Improvingthequalityofoperativenotesforlaparoscopiccholecystectomy:Assessingtheimpactofastandardizedoperationnote

Comment [SB1]: https://journals.lww.com/international-journal-of-surgery/fulltext/2016/03000/improving_the_quality_of_operative_notes_for.3.aspx

Abstract

Operationnotesarefundamentalincommunicatingpatientcare,residenteducation,informationforsurgeonsandactasaresourcetoloforoutcomeimprovementandresearch.Furthermore,theyprovideamechanismforhealthcarereimbursementandanimprovementinqualityofcare.Thereisincreasingrealization ofthevalueofsynopticoperativenoteswhicharetemplatedandprocedurespecific.Inclusionofarchived (andretrievable)videorecordingsandintra-operativephotographsmayenhancereporting,notjustofsurgicalproceduresbutinmanyareasofmedicine.Aspartofchangemanagementinsurgeryphysicianandpatientconcernsregardingprivacy,dataprotection,andpotentialmedico-legalexposureneedtobeaddressed.Laparoscopiccholecystectomy(LC)isoneofthecommonestoperationsperformedglobally,withover1.1millionproceduresperannumintheUnitedStatesalone.Tounderstandthepatient'spathtorecoveryandpotentialadverseoutcomes,whichmayoccurinupto20%ofpatients,requiresatransparentdescriptionofoperativefindingsandproceduresisadvisable.

Keywords:operativenotes,laparoscopiccholecystectomy,standardizedoperationnote

Introduction

Operativenotesaretherecognizedstandardfordocumentingthedetailsofanoperation.Theyallowthecommunicationofintraoperativeeventstootherhealthcareprofessionals,whichcansignificantlyimpactuponfutureclinicaldecisionsandoperativeprocedures.Accurateandcompletedocumentationhasbeencorrelatedwithgoodclinicalcare[1].Furthermore,operativereportshaveanimportantroleinmedico-legalconflictsaswellasqualityassurance[2].

Despitetheirimportancethequalityofoperativereportsisoftenpoorwithcriticalaspectsoftheprocedurefrequentlymissing.TheNationalConfidentialEnquiryintoPeri-OperativeDeathshasidentifieddocumentationdeficienciesasanincreasedriskforlitigationandidentifiedanurgentneedforimprovement.TheRoyalCollegeofSurgeons(RCS)hasestablishedgenericguidelinesoutliningtheminimuminformationrequiredwithinoperativenotes,andstandardizationusingprocedure-specificoperationnoteshasbeenshowntosignificantlyimproveadherencetotheseguidelinesforhiphemi-arthroplasty[3].

LaparoscopiccholecystectomyisthemostcommonlyperformedminimallyinvasivesurgicalprocedureintheUK,withover50,000proceduresperformedannuallyandisassociatedwitharelativelyhighincidenceofcomplications[4],whicharoftenonlyclinicallyapparentinthepost-operativeperiod,thereforeclearandaccurateoperativenotesareessentialforthereviewingclinician.Further,adelayinrecognitionofcomplicationscorrelateswiththesubsequentriskoflitigation[5].TheDutchSocietyofSurgery,incorporatingpreviousguidelinesfromseveralinternationalsocieties,haspublishedspecificguidancedetailingastepwiseprotocolforsafelaparoscopiccholecystectomy[6].Nonetheless,poordocumentationofeachstepofthisprotocolhasbeendemonstrated,includingdeficienciesinrecordi

ngoftrocarinsertion,establishmentofthecriticalviewofsafety,andgallbladdercondition[7].Poororillegibledocumentationofsurgicalproceduresoftenresultsincomplicationsbeingindefensibleinthefaceoflitigation[7].Theaimofthisreviewistoevaluatethequalityoflaparoscopiccholecystectomyoperativenotes.

Operativenotes

Operationnotesareanessentialpartofmedicaldocumentationforpatientsundergoingsurgicalprocedures.Theyarepertinenttoestablishacontinuumofcarewithothermembersofamultidisciplinarytreatingteam.Inthepresenttimeofrisingstandardsofpatientcareandincreasinglitigation,theimportanceofwell-writtenoperationnotescannotbeover-emphasized.Surgicaloperativenotesconstituteacrucialpartofpatients'medicalrecords[8].Theyprovidefirst-handinformationregardingtheprocedureperformedandoperativefindingsduringanysurgicalintervention.

Thisdocumentisessentialforbothimmediateaswellaslong-termcareandsafetyofthepatient[9].Asidefromthemoreobviousmedicalimplications,thequalityofthenoteshaseconomicandmedico-legalramifications.Theyareoftenusedinmedico-legalcases,andpatientshavealegalrighttoaccesstheserecords[8].Handwrittenoperationnotesaregenerallyproducedasevidenceinmedico-legalcasesandincompleteorillegiblenotescanweakenthesurgeon’sdefense[10].However,manyelectronichealthrecords(EHR),haveincludedsoftwareprogramstocreateelectronicoperativenotes.

ThegoalofanyEHRsystemistocreateasystemthatisuser-friendly,flexible,andinexpensive,whilereducingerrors,assuringthatallpertinentclinicalandbillinginformationisrecorded,andminimizingcompletiontime.Electronictemplatesminimizethedatathatmustbeenteredandarethereforeeasiertouse.Theycanalsobedesignedtopromptuserstoentercriticalinformationtoconformtomedical,legal,andbillingstandards[11].Generally,operativenotesarewrittenbyoneofthejuniormembersofthescrubbedteam,guidedbyaseniorsurgeon,oftenconsideredanimportantpartofthetrainingitself.

Review of *Literature*

Variousstudieshavetriedtoevaluateandappraisethequalityofoperativenotesatmultiplecenterstosuggestpracticeimprovingsolutions.InastudyfromDistrictGeneralHospital,Manchester,Mathewetal.evaluated41electiveand11emergencyoperationsfortheiroperativerecords.Ofthese,21recordswereenteredbytheregistrarsand31bytheconsultants.Thetypeofoperationwasmentionedinallthenotes.Thetimeofoperationwasrecordedin16%ofthenoteswrittenbytheregistrarsand6%ofthenotesrecordedbytheconsultants.Patientidentificationwasnotnotedby10%ofregistrar'sand6%ofnotesenteredbytheconsultants.19%oftheconsultant'snotesdidnotmentionthetypeofincision.

Operativecomplicationswereincludedin16%oftheconsultant'snotesbutnoneoftheregistrar'snotes[12].AstudyconductedbyHamzaetal.fromSudanrevealedthatthedateandtimeofsurgerywerenotedin98%and81%oftheoperationrecords,respectively[9].
InamoredetailedstudyfromatertiarycareteachinghospitalfromIndia,Hudaetal.evaluated193surgicalcasesandfoundoperativenotesinonly173cases.However,noneoftheoperationnotesmetall27standard

variablessetbytheRoyalCollegeofSurgeons(RCS).In74.5%ofnotes,dateandin89.5%,timeofsurgery wasmissing.Asallthenoteswerehandwritten,legibilitywasasignificantvariableaffectingthequalityof notes,with12.7%ofoperationnotesillegible.Illegibleoperationnotesarechallengingtounderstandand cancompromisethesafetyofthepatient.

In50%ofrecords,thepositionofthepatientwasnotmentioned.Describingtheperoperativefindingsisani mperativepartofanyoperationnoteandwasmissingin27%oftherecordsevaluated.Theyalsofoundalap seinthedocumentationofpatientidentifiersin92%ofnotes,whichisacriticalsafetyissue.Thestudyalsor evealedthatthromboprophylaxiswasnotrecordedinanyoftheoperationnotes[8].Inaqualityauditofope rativenotesfromtheUK,astudyfoundthatpost-opinstructionswereabsentinapproximately75%ofoperationnotes.Thedetailsofprostheseswererarely mentioned.Thesamestudyrevealedthat70%oftheiroperationnoteswereillegible[13].Overall,thesest udieshighlightcriticalomissionsinwritingoperationnotesdespiteestablishedbestpracticeguidelines. Someoftheseomissionsseriouslyendangerpatientsafety,andthustheimportanceofwell-writtenoperationnotescannotbeoveremphasized.**Formatofoperativenotes**Thewritingofoperativen otesvariesfromplacetoplace,withvarioushospitalshavingtheirformatofwritingthem.Differentsurgic alsocietiesandstatutorybodieshavegivenguidelinesforwritingcomprehensiveoperativenotes.Themo stnotableofthesewastheRoyalCollegeofSurgeons(RCS)guidelines,firstpublishedin1990andlaterm odifiedin1994[14].TheGoodSurgicalPracticewasdevelopedbytheRCSandlatermodifiedin2014,hig hlightingtheimportanceofqualityoperationnotes.

TheRCSstateintheirpublicationthattheoperatingsurgeonsmustensurethatthere areclearoperationnotesforeveryprocedure,whichshouldcontainsufficientdetailtoenable continuityofcare[14].Inpractice,thelevelofdetailrecordedinoperationnotesishighlyvariableand,atti mes,illegible.Poororillegibledocumentationcancompromisemedicalrecord-

keeping,qualityofpatientcare,andevenpatientsafety.Well-designedproformasforprocedureshavebeenshowntostandardizeandimprovethequalityofinformationrecorded,compliancewithgoldstandards,andimprovedpostoperativecare[15]. Operationnotesmustbewrittenimmediatelyafterthesurgery,preferablybyamemberofthe operatingteam.Theycanbetyped,assuggestedbytheRCS,orevenhandwritten.Therehasbeenamovetowardstemplate-basedoperationnotestostandardizethelayoutandpostoperative instructions,makingthemeasiertounderstand,especiallyinelectivecases.Theoperationnote shouldaccompanythepatientintopost-oprecoveryandthewardstoallowcontinuityofcarebyanotherdoctor[16].**Guidanceofoperativenotes** Well-writtenoperativenotesincludeallthecharacteristicsofthepre-andpost-procedure,planofmanagement,andestablishthepatient'sresponsibilitytotheoperativeteamduringthe wholeprocessofsurgery.

Thecomponentsofoperativenotesinclude:

(i) Dateandtimeoftheprocedure

(ii) Patientdetails

- Hospitalsticker/handwrittenpatientdetails

(iii) Staffdetails

- Operatingsurgeonandgrade
- Surgicalassistantandgrade
- Consultantoverseeingcare
- Anesthetistandgrade

(iv) Diagnosis

- Preoperativediagnosis
- Postoperativediagnosis

(v) Fulltitleoftheoperationcarriedout•Listfrommajortominor•Noabbreviations(v)Typeofth eanesthesiaused

(vi) Operativefindings

- Visualexaminationandabdominalpalpationfindings
- Pathologicalfindings
- Anyrelevantnegativefindings?
- Asmuchdetailaspossible–site,size,color,thevolumeofstructureinvolved
- Pictureaids•Anydifficulties?
- BloodLoss

(vii) Surgicalsteps

- Position
- Preparationanddraping
- Incision(whatinstrumentyouused)
- Stepbystepdescriptionofsurgicalstepsundertaken
- Suturesusedandtypeofsuturing(locking,continuous)
- Awrittenjustificationofunusualsteps
- Drainsin-situ/catheter–whatisdrainingattheendoftheprocedure
- Anysamplesobtained–howyoutookthem
- Swabs,needles,andinstrumentchecked

(viii) Postoperativeplan-

Importantguidanceonmanagingthepatientinthepostoperativeperiod Immediate

- Analgesia
- Medications
- VTEassessment

- Nutrition-fluids/eatinganddrinking
- Cathetermanagement
- Detailsofspecificdrains/dressing/packs/devices–whenshouldtheyberemoved
- Samplesforthelab
- Routinepost-opcarevs.closemonitoring/observations•AnestheticconcernsHospitalStay
- Suture/Staplescare
- Bloodtests
- Specificnursing/midwiferyinstructions•Anyspecialistinputneeded,e.g.,physio
- Patientdebrief–planforfuture,e.g.,nextdelivery/contraception•Discharge–whenandbywhom•Followup

(ix) 'TheSign-Off.'•Printyourname[Stamp]

- Signthenotes
- Leavecontactdetails

Standardizedoperativenotesforlaparoscopiccholecystectomy

Laparoscopiccholecystectomy(LC)involvestheinsertionofalaparoscopeandspecializedinstruments throughsmallincisions,allowingformagnifiedvisualizationandprecisedissectionofthegallbladder.T hisapproachoffersseveraladvantages,includingreducedpostoperativepain,shorterhospitalstays,fast errecovery,improvedcosmeticoutcomes,andearlierreturntonormalactivities[17].Thesebenefitshave contributedtothewidespreadadoptionoflaparoscopiccholecystectomyasthestandardapproachforcho lecystectomy.LChasbeenassociatedwithhigherpatientsatisfactionratesduetoreducedpostoperativep ain,improvedcosmeticoutcomes,shorterrecoverytimes,andearlierreturntonormalactivities.Patients appreciatetheminimalscarringandfasterresumptionofdailyroutinesassociatedwithlaparoscopy[18].

Fordecades,thenarrativeoperativereport(NR)hasbeenusedinthismanner.Thisreportingmethod,however,issubjectivebynatureandoftenlacksessentialinformation[19].Giventhefactthatproperdocumentationisanessentialpartofpatientsafetyandqualityofcare,manyinthesurgicalfieldhaveexperimentedwithorevenhaveimplementedstandardizedorsynopticreporting(SR)asasubstitute.Thewordsynopsisisderivedfromtwoancient Greekwords:σύν(sún,“withorwhole”)andὄψις(ópsis,“view”)andcanbeinterpretedasaconcisedescriptionof—inthiscase—asurgicalprocedure.AnSRprovidessummarizeddocumentationcontainingpredefinedleadingcriteriaofthesurgicalprocedure,whichcaneffortlesslybecompletedincomputerizedtemplates[20].

Thissynopticwayofreportingcanalsobeachievedbyprovidingeasilycomprehensibleaide-me´moires.Byaddingqualityofcareindicatorstothisdocumentationmethod,thesefactorscanbemonitoredefficientlywithouttheneedfordoubleentriesinaseparatereport.Agoodexampleofanelectronicallystoredsrcanbefoundinastudybyvergisetal.[21]focusingonRouxen-Ygastricbypass.Worldwide,oversevenmillionpatientssuffermajorcomplicationsfollowingsurgeryeveryyear.Onemillionofthesepatientswilldieduringorimmediatelyaftersurgeryasaresult.Aroundhalfoftheseadverseeventsarepotentiallypreventable[22].

Checklistusageinsurgeryresultsinthousandsofpatients’livesbeingsavedeachyear.Oneofthebest-knownexamplesisthe19-itemWHOSurgicalSafetyChecklistwhichwasdevelopedtodecreaseerrorsandadverseeventsandincreaseteamworkandcommunication[23].Thischecklistreducedmorbidityandmortalityratesbymorethanone-thirdacrossallparticipatinghospitals.Earlierpublicationsdeterminedthelackofavailableinformationinthetraditionalreports.Waubenetal.demonstratedthatNRsinlaparoscopiccholecystectomycontainedfeweressentialproceduralstepscomparedtowhatcouldbeseenonoperativevideorecordings[24].

Anotherstudyonlaparoscopiccholecystectomyconcludedthatcaseswithbileductinjurycontainedfewerkeyelementsofthereportthanthosewithoutbileductinjury,aphenomenonlikelycausedbysurgeonstendingtofocusmoreonreportingunusualeventsratherthanreportingtheessentialstepsoftheoperation[25].Apartfromthisexplanation,itisplausiblethat,duetomedicolegalconcernsandfearoflitigation,surgeonsmay,consciouslyornot,omitsomepartoftheoperativereportwhenintraoperativecomplicationsoccur.Furthermore,severalstudiesreportedimprovedefficiency,higherpatientacuitylevel,higherphysiciansatisfaction,andreducedadministrativecostsinSRs.However,theextentofthesuperiorityofSRandtheidealconstructionoftheoperativereportremainunknown[26].

PreviousstudieshavedemonstratedpoorcomplianceofoperationnoteswiththeDSSguidelinesforlaparoscopiccholecystectomywhenwrittenwithouttheassistanceofaproforma[26].Inaddition,procedure-specificproformashavebeenshowntoimprovecompliancewithdocumentationguidelinesforhiphemi-arthroplastyandCaesareansection,withpotentiallybeneficialconsequencesformedicallitigationrates[27].Waubenetal.havepreviouslyobserveddifferencesinoperativedocumentationcompletenessbetweenresidentsandattendingsforlaparoscopiccholecystectomy(withbetterperformanceamongstresidentsintheirseries)andhavesuggestedthataprocedure-specifictemplatebasedonestablishedguidelinescouldimprovethequalityofoperationnotes[28].

Borchertetal.havehighlightedthatthereislittleformalteachingofoperationnotewritingduringsurgicaltraining[29],andtheuseofproformascanassistmorejuniorsurgeonsindocumentingacompleterecordoftheoperation.Thomsonetal.believethattheuseofprocedure-specificproformas,basedonestablishedguidelinesforminimumdocumentationdatasetscanhaveausefulroleinfacilitatingtheproductionofmorecompleteandmedico-legallyrobustoperationnotes.Thomsonetal.proformahasprovedpopularwithsurgeons,asdemonstratedbyitshighusagelevelsacrossthreehospitalsites(97%).Withguidelinesincreasinglybeingusedtodefi

nestandardsforclinicalpracticeinmedicallitigation[30]itisvitaltomaketheprocessofauthoringguideline-compliantoperationnotesstraightforward,throughinnovationsincludingproformas.

Completionrates

Inamulti-institutionalevaluationofsynopticoperativereports(SORs)versusdictatedoperativereports(DORs)in35patientsundergoingLC,Dealandcolleaguesreportedcompletionratesof99.7%forSORsversus76%forassociatedDORs.Moreover,87%ofsurveyedsurgeonsinthestudyindicatedapreferenceforthesynopticformat.Abriefnarrativecommentwasaddedin48.5%ofcases.Inaddition,synopticoperaticreportwaseasytouse(PD67%,LC93%),theywouldusethesynopticoperativereportoveradictatedoperativereport(PD83%,LC87%),andsynopticoperativereportwouldimprovetheabilitytoconductQIprojects(PD67%,LC87%).TheyalsoexhibitedthatBenefitsofusingsynopticoperativereportsincluded:perceivedvalueofstandardizedreporting,theabilitytoconductqualityresearch,andreducingdictationcosts[31].

Thomsonetal.showedasignificantimprovementindocumentationratesforproceduraldatauponintroductionofaSORforLCinathree-hospitalNHSTrust,includingoperativetime(82%SORvs.25%DOR),operativesetting(95%SORvs.3%DOR),complications(83%SORvs.49%DOR),nameofsurgeon(99%SORvs.93%DOR)andsignature(96%SORvs.88%DOR),butadecreaseindocumentationoftheproceduredate(89%vs.99%)[32].TheauthorsalsofoundasignificantpositivecorrelationbetweenthesurgicalexperiencelevelandDORcompletionrates($p < 0.0001$),althoughthecorrelationwasnolongersignificantfollowingSORintroduction[32].Inaprospectiveseriesof25consecutiveLCperformedinasingleinstitution,Shaikhetal.demonstrateda79%completionrateinSORsversus25%inDORs[33]

Intra-operativeimagerecording

Intra-operativephotographyduringLChasbeenusedtodocumenttheCVS.Adequacyofsuchphotographyinachi evingtheCVSwasreviewedbytwoexpertobserversinaprospectiveauditof100consecutiveLCs[34].Themeasuredrateofanadequate CVSwas52%and45%,respectively.Thisraisesthequestionofneedforartificialintelligenceormachinelearningalgorithmstohelpinassesscompleteness.Sanfordandcolleaguesproposedamethodof“doublet”photographywhichcombinesbothanteriorandposteriorimagingoftheCVS[35].Inthisstudyofaseriesof28electiveLCs,photographsofanterior,posterioranddoubletviewwereratedbytwoindependentsurgeons.Anteriororposteriorimagesalonereceivedsignificantlylower‘satisfactory’ratingsthandoubletviews(76.8%vs.96.4%,$p = 0.02$).Buddinghetal.foundIOCtobemoreconclusivethanphotographyoftheCVSfordocumentationofbiliaryanatomy,with57%ofIOCsconductedin63proceduresdeemedconclusivebyblindedexpertsversus25%forphotographsoftheCVSforthesameprocedures[36].Eryigitetal.reportedthatvideodocumentationofLCsadequatelydepictedsurgicalstepsin1005/1089(92.3%)videoobservationscomparedto849/1089(78%)inoperativenotes($p < 0.001$)[37].Theadditionofaudiorecordingsresolvedsomediscrepanciesbetweenvideorecordingsandoperativenotes,resultinginadropindiscrepancyfrom23%withaudioadjustmentto11.8%without($p < 0.001$).

TheintegrationofSORsintoahospitalmedicalrecordsystemwasaddressedbySakowskaetal.[38].Theseauthorsreporteduptakeof SORsforLCsrosefromunder20%inthefirstmonthto100%withinthesecondmonthafterintroductionandremained > 90%forthenext7sevenmonths.SORswereimmediatelyavailablewhenpatientsarrivedintherecoveryroomandreachedtheelectronichealthrecordofthehospitalwithi

namediantimeof5min(IQR3–8min,*n* = 425),comparedtoamediantimeof2twodaysfortraditionalDORs(IQR1–5days,*n* = 174).

Synopticvsnarrativereport

SynopticreportingmethodsweredevelopedasaresultofthelackofessentialinformationintheNR.Despitethefactthatnewreportingtechniquesarebeingusedmorefrequently,obtainmentofscientificevidenceregardingtheextentoftheaddedvalueandadvantagesoftheSRwasneededtopromotefurtherincorporationofsynopticreportingmethods[39].

In1994,astudywasconductedonmedicalrecordkeepinginwhich70%ofnoteswrittenbyconsultantswereindecipherableinitspresentformbythenurseorjuniordoctorcollectingthedata[40].Tomakeusageofthesepoorlydictatedortypedoperativereportsredundant,hospitalshaveimplementednewreportingmethodsofwhichtheWeb-basedreportingtechniqueisthemostcommonlyusedcomputerizedSR.Itisdesignedtobeuser-friendly,anditcansavedatamuchfasterandeasierthantheNR.Web-basedreports,suchasWebSMR(SurgicalMedicalRecord),allowsurgeonstosecurelyaccessreportsintheoperatingroomoranyotherplaceconnectedtotheInternet.Itcontainsquestionswithdrop-downmenusandotherfunctionalities,suchasriskfactorcalculatorsandmandatoryresponsefieldsforessentialoperativesteps,toachieveamostcomprehensiveoverviewofthesurgicalprocedure[41].

In2019,acomparativereviewofsynopticoperativereportingversusnarrativeoperativerecordsfocusingonbothuser-friendlinessandcompletenessofthehistoricalnarrativereporttothesynopticoperativereportconcludedthattherewasahighercompletionandaccuracyratecombinedwithalowercompletiontimewhenusingthesynopticoperativerecordcomparedtothetraditionalnarrativerecord.Similarfindingssupportingthea

dvantagesofsynopticreportinghavebeenfoundinotherstudies[42,43].Theyalsoconcludedthatthereis potentialforbettercompletionandaccuracyrateswhenusingsynopticoperativereportingsystemsinahy bridapproachofnarrativeandsynopticmethodswhichwillleadtohighersatisfactionamongsurgeonsan dotherhealthcareprofessionals[42].In2019,asystematicreviewandmeta-analysisconductedbyStogrynetal.foundthatsynopticoperativereportsoutperformednarrativereports [44].In2020,RobertsonandVergis[43]conductedaprospectivecomparativestudytoevaluatepreopera tiveandintraoperativequalityofcaredocumentationintraditionallydictatedreports.Theycompareditto synopticreportsforrectalcancersurgeryandconcludedthatthesynopticreportingmethodresultedinmo reaccuratedocumentationcomparedtotraditionaldictatedreportingmethods.In2021,StJohnetal.[45]c onductedaprospectivestudytoevaluatetheconsentprocessandassociateddocumentationinbreastandg eneralsurgeryandconcludedthattherewerehigherrorratesandomissionsassociatedwithhandwrittenfo rmscomparedtoastandardtemplate.Dykeetal.[46]conductedastudytoevaluatethelegibility,accuracy, andcompletionoftheconsentingprocessandtocomparepaperconsentformstodigitalforms.Theyinclu ded223patientswhoconsentedbyusingeitherpaperconsentformsordigitalforms.Theyfoundthatthere wereoneormoreerrorsassociatedwithpaperconsentformscomparedtozeroerrorsassociatedwithdigit alones;therefore,theyconcludedthatusingconcentricdigitalconsentplatformscanimprovethequality oftheconsentingprocessbyreducingerrorsandisassociatedwithbetterpatients’decision-makingexperience.

Qualityimprovementplansrequireaccurateandup-to-datedata.Synopticreportshavebeenshowntobemorecompletethannarrativeones.Theelectronicforma tfacilitateseaseofdatacollectionandinterpretationwiththepotentialforelectroniclinkagewithquality monitoringandimprovementdatabases[47,48].Thiscouldprovideapowerfulresearchtool.Advantage sincluderealtimedatacollectionandreduceddatacollectiontimewiththecostoftheassociateddedicated

staff.Somemayfeelthatthisadditiontoadata-overloadedsystemisunreasonable.However,athoroughandcompletesynopticoperativereportprovidesasuccinctplatformwithconsolidatedrelevantpatientdata.Thisalsodecreasesextractiontimebyeliminatingtheneedtoreviewmultipledatasources.Synopticoperativereportingpotentiallyaffordsreadyaccesstorelevantoperativeandanatomicalinformationforcareproviders,permittinginformedclinicaldecisions,andisespeciallypertinentinoncologicsurgerywhereeligibilityfor,andcoordinationof,adjuvanttreatmentsarereliantonkeyoperativeinformation.Thisisalsovitaltothemanagementofpostoperativecomplications,wheredetailsoftheindexprocedureinfluencetheapproachto,diagnosis,andtreatmentofthesurgicalpatient[49].Individualstudiesreportedadditionaladvantagesincludinghigherinter-raterreliability,improvedefficiency,decreasedcost,anderrorratesforthesynopticplatform.Enhancedreliabilityimpliesmoreconsistentreportingbetweenusersandmoreconsistentqualityofdocumentation.Reducedcompletiontimeimprovesefficiencyforsurgeons.Thereducedtimetocompletesynopticreportsandtheirexpeditedavailabilityinthemedicalrecordallowspromptaccesstooperativeinformation.Thisbenefitspatientsandcareprovidersespeciallywhensurgicalcomplicationsoccurinthefirstfewpost-operativedays.Typically,dictatedreportsareunavailableforseveraldaysduetotranscriptiontimes.Potentiallyreducedcosts(-$8.27/note)withasynopticplatformcombinedwithitsimprovedefficiencyhasthepotentialforenhancinghealthcaresystemdelivery.Synopticoperativereportingdoeshavedisadvantageshowever.Manysurgeonsfeelsynopticreportsaredifficulttoreadanddonotcapturethetrue“flavour”ofanoperationwiththeirlackofdescriptivedetail.Apotentialsolutionistoallowforfreetextsectionsforsurgeontoelaborateonsubtlefeaturesoftheprocedurepertinenttodocumentwhenneeded.Forthetraineesurgeon,therearepercievededucationallimitationstothisformat[50].

Programdirectorsexpressedconcernsthatsynopticreportsprovidelesseducationalvaluethannarrative reports,[50]includingtheperceptionthattraineesdonothavetodemonstratethesameknowledgeandfa miliaritywiththeprocedureandthatitdiscouragesindependentthinkingwithrespecttotheprocedureper formed[50].Perhapssynopticreportingrobsthetraineeofthisvaluablecognitivetaskanalysistool;theac tofrecallinganddescribingthedetailsoftheprocedureafterthefact,provideessentialreflection,analysis, andconsolidationofknowledgeoftheprocedure.Onesuggestedapproachtomitigatethisistoallowtrain eestodictateanoperativereportwhilstthestaffsurgeongeneratesasynopticreportfortheofficialmedical record[50].Theopportunityforcognitivetaskanalysisandfeedbackwouldbeprovidedtothetrainee.Bu y-infromsurgeonsandtraineesmayprovedifficultasitrequiresanaddedstepforsurgicaldocumentationan daddedtimeforreviewandfeedback.

Synopticreportingalternative

AnalternativetosynopticreportinginLCwasproposedbyStewartetal..Theauthorshypothesizedthatif moreattentionwerepaidtotheobjectivesofoperativereports,theircontentwouldmorepredictablyconta inthemostrelevantinformation,whichmightchannelthinkinginbeneficialdirectionsduringsurgery.Us ingthemethodofcognitivetaskanalysis,theauthorsidentifiedanumberofkeystepsintheperformanceof LC.Byframingthesurgeon'sthinking,cognitivetaskanalysiswouldbeexpectedtoreduceoperativecom plications.Stewartandcolleaguesarguedthatsupplantinganarrativeoperativereportwithasynoptictem plate(withlimitedfreetextinput)wouldresultinthelossofimportantinformationincludingcontextualba ckground[25].

Limitations

Potentiallimitationsofusingproformasincludelogisticalconsiderationsinensuringreadyaccesstothep roformaatalllocationswhereanoperationisperformed,andreluctanceamongstsurgeonstoaltertheirest ablisheddocumentationpractices.Inadditiontheroleofphotographicdemonstrationofkeysteps,includ ingestablishingthecriticalviewofsafety,maybeofuseinmakingoperativedocumentationmorelegally watertightinthefuture.

Conclusion

Synopticoperativereportingisahighquality,consistent,andfeasiblereportingmethodfordocumenting operativereports.Whensurveyed,themajorityofparticipatingsurgeonsindicatedtheirpreferenceforus ingsynopticoperativereportsandexpressedtheirwillingnesstousethem.Futureimplementationofsyno pticoperativereportingmayrequireovercomingbarriersofelectronicmedicalrecordintegration,ensuri ngmeaningfuluse,andprovidingadequateinformationtechnologysupport.

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