Capacity prioritization reduced the wait times for port placement and facilitated increased volume of port placements at a large county health system.
## Authors and disclosures

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### Disclosures
None
Wait times for Mediport placement increased from April to August 2018

During this time period, the number of Mediport requests decreased. Thus, increased waits are due to process failures.
The process for Mediport placement drives areas for data collection and improvement

- Order placed by referring provider
- Request review & protocol
- Patient scheduled for pre-procedural clinic visit with PA
- Pre-procedural visit and procedure consent with PA
- If not candidate for Port, removed from queue
- Patient scheduled for procedure at completion of clinic visit
- Patient arrives for procedure
- Patient seen, labs ordered PRN
- Mediport Placed

- Answer questions, explain procedure
- Improve angio suite efficiency (labs, consent H&P ahead of time)
- Reduce procedural no-shows
Delays in Mediport placement impair patient outcomes as:

- Chemotherapy can be delayed if there is no suitable IV access
- Placement after initiation of chemotherapy is at greater risk of procedural cancellation due to neutropenia

Thus, the goal of our project was to reduce the **average wait time** from order to implantation of Mediports to 14 days by February 1, 2018
Increasing time to clinic appointment was primarily responsible for increased wait time.

Time to complete clinic visit had been increasing and correlated with time to placement. However, both steps (scheduling clinic visit and scheduling procedure) would likely require improvement.
Potential drivers of delay and targets for intervention

Though many potential drivers, several felt to be either most likely causes or amenable to intervention.
Summary of analysis of potential drivers
Data and testing from September 2017 -- December 1, 2017

Potential drivers

Clinic capacity
- Insufficient provider availability to see Mediport patients (only scheduled with Physician Assistant)
- Visit time unable to be decreased; need additional capacity

Insufficient number of scheduled cases and clinic visits
- Number of Mediports being scheduled is far below 14 (average 8 in past 3 weeks)
- Capacity to accommodate 15-20 Mediport clinic visits per week (8-10 usually scheduled)

No-show rate for clinic appointments
- Average of 2 no-shows/week for scheduled clinic visits
- Not a primary driver and will be difficult to improve further

No-show rate for scheduled procedures
- An average of 1 no-show/week for scheduled cases
- Not a primary driver and difficult to improve further
Insufficient clinic provider capacity, lack of scheduling priorities explained low clinic volumes

No case priorities
• All patients were scheduled first available based on patient preference
• No reserved slots for any particular type of patient

Insufficient provider availability
• PA alone could not accommodate all Mediport patients expeditiously
• Faculty could accommodate additional Mediport patients each morning

Intervention: Reserve two clinic slots in faculty AM Epic schedule that can only be used for pre-procedure Mediport visits. Effective 12/18/17
Lack of prioritization explained insufficient number of scheduled placement procedures

No case priorities
- All patients scheduled first available based on patient preference
- No reserved slots for any particular type of patient

No minimum number of cases
- Schedulers agreed goal was to schedule 14 Mediports per week
- No forcing function or minimum to ensure that this goal was met

Intervention: Altered scheduling template to ensure minimum of 3 Mediport placements are scheduled per day. Effective 12/18/17

Template change for the scheduling of Mediports in IR:

There will be an initiative to place at least three ports on the schedule each day. If there is a full schedule, should be notified to identify with overbooking need. Mediports should continue to be scheduled to arrive no later than 12 noon.

If there are questions please ask
Number of port requests increased since intervention

Approximately 20% increase in number of weekly requests since intervention (which should be able to be accommodated). Variability, rather than absolute value, poses challenge.
Number of port placements increased after intervention

Significant increase in port placements since implementation of intervention.
Number of clinic visits increased after intervention

Clinic visits per period

Pre-intervention

Post-Intervention

Sustained increase in the number of clinic visits post-intervention

Significant increase in port clinic visits since implementation of reserved scheduling
Queue of patients waiting for Mediport placement (mostly) decreased after intervention

Improvement in queue after intervention, though variability persists
Wait times decreased, meeting goal of 14 days for four weeks

Goal of 14 days

Unable to consistently meet goal due to continued volume increases

Post-intervention

Median Number of Days

Order to placement
Order to Clinic
Clinic to Placement

Biweekly period of placement
Improvement in trade-offs is evidence of process improvement

Volume of ports placed has increased by 24%....

While waits have decreased by 14%

Definite evidence of process improvement
Conclusions

- An increase in flexibility and capacity of clinic resources and creation of reservation priorities in clinic and angiography suite scheduling led to improvement in the Mediport placement process
  - Number of cases completed
  - Number of patients waiting for placement
  - Wait times experienced by patients
- Process changes supported by integration into the electronic scheduling system
- Continued volume increases made it difficult to meet 14 day goal for all patients
  - Further PDSA cycles could involve collaboration with Oncology to establish different priorities depending on the urgency of a patient’s need for port