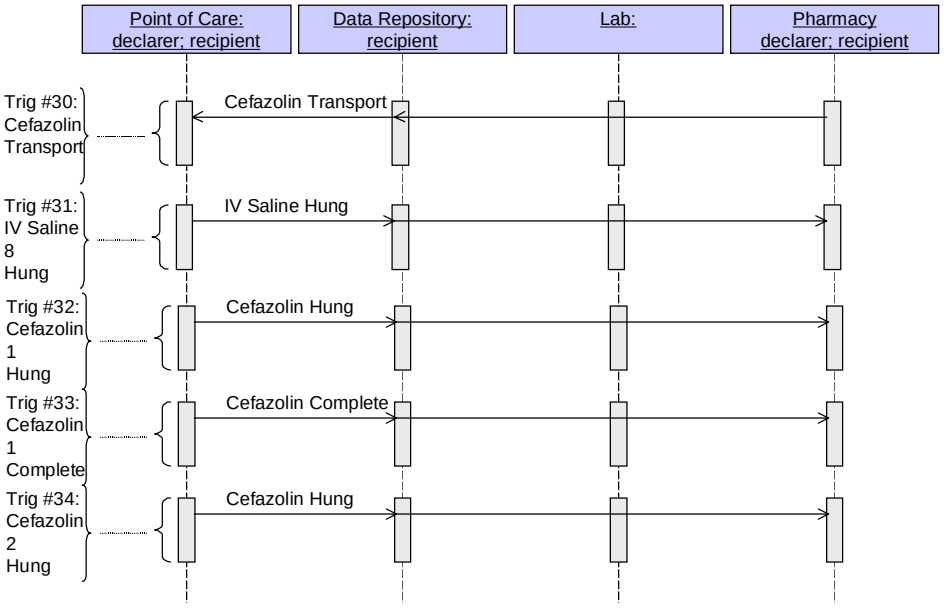


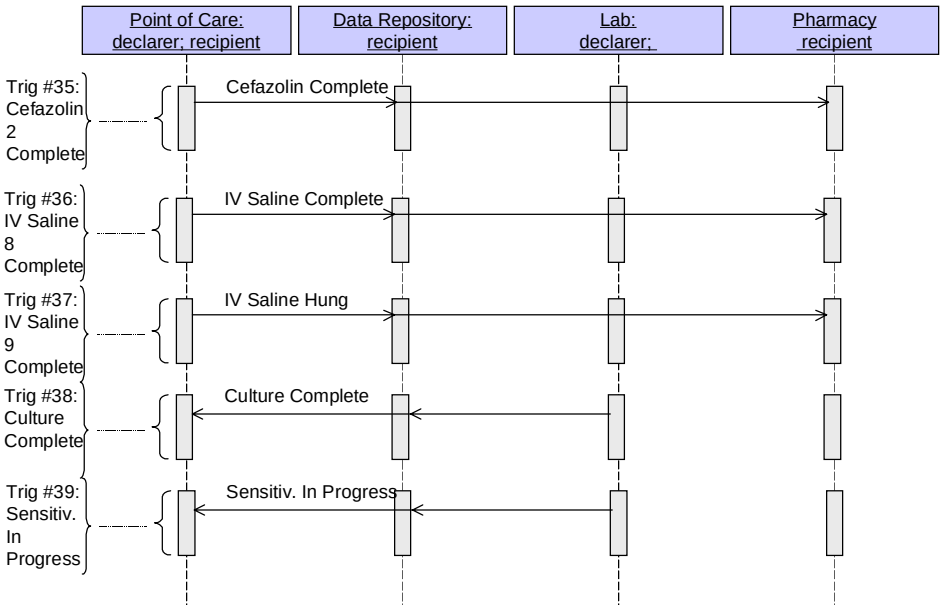


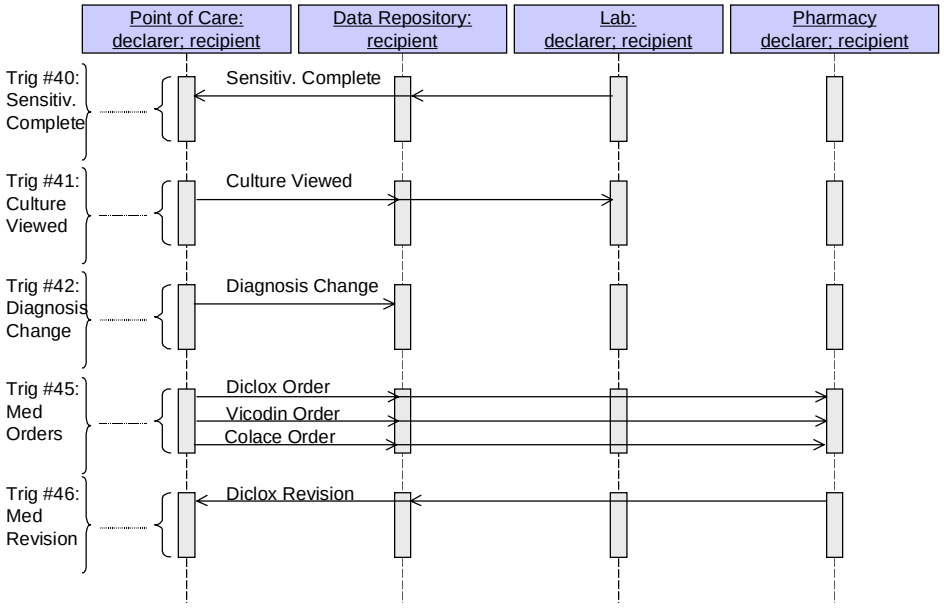

Point of Care: recipient
Data Repository: recipient
Lab: declarer; recipient
Consultation Service: declarer; recipient
Trig #15: Order Received
Synovial Order Rec.
Trig #17: Speci-men Received
Synovial Spec. Rec.
Trig #18: Culture in Progress
Culture in Progress
Trig #19: Gram Stain Complete
G-Stain Completed
Trig #20: Gram Stain Viewed
G-Stain Viewed

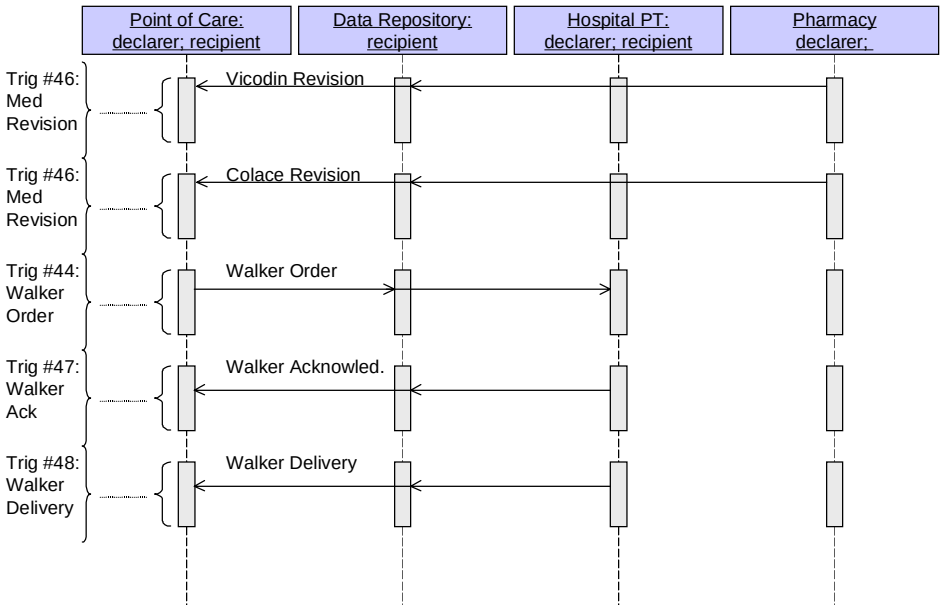

Point of Care: declarer; recipient
Data Repository: recipient
Lab: recipient
Consultation Service: declarer; recipient
Trig #21: Verbal Order Cosign
Verbal Order Cosign
Trig #16: Consult 1 Complet-ed
Consult Completed
Trig #22: Consult 2 Complet-ed
Consult Completed
Trig #23: Consult Viewed
Consult Viewed
Trig #24: Consult Viewed
Consult Viewed

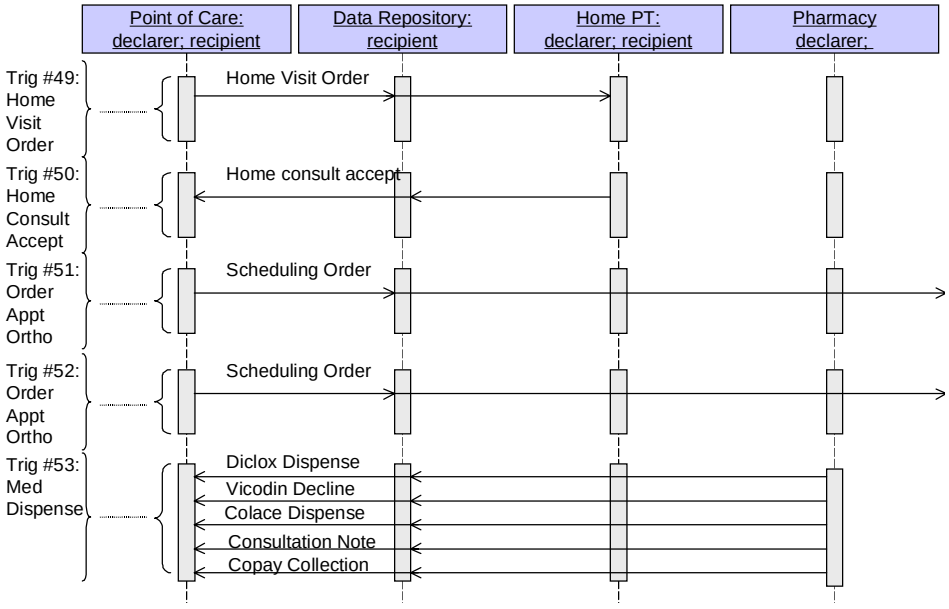

Point of Care: declarer; recipient
Data Repository: recipient
Lab:
Pharmacy declarer; recipient
Trig #25: DC Goal
DC Goal
Trig #26: Patient Viewed Results
Patient Viewing
Trig #27: Patient Consent to IV
IV Patient Consent
Trig #28: Cefazolin Order
Cefazolin Order
Trig #29: Cefazolin Revision
Cefazolin Revision

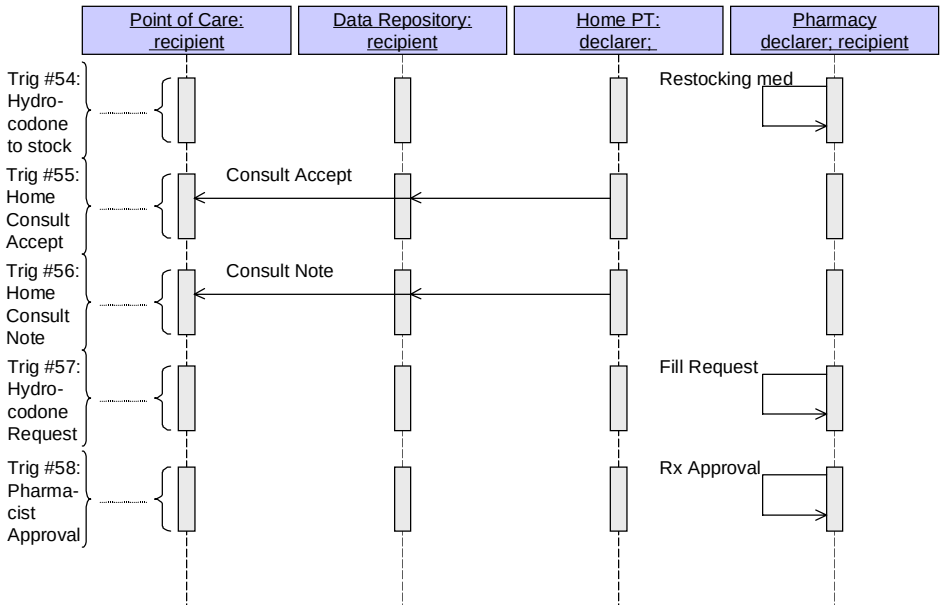

Point of Care: declarer; recipient
Data Repository: recipient
Lab:
Pharmacy declarer; recipient
Trig #30: Cefazolin Transport
Cefazolin Transport
Trig #31: IV Saline 8 Hung
IV Saline Hung
Trig #32: Cefazolin 1 Hung
Cefazolin Hung
Trig #33: Cefazolin 1 Complete
Cefazolin Complete
Trig #34: Cefazolin 2 Hung
Cefazolin Hung

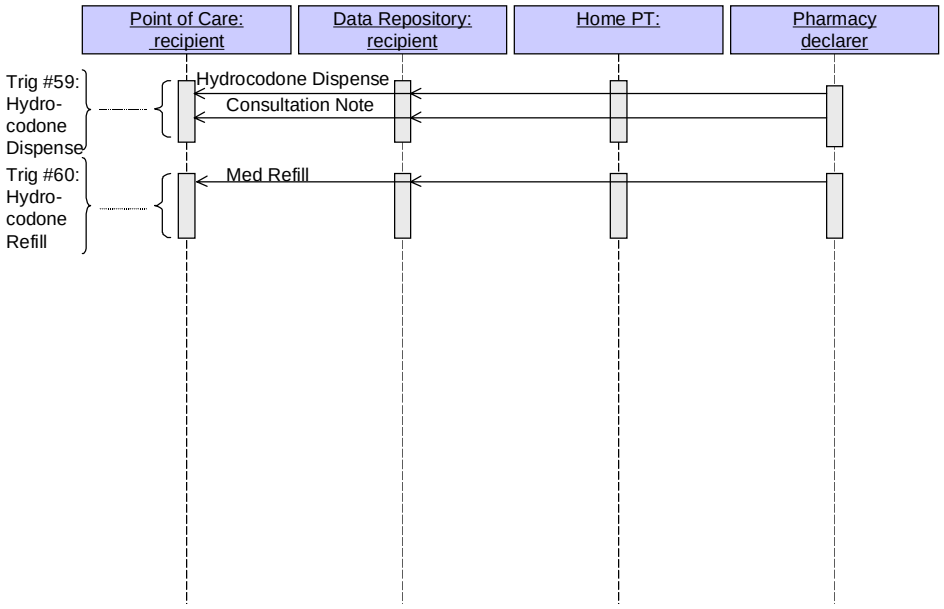

Point of Care: declarer; recipient
Data Repository: recipient
Lab: declarer;
Pharmacy recipient
Trig #35: Cefazolin 2 Complete
Cefazolin Complete
Trig #36: IV Saline 8 Complete
IV Saline Complete
Trig #37: IV Saline 9 Complete
IV Saline Hung
Trig #38: Culture Complete
Culture Complete
Trig #39: Sensitiv. In Progress
Sensitiv. In Progress


Point of Care: declarer; recipient
Data Repository: recipient
Lab: declarer; recipient
Pharmacy declarer; recipient
Trig #40: Sensitiv. Complete
Sensitiv. Complete
Trig #41: Culture Viewed
Culture Viewed
Trig #42: Diagnosis Change
Diagnosis Change
Trig #45: Med Orders
Diclox Order
Vicodin Order
Colace Order
Trig #46: Med Revision
Diclox Revision


Point of Care: declarer; recipient
Data Repository: recipient
Hospital PT: declarer; recipient
Pharmacy declarer;
Trig #46: Med Revision
Vicodin Revision
Trig #46: Med Revision
Colace Revision
Trig #44: Walker Order
Walker Order
Trig #47: Walker Ack
Walker Acknowled.
Trig #48: Walker Delivery
Walker Delivery


Point of Care: declarer; recipient
Data Repository: recipient
Home PT: declarer; recipient
Pharmacy declarer;
Trig #49: Home Visit Order
Home Visit Order
Trig #50: Home Consult Accept
Home consult accept
Trig #51: Order Appt Ortho
Scheduling Order
Trig #52: Order Appt Ortho
Scheduling Order
Trig #53: Med Dispense
Diclox Dispense
Vicodin Decline
Colace Dispense
Consultation Note
Copay Collection


Point of Care: recipient
Data Repository: recipient
Home PT: declarer;
Pharmacy declarer; recipient
Trig #54: Hydro-codone to stock
Restocking med
Trig #55: Home Consult Accept
Consult Accept
Trig #56: Home Consult Note
Consult Note
Trig #57: Hydro-codone Request
Fill Request
Trig #58: Pharma-cist Approval
Rx Approval


Point of Care: recipient
Data Repository: recipient
Home PT:
Pharmacy declarer
Trig #59: Hydro-codone Dispense
Hydrocodone Dispense
Consultation Note
Trig #60: Hydro-codone Refill
Med Refill

Vocabulary Terms(still incomplete):

For this exercise, a vocabulary will be made up(codes and descriptions) that will identify the concepts needed for each message in the interaction diagram.

Vocabulary Name: Service Harmonization Version 1.0

Trigger #1—Progress Note Signature	
Code	**Description**
000001	Oral Temperature
000002	Post-op-phase diagnosis
000003	Fever
000004	Post-op-phase guideline assignment
000005	Fever after knee replacement
000006	Guideline deletion variance assignment
000007	Recently performed
000008	Problem list assignment
000009	Pain question-5 point scale
00000a	Pain trending
00000b	Worsened
00000c	Wound redness
00000d	mild
00000e	Wound redness trending
00000f	Rule-out goal assignment
00000g	Joint Space Infection
00000h	Progress note signature
00000s	Support—as in “supported by”
00000t	Reason:precondition—as in “has reason”
00000u	Name—as in “named by”
00000v	pertainsTo
00000w	Condition thread:revision
00000x	List
00000y	Precondition
00000z	Deletion variance
000010	

Trigger #28—Cefazolin Order	
Code	**Description**
00000i	Cefazolin(1g/vial) Administration
00000j	Peripheral IV Route
000002	Post-op-phase diagnosis
00000g	Joint Space Infection
00000k	Staph Aureus Infection

Trigger #45—Discharge Prescription	
Code	**Description**
00000l	Dicloxacillin(500mg/tab) Administration
00000m	oral Route

00000n	Discharge diagnosis
00000g	Joint Space Infection
00000k	Staph Aureus Infection
00000o	Vicodin E.S. Administration
00000p	Colace Administration

Trigger #46—Discharge Prescription Revision	
Code	**Description**
00000l	Dicloxacillin(500mg/tab) Administration
00000m	oral Route
00000n	Discharge diagnosis
00000g	Joint Space Infection
00000k	Staph Aureus Infection
00000o	Vicodin E.S. Administration
00000p	Colace Administration
00000q	Hydrocodone bitartrate/acetaminophen(5mg/500mg/tab) Administration
00000r	Docusate sodium(50mg/tab) Administration

Guidelines and assistance:

1. Concentrate on clear illustrations of key classes and point to CMETs when possible to simplify illustrations.
2. Use documentation from current RIM on use cases, definitions and examples to support statements.
3. Use most recent terminology for Service Relationships including "List Link, Conditional Link, and Judgement Link" as subclasses and Judgement Link types "supported_by, has_reason, chainlinks, named_by, pertains_to." These are all illustrated in the following use cases for Service Event(which you are free to diagram as instance diagrams, which is really best practice):