Oncospace:eSciencete chnologya ndop portunitiesforo ncology

RadiationOncology isba sedon pastexperi encesandclini caltrialsforthe   understanding andadvancementof patientcar e. In thecurrent practicew estud yt heeff ectsofradiatio nonourpa tientsth rough controlledtrials.T hesetrialsrepresentlessthan5%of our patient population,t ake years for results,a ndare controlledwithm orerigor thanthestanda rdclinicalpractice.   Avas tamount of untappedknowled geisc ontainedin ou rclini caldata.The   questioni showtoacce ssit.

Thewor kflow inradia tiononc ologyh asm ultiples tagesfromsi mulationtotreat mentplanning,todailyr ecordof treatmentsandfollow -upvisit s.Throughout this processtherearemu   ltipleop portunitiestocaptur e meaningfulinf ormationt hatis relevantto the complicationsand successesofth et reatment.Curr entprac ticesla ckt he organized collectionofmuchof   this d ata,and few toolsexi stto evaluateand analyze thedata inorderto re -applythenewknowledge atthepointof   care.

Todayweha ve manystudiesl ookinga tan atomical,funct ionaland molecularimages tobettercharacterizeourpatient’ s disease. We usep athology,an din thef uture,geneticinformationt obetterun derstandthena tureofaspecif icp atient’sdise ase. We looka tradiationdos edis tributions,f ractionation patterns andpat ientmot iont ound erstandhowit impactst reatmentoutcome. We complicatethepracticef urtherwith concurr entchemo -a ndhorm onalthera piesinaddit iontosurgery.

eSciencere ferst otheor acticeofs tudyingimm enseamount sofdat at hroughtheuseofcomputer n etworksandwe ll organizeddat abases.Such systemsenabledist ributedco llaborationamongcolleaguesinthespe cifieddiscip line.Inradiati on oncology,we areveryg ooda tthei mmenseamount ofdatapart ,butwearelackinginthemanagementoft hatdat at opractice eScience. Oncospaceis aninit iativeto applyeScienceconceptsto radiation oncologyf orbothaphysician’stoolf orpersonalized medicineand a collaborativetool for multi -institutionalresearchon cl inicalda ta.

Oncospaceis composedof severalco mponents:Dataco llectionandw orkflowwheretheclinicalworkf lowisal teredto inherentlycol lectinformat ionon our pati entsr elevantforfutu reanalysis ;Dataw arehousedes igntocreatetheacti vedatabasemodel for efficientanalysis,and w ebs ervicestosupp ortweb -baseda ccesswi thsecuritylevelsi nplacetop rotectpatientpri vacy;Human interfacedesi gnt omak eiteas ytoa skclini callyr elevantquesti onsofthedat aandpr esenttheanswersinways thephys icianthi nk aboutth eproblem s; Statisticala nalysist oolstoall owu stobett erunder standtherelativeimpor tance andvalid ity oftheclini caldata thatis a l esscontrolle dthan atyp icalcl inicaltrial;anddecis ions upporttools toallowustoapplyknowledgefr omthesystemtoour clinicalp ractice.

Thispr esentation willgivea nover viewofthepot entialof eSciencetohelpuncoverclinicalknowledgeandapply itatt he pointof ca re.

EducationalObjectives :
1. Basicun derstandingofeS ciencec onceptsandim plementation
2. Exposethepotent ialof expan dingourknowledge baseuti lizingo urclin icaldata