A **precondition** specifies the conditions to be met before executing an operation call while a **postcondition** indicates what is to be achieved after executing an operation call.

For example, the precondition for the operation call apply in the Cast class specifies that a patient must be x-rayed before applying a cast. The postcondition here implies that once the precondition is met, the cast procedure is complete.

an **invariant** is a condition that can be relied upon to be true during the execution of a program, or during some portion of it.

START ALGORITHM

context Severity:: assessWalk(p: Patient)

pre: p.obtain\_patient\_info = true

post: p.walk\_examined = true

context Severity:: checkBreathing(p: Patient)

pre: p.walk\_examined = true

post: p.breathing\_checked=true

context breathing :: changePosition(p: Patient)

pre: p.examine\_breathing=true

post: p.position\_changed=true

context breathing :: recheck(p: Patient)

pre: p.position\_changed=true

post: p.recheck\_breathing=true

context Severity:: measureRespiratoryRate(p: Patient)

pre: p.examine\_breathing=true

post: p.respiratory\_rate\_measured =true

context Severity:: checkRadicalPulse(p: Patient, rate: integer)

pre: p.respiratory\_rate\_measured=true

pre: rate < 30

post: p.radical\_pulse\_checked=true

context Severity:: measureCapillaryRefill(p: Patient, rate: integer)

pre: p.respiratory\_rate\_measured=true

pre: rate < 30

pre: p. radical\_pulse\_check=true

post: p.measure\_capillary\_refill= true

context Severity:: examineMentalState(p: Patient, capillary\_refill: Integer)

pre: p. capillary\_refill\_measured= true

pre: capillary\_refill > 2

pre: p. radical\_pulse\_check=true

post: p. Mental\_responsiveness\_examined=true

context Delayed :: canWait(p: Patient)

pre: p. Mental\_responsiveness\_examined=true

context Minor :: canWait(p: Patient)

pre: p.walk\_examined = true

context Immediate :: PerformSurgery(p: Patient)

pre: p.respiratory\_rate\_measured =true [OR]

pre: p. radical\_pulse\_checked=true [AND]

pre: p. capillary\_refill\_measured= true [OR]

pre: p. Mental\_responsiveness\_examined=true

context Expectant :: informFamily(p: Patient)

pre: p.position\_changed=true

pre: p.breathing\_reChecked=true

SALT ALGORITHM

context Severity :: examineBreathing(p: Patient)

pre: p.obtain\_patient\_info = true

post: p. breathing\_checked=true

context Severity :: observeMovements(p: Patient)

pre: p.breathing\_checked=true

post: p.movements\_examined =true

context Severity :: checkPeripheralPulse(p: Patient)

pre: p.movements\_examined =true

post: p.peripheral\_pulse\_checked=true

context Severity :: checkRespiratoryDistress(p: Patient)

pre: p. peripheral\_pulse\_checked=true [AND]

pre: p.movements\_examined =true

post: p. respiratory\_distress\_examined=true

context Severity :: checkMajorHemorrhage(p: Patient)

pre: p. peripheral\_pulse\_checked=true [AND]

pre: p.movements\_examined =true [AND]

pre: p. respiratory\_distress\_examined=true

post: p.major\_hemorrhaged\_controlled=true

context MinorInjuries :: minorInjuriesOnly(p: Patient)

pre: pre: p. peripheral\_pulse\_checked=true [AND]

pre: p.movements\_examined =true [AND]

pre: p. respiratory\_distress\_examined=true [AND]

pre: p.major\_hemorrhaged\_controlled=true

post: p.minor\_injuries\_only=true

context Severity:: checkIfSurviveCurrentResources (p: Patient)

pre: p. peripheral\_pulse\_checked=true [AND]

pre: p.movements\_examined =true [AND]

pre: p. respiratory\_distress\_examined=true [AND]

pre: p.major\_hemorrhaged\_controlled=true

post: p.patient\_survive\_current\_resources\_checked=true

context Delayed :: CanWait(p: Patient)

pre: p.minor\_injuries\_only=true

context Dead :: informFamily(p: Patient)

pre: p. breathing\_checked=true

context Expectant :: informFamily(p: Patient)

pre: p.patient\_survive\_current\_resources\_checked=true

context Minimal :: canWait(p: Patient)

pre: p.minor\_injuries\_only=true

context Immediate :: PerformSurgery(p: Patient)

pre: p.patient\_survive\_current\_resources\_checked=true

ESI ALGORITHM

context Severity :: checkIfInterventionNeeded(p: Patient)

pre: p.obtain\_patient\_info = true

post: p.checked\_for\_immediate\_intervention=true

context Severity :: assessSituation(p: Patient)

pre: p.checked\_for\_immediate\_intervention=true

post: situation\_assessed=true

context Severity :: examine(p: Patient)

pre: p.situation\_assessed=true

post: p.examined\_if\_confused =true [OR]

post: p.examined\_if\_disoriented =true [OR]

post: p.examined\_if\_lethargic =true

context Severity :: checkForPain(p: Patient)

pre: p.situation\_assessed=true

pre: p.examined\_if\_confused =true [OR]

pre: p.examined\_if\_disoriented =true [OR]

pre: p.examined\_if\_lethargic =true

post: p.checked\_if\_severe\_pain=true [OR]

post: p.checked\_if\_distressed=true

context Severity:: checkResourcesNeeded(p: Patient)

pre: p.checked\_if\_severe\_pain=true [OR]

pre: p.checked\_if\_distressed=true

post: p. number\_resources\_assessed =true

context Severity :: measureVitalZones(p: Patient, resources: Integer)

pre: p.number\_resources\_assessed=true

pre: resources >1

post: p.vitals\_examined=true

context Immediate :: ResuscitationRequired (p: Patient)

pre: p.checked\_for\_immediate\_intervention=true

context VeryUrgent :: Stabilize(p: Patient)

pre: p.situation\_assessed=true

pre: p.examined\_if\_confused =true [OR]

pre: p.examined\_if\_disoriented =true [OR]

pre: p.examined\_if\_lethargic =true

pre: p.checked\_if\_severe\_pain=true [OR]

pre: p.checked\_if\_distressed=true

pre: p.vitals\_examined=true

context Urgent :: Supervision(p: Patient)

pre: p. vitals\_examined=true

context Delayed:: Reassess (p: Patient, resources: Integer)

pre: p.number\_resources\_assessed=true

pre: resources = 0

context Minor :: Reassess (p: Patient, resources: Integer)

pre: p.number\_resources\_assessed=true

pre: resources = 1

DRUG ALLERGY

context Treatment :: takeHistory(p: Patient)

pre: p.obtain\_patient\_info = true

post: p.patient\_history\_obtained=true

context Treatment :: examine(p: Patient)

pre: p.patient\_history\_obtained=true

post: allergy\_pattern\_used\_to\_examine=true

post: symptoms\_checked=true

context Treatment :: assess(p: Patient)

pre: allergic\_pattern\_used\_to\_examine=true

post: patient\_assessed\_about\_drug=true

context Treatment:: createListOfDrugsToAvoid(p: Patient)

pre: patient\_assessed\_about\_drug=true

post: list\_created=true

context Treatment :: checkForNSAIDallergy(p: Patient)

pre: p.list\_created=true

post: p.NSAID\_allergy\_checked=true

context Treatment :: prescribe(p: Patient)

pre: p.NSAID\_allergy\_checked=true

pre: p.patient\_assessed\_about\_drug=true

post: p.prescription\_given=true

context Treatment :: advice(p: Patient)

pre: p.prescription\_given=true

post: p.patient\_informed=true

context acuteSymptom :: treat(p: Patient)

pre: p.allergy\_pattern\_used\_to\_examine=true

pre: p.symptoms\_checked=true

post: p.acute\_symptoms\_treated=true

context drugInformation :: recordDrugInfo(p: Patient)

pre: p.patient\_assessed\_about\_drug=true

post: p.drug\_information\_recorded=true

MANCHESTER TRIAGE

context Severity :: examineAirway(p: Patient)

pre: p.obtain\_patient\_info = true

post: p.examined\_airway=true

context Severity:: checkForAdequateBreathing(p: Patient)

pre: p.examined\_airway=true

post: p.examined\_breathing=true

context Severity:: checkForShock(p: Patient)

pre: p.examined\_airway=true [AND]

pre: p.examined\_breathing=true

post: p.checked\_patient\_for\_shock=true

context Severity:: measurePain(p: Patient)

pre: p.checked\_patient\_for\_shock=true

post: p.pain\_measured=true

context Severity:: examineCardiacPain(p: Patient)

pre: p.pain\_measured=true

post: p.cardiac\_pain\_examined=true

context Severity:: measureBreathingRate(p: Patient)

pre: p.pain\_measured=true [and]

pre: p.cardiac\_pain\_examined=true

post: p.breathing\_rate\_measured=true

context Severity:: checkPulse(p: Patient)

pre: p.pain\_measured=true [and]

pre: p.cardiac\_pain\_examined=true [and]

pre: p.breathing\_rate\_measured=true

post: p.pulse\_checked=true

context Severity:: examinePleuriticPain(p: Patient)

pre: p.pulse\_checked=true

post: p.pleuritic\_pain\_examined=true

context Severity:: checkForPersistentVomiting(p: Patient)

pre: p.pleuritic\_pain\_examined=true

post: p.checked\_for\_persistent\_vomiting=true

context Severity:: examineForCardiacHistory(p: Patient)

pre: p.pleuritic\_pain\_examined=true [and]

pre: p.checked\_for\_persistent\_vomiting=true

post: p.examine\_patients\_cardiac\_history=true

context Severity:: reMeasureForPain(p: Patient)

pre: p.pleuritic\_pain\_examined=true [and]

pre: p.checked\_for\_persistent\_vomiting=true [and]

pre: p.examine\_patients\_cardiac\_history=true

post: p.pain\_remeasured=true

context Severity:: checkVomiting(p: Pain)

pre: p.pain\_remeasured=true

post: p.vomiting\_checked=true

context Severity:: examineForMildPain(p: Patient)

pre: p.vomiting\_checked=true

post: p.mild\_pain\_examined=true

context Severity:: checkForProblems(p: Pain)

pre: p.vomiting\_checked=true [and]

pre: p.mild\_pain\_examined=true

post: p.problems\_checked=true

context Immediate:: resuscitationRequired(p: Patient)

pre: p.examined\_airway=true

pre: p.examined\_breathing=true

pre: p.checked\_patient\_for\_shock=true

post: p.resuscitation\_in\_action=true

context veryUrgent:: stabilize(p: Patient)

pre: p.pain\_measured=true

pre: p.cardiac\_pain\_examined=true

pre: p.breathing\_rate\_measured=true

pre: p.pulse\_checked=true

post: p.patient\_satbilized=true

context Urgent:: supervision(p: Patient)

pre: p.pleuritic\_pain\_examined=true

pre: p.checked\_for\_persistent\_vomiting=true

pre: p.examine\_patients\_cardiac\_history=true

pre: p.pain\_remeasured=true

post: p.patient\_supervised=true

context Standard:: Reassess(p: Patient)

pre: p.vomiting\_checked=true

pre: p.mild\_pain\_examined=true

pre: p.problems\_checked=true

post: patient\_reassessed=true

context NonStandard:: Reassess(p: Patient)

pre: p.vomiting\_checked=true

pre: p.mild\_pain\_examined=true

pre: p.problems\_checked=true

post: patient\_reassessed=true