

Hampton University Proton Therapy Institute

Functional and Safety Aspects of an Efficient Proton Therapy Facility Design

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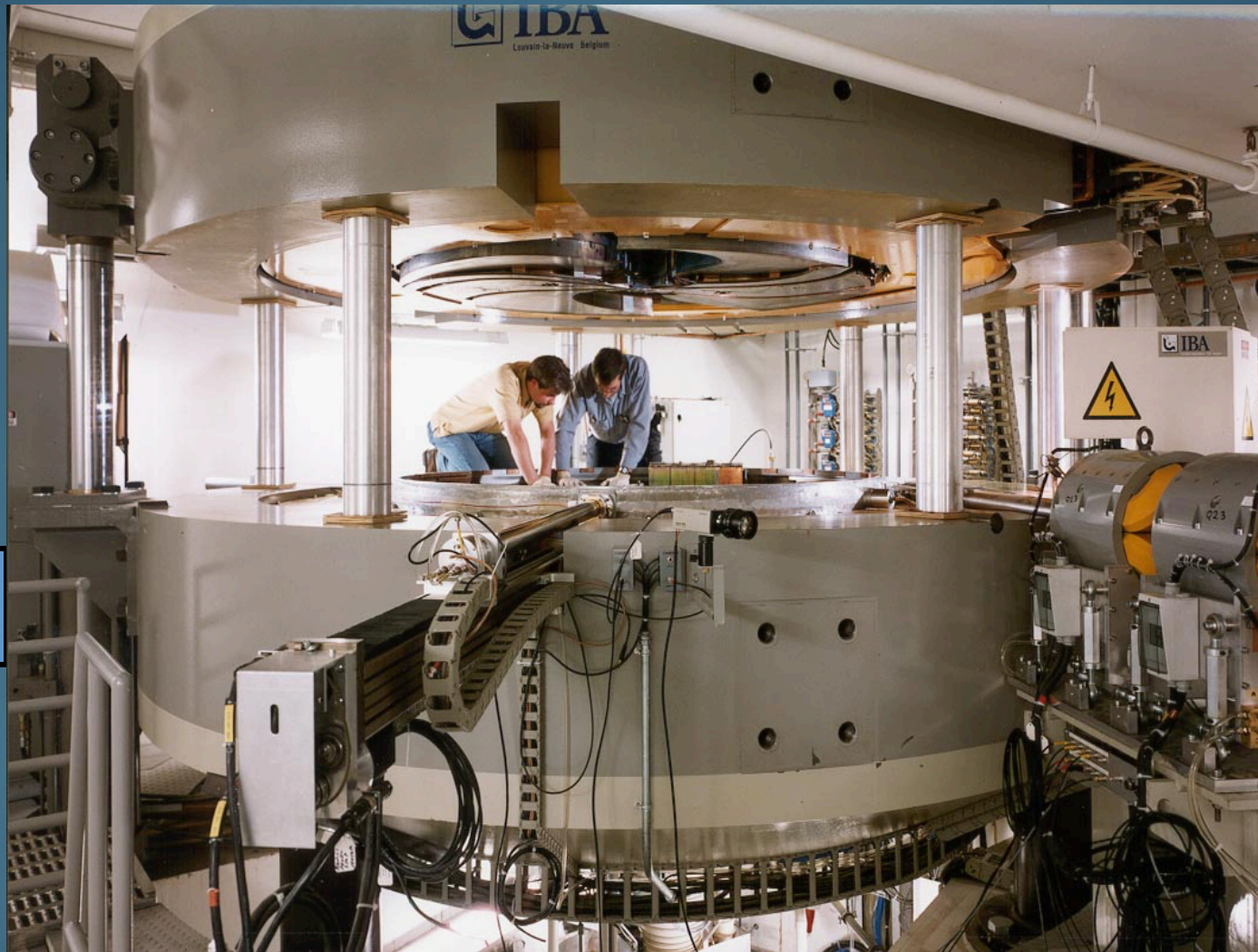
April 18, 2016

We have come a long way...



Accelerator vault

**235 MeV
Cyclotron**



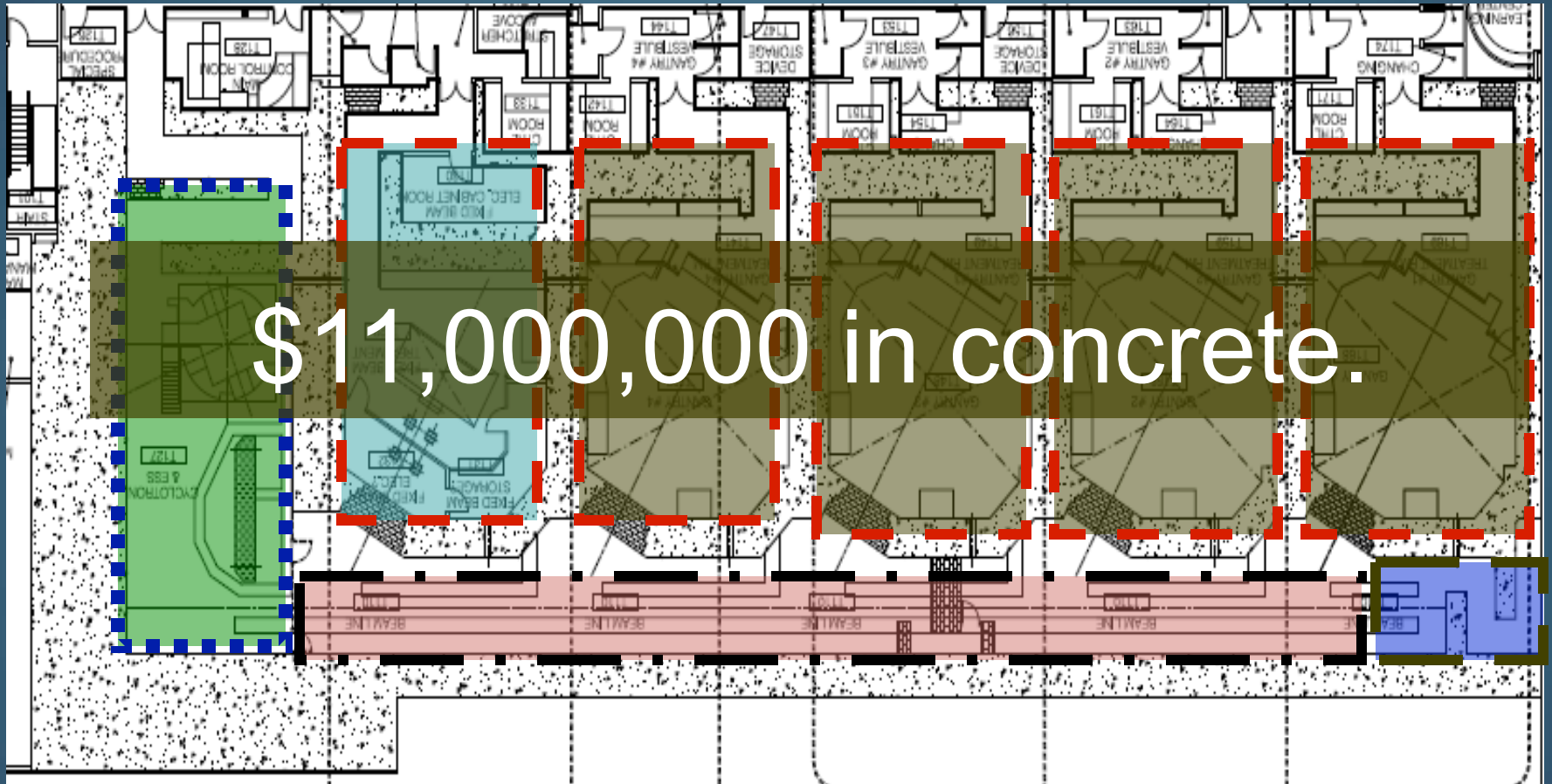
Gantry Treatment Rooms

- Treatment rooms use gantries to deliver the proton beam. The 90-ton, three-story gantries can be rotated 360 degrees to deliver the beam at the precise angle prescribed by the physician.



What will the Hampton center look like? Inside.....

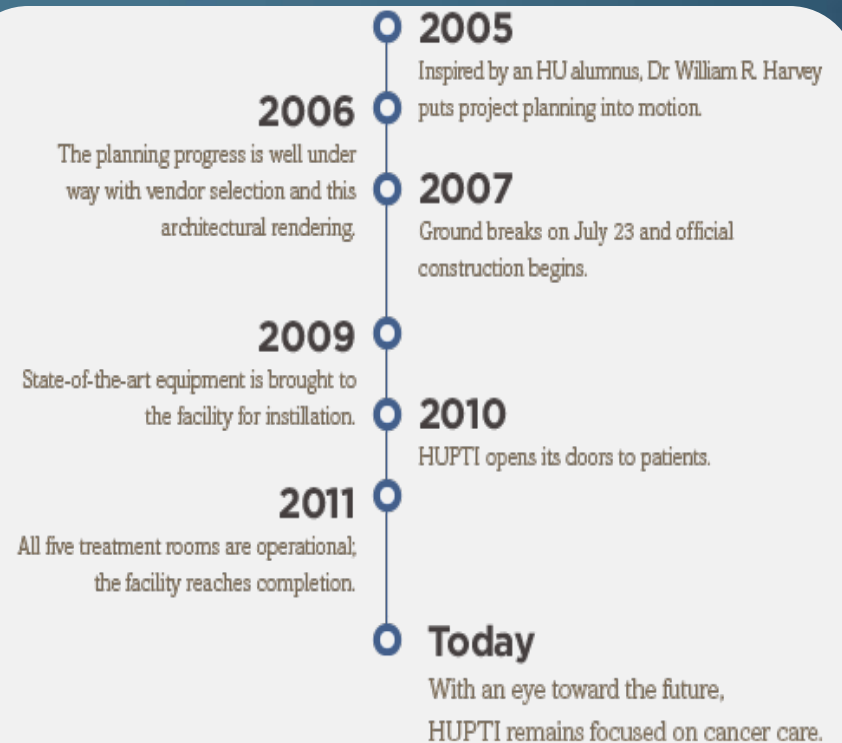
\$11,000,000 in concrete.





- HUPTI is a genuine national resource: a \$225M state-of-the-art cancer treatment facility and the nation's largest stand-alone proton beam treatment facility.

- Five treatment rooms
- Dedicated Research line
- PET/CT imaging suite
- Most advanced proton therapy technology available



HUPTI remains focused on cancer care.
With an eye toward the future.



HUPTI'S Technology



The background is a solid teal color with a subtle gradient. At the top, there are several overlapping, wavy, horizontal lines in slightly different shades of teal, creating a layered, water-like effect.

Operations

Increased Integration

Technology – Clinic - Business

Increase Usage

Make effective use technologies and information infrastructures



Optimize Workflow

Put best processes into use to optimize work & patient flow



Enhance Financial Performance

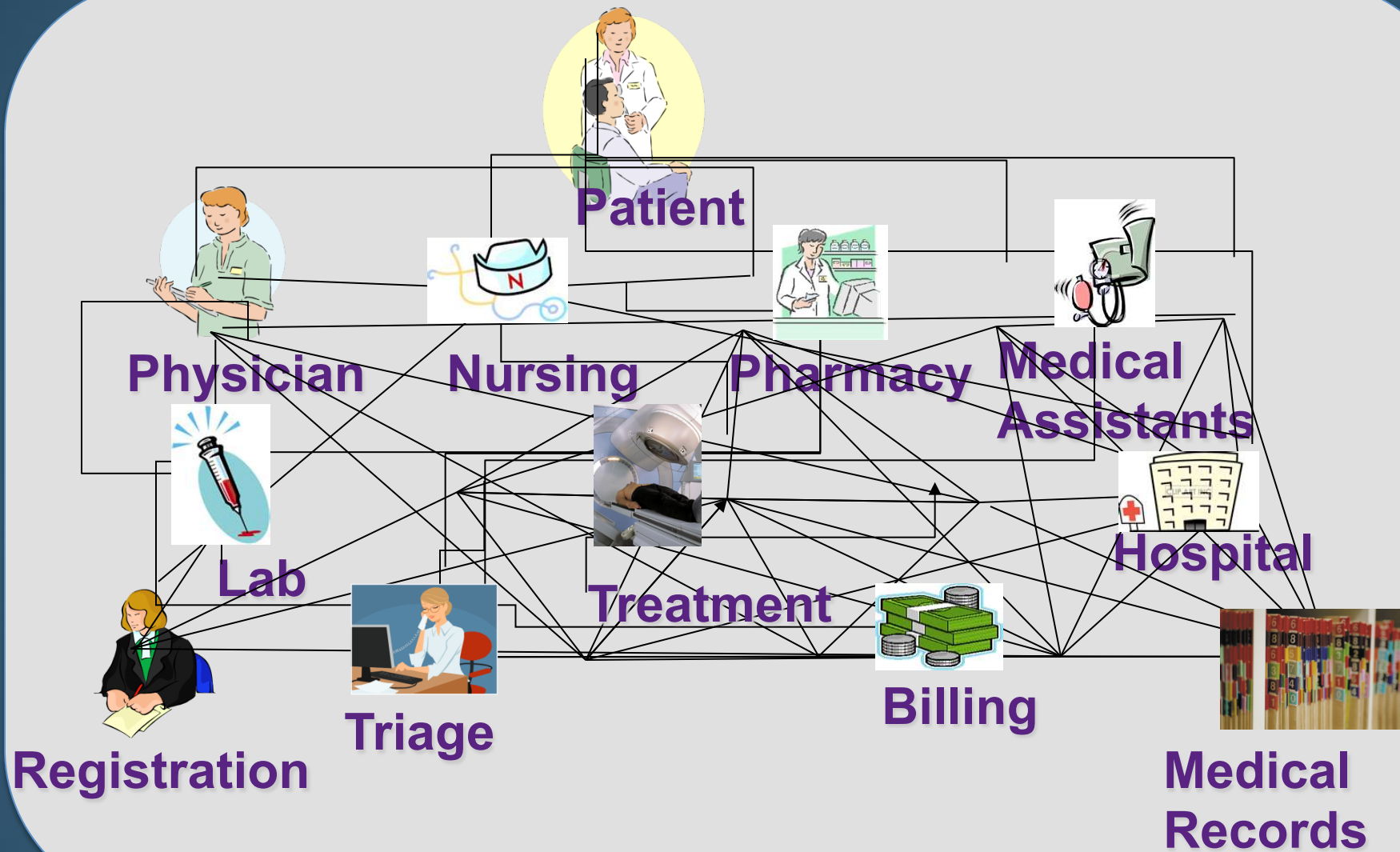
Re-think and modify processes to be more productive and maximize system use



Transformation/Implementation

Assist in implementing the change through organizations

Workflow may be complex



Process Engineering

Existing Departments

- ❑ Systematically review and analyze of sites' current processes and Oncology Information System (OIS) usage, to
- ❑ Identify opportunities for process improvement, deep usage of OIS → Oncology Management System
 - ❑ get as “paperless/chartless” or “paper light” as possible

New Hospitals/Departments:

- ❑ Best practice process mapping
- ❑ Prepare for implementation of the designed processes

Process Engineering – Value

- ❑ Clinician / staff adoption of technology
- ❑ Eliminate redundancy and improve patient flow, care quality, financial and operational effectiveness
- ❑ Create of documented, understandable, visual and maintainable operating model
- ❑ Feeds into customized vs. generic training that is tailored to your needs based on the designed processes

Results

Gets you ready
for your business,

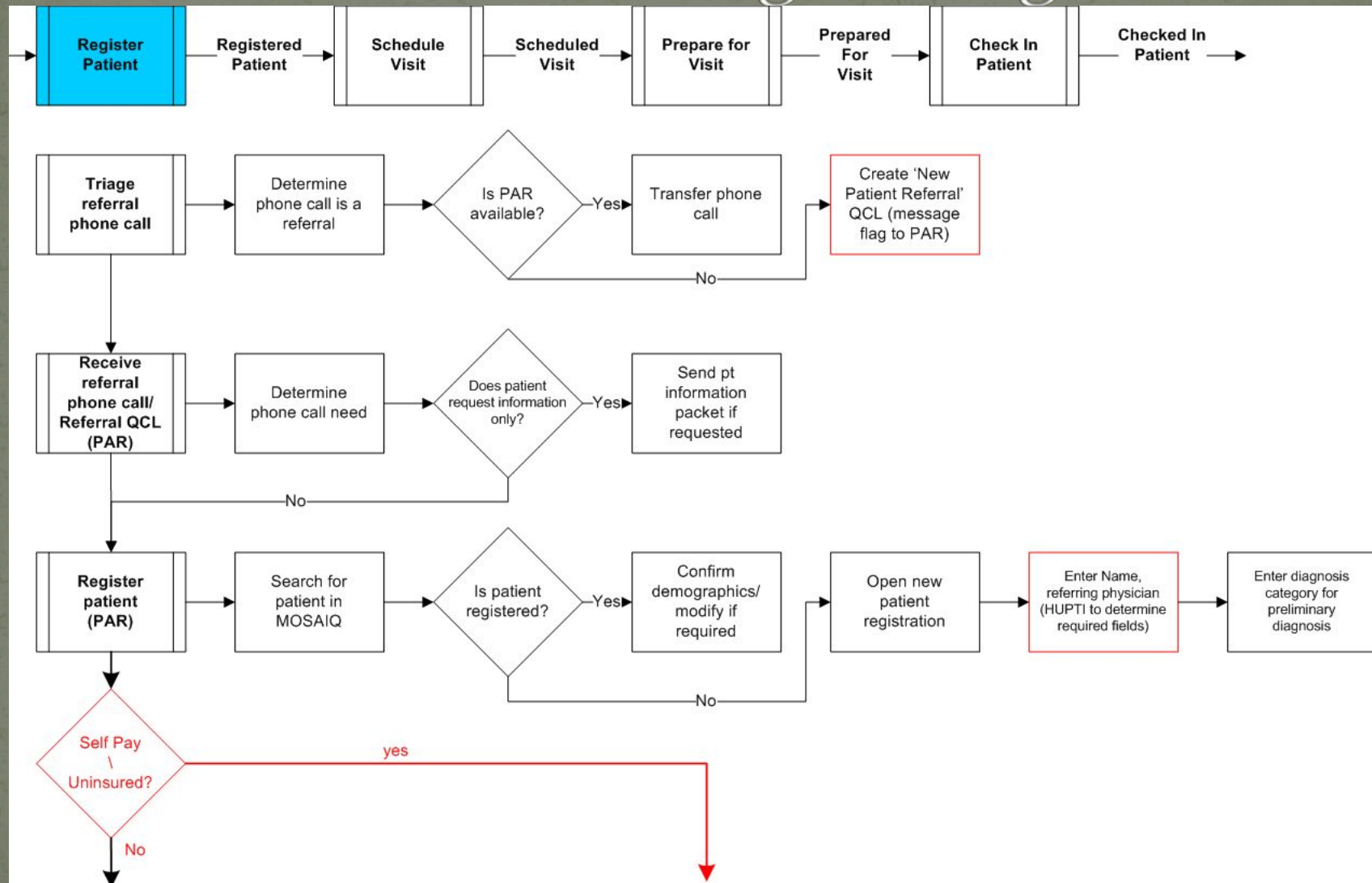
Common Departments

- ☐ Finance/Billing
- ☐ Intake and Records
- ☐ Physics/Dosimetry
- ☐ Imaging
- ☐ Nursing
- ☐ Therapy Delivery

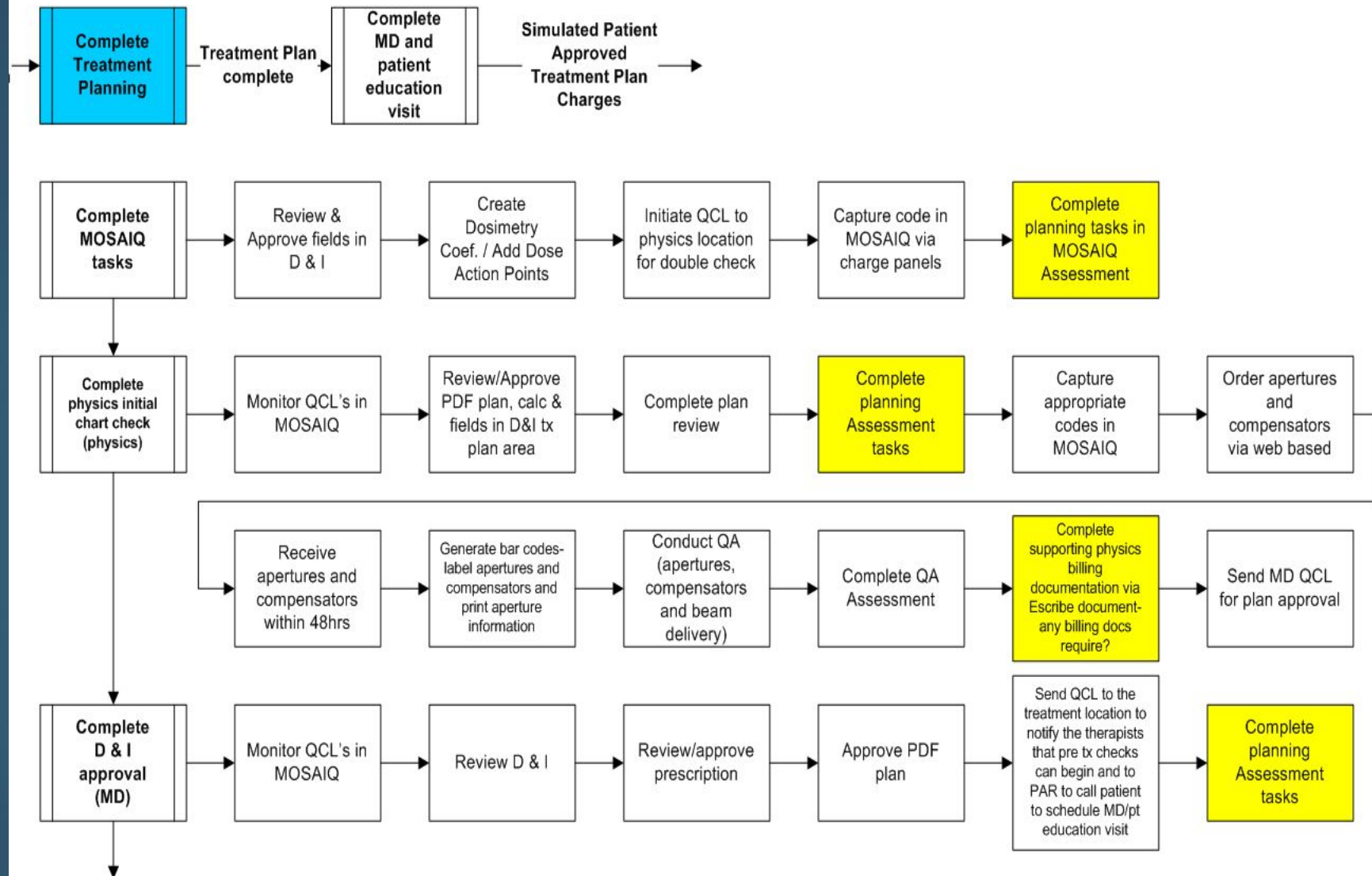
Critical Success Factors



At HUPTI – Process Engineering



At HUPTI – Process Engineering



At HUPTI - Scheduling

Scheduling:

User Defined Schedules

- ☐ Reception view (daily appointments for entire dept)
- ☐ PAR (view for scheduling PAR, nurse and MD appts for consult)
- ☐ PAR (view for PAR, nurse, and MD appts for follow-up)
- ☐ PAR (view for checkout scheduling-include CT and PET CT on one view)
- ☐ PAR (view to schedule planning review time on MD and education visit on nursing on same day)
- ☐ Nursing view (consults, fu, OTV)
- ☐ Physician specific views
- ☐ CT Sim view
- ☐ PET/CT view
- ☐ Anesthesia room view
- ☐ Gantry views (all on one view and individual views)
- ☐ Clinical Trials/Research nurse view
- ☐ On Treatment Visit view
- ☐ Support staff views (dietary, social, etc.)
- ☐ Professional billing views (view all appointment in a day for entire department)

Custom Status examples

- ☐ Start
- ☐ Final
- ☐ Break
- ☐ No show
- ☐ Cancelled

****Add additional User Defined Schedules as required****

At HUPTI – Quality Checklist Templates

- ☐ New Patient (All assigned to PAR)
 - *New Patient Package – 8 days-example
 - *Patient Reminder Call – 2 days-example
 - *Records – Diagnostic Imaging – 8 days-example
 - *New Patient Records Review (to ensure all required records are in MOSAIQ) – 8 days
- ☐ New Patient chart readiness (PAR to append to CCC and MD)
 - * CCC-chart review required
 - * MD-chart review required
- ☐ CT Sim complete (Sim therapist to MD and dosimetry)
 - * MD-CT Sim complete
 - * Dosimetry-CT Sim complete
- ☐ PET/CT Sim complete (Sim therapist to MD and dosimetry)
 - * MD-PET/CT Sim complete
 - * Dosimetry-PET/CT Sim complete
- ☐ Plan completed
 - * Gantry location-complete pre-tx checks
 - * PAR-Call/schedule patient for MD planning review and education visit
- ☐ Final Treatment
 - * Nursing * PAR * Dosimetry * Physics * MD *Billing
- ☐ Records review required
 - * CCC-records review required
 - * MD-records review required
- ☐ Physics weekly chart check (the number of weekly chart check items should match the number of weeks the patient will require treatment)

At HUPTI – Single Item Quality Checklist

- ☐ New patient referral (flag to PAR location-exclude patient's name)
- ☐ Ancillary referral (any staff to ancillary support: dietician, social worker, etc.)
- ☐ Referral or patient declined (CCC or PAR to MD)
- ☐ Missing reports (CCC or MD to PAR)
- ☐ Call patient for financial discussion (any staff to billing staff)
- ☐ Track tests results (PAR to PAR location)
- ☐ Clinical trials candidate (MD or CCC to clinical trials staff)
- ☐ Ancillary testing required (MD to clinical staff)
- ☐ Pre-auth required (PAR to PAR location)
- ☐ Normal structure contours complete (dosimetry to MD)
- ☐ Tumor volume contours complete (MD to dosimetry)
- ☐ Plan ready for review in Eclipse (dosimetry to physicist)
- ☐ Plan approval in Eclipse required (physicist to MD)
- ☐ Plan approved in Eclipse (MD to dosimetry)
- ☐ Plan double check required (dosimetry to physics)
- ☐ Plan approval in MOSAIQ required (physicist to MD)
- ☐ New scan completed (sim therapist to MD)
- ☐ Replanning contours required (MD to dosimetrist)
- ☐ New normal structure contours completed (dosimetry to MD)
- ☐ New tumor volume contours complete (MD to dosimetry)
- ☐ New plan (replan) ready for review in Eclipse (dosimetry to physicist)
- ☐ New plan approval in Eclipse required (physicist to MD)
- ☐ New plan approved in Eclipse (MD to dosimetrist)
- ☐ Replan double check required (dosimetry to physicist)
- ☐ New plan approval in MOSAIQ required (physicist to MD)
- ☐ Pre-tx checks required for new plan (MD to gantry location)

There is no Standard...

- ❑ Typically, highly custom centers
- ❑ Optimized functionality is important for ensuring safety
- ❑ Streamline workflows
 - ❑ Efficiency is critical for viability
- ❑ Maximize EFFICIENCY

Thank You!

Questions?