AbstractID:9537Title: Feasibility to use dai lycone -beam-CTtodet erminedo se-surface histogram oforalmu cosai nr adiotherapyofH& Nca ncer

Purpose: todevelo pa novelappr oachforest imatingdo sedeli veredt ot heoral muc osa -dose -surfacehistogram(DSH) -tofacilit ate assessmento frad iationind ucedmucositi sfromradiotherapy f orhead and neck(H&N)ca ncer. **Methodand Mate rials:** Mucositis, Xerostomia,an ddentalc ariesareco mmono ralcomplicat ionsfromradiotherapy. Wehypothesiz edthata nimprovedmet hodfordesc ribing dosedi stributionto oralm ucosaa ndparoti dglandswouldbett erenablepredictionofthese dos e-limitingef fects.Duet olar geunce rtainties relatedt omo bilityoforaltongue andmonth,weus eddaily C BCTtodeli neatetheor alcavityandthegum,whic hwerethe ne xpandedby1 - mm. The shellofth eexpended1 -mms houldrepresent themucosall ayer.Ado se-surface-histogram(DSH)w asthenca lculatedfromthe differencebetween theDVHs fortheo ralcavit yfromthe1 -mmexpansion.Inadditi on,theda ilyCBCTw ouldalsoa llowustocalc ulatethe DVHs to thep arotidgl andstha tc ould bedis placedandshrunkenduri ngtheco urseo ftre atment. **Results:** Wehavesucc essfully appliedthis method totw opatients currentlyreceiv ingI MRTforH&Ncancer.Theabsolut e mucosalsurfa cea rear eceivingahighd ose(>80%of prescriptiondo se)is significantlydifferen tfromt hevo lumewi thinth eoralc avity. **Conclusion:** DSHfor ora lmucosaisa chievableusing dailyC BCTim ages.Thedosedi stributiontothemu cosamay provideuswi thamorerobustpredictor of r adiation-inducedmucositi sa nd Xerostomia.