Lung Mass – Rapid Autopilot Program (RAP)

James Bond MD, Aleisha Fernandes, Fin Hodge MD, Rob McDermid MD

Aim

All patients with abnormal radiological pulmonary findings (chest x-ray or CT) at Surrey Hospital will be fast tracked (within 48 hours) into definitive diagnostic and therapeutic care by June 2019. These patients will have a consultation with a thoracic surgeon within 2 weeks of the original radiographic finding and will (if clinically indicated) receive definitive therapy (resectional surgery or oncological treatments initiated) within 8 weeks.

Background

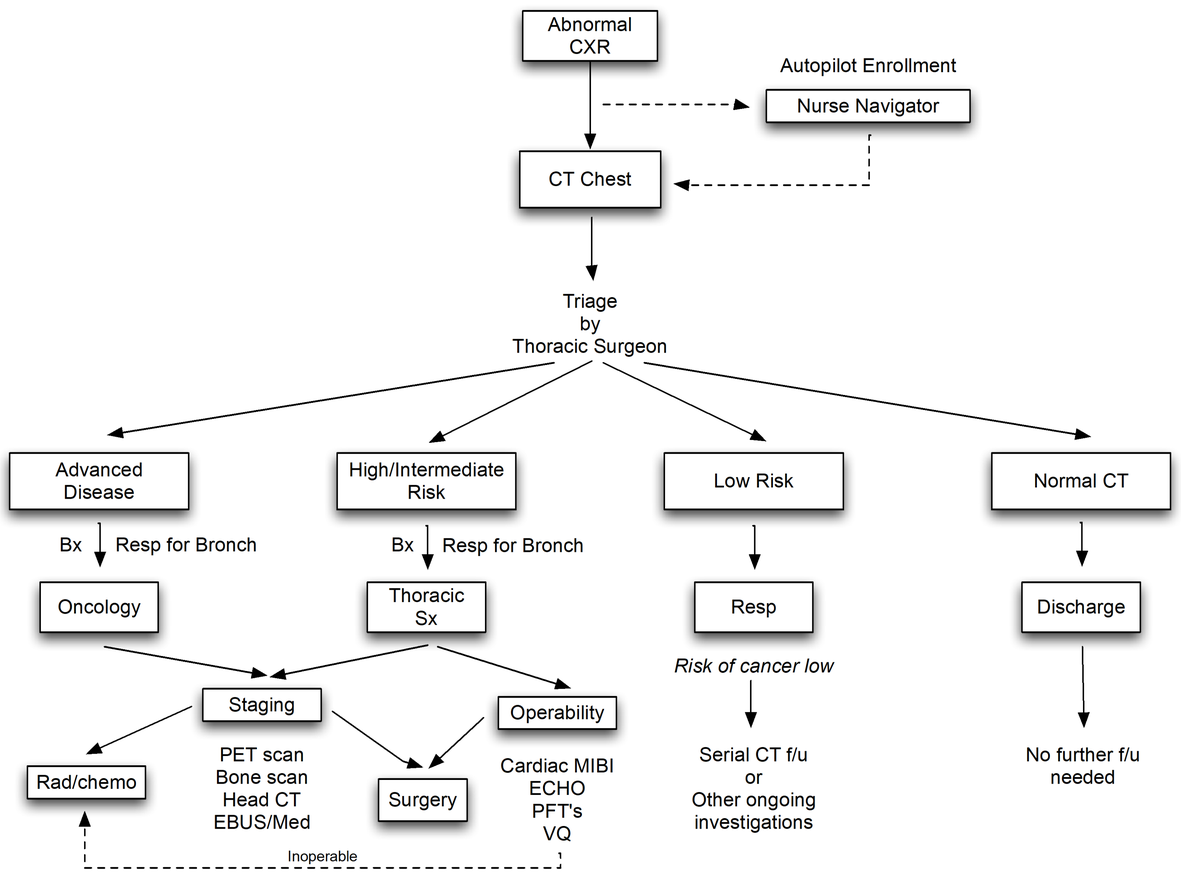
The reporting of abnormal chest radiographs and abnormal CT scans in patients with probable or possible lung cancer (masses or nodules of suspicion), should normally be acted upon by the requesting physician. A trend towards longer delays in that reaction leading to inherently long delays in time to diagnosis and treatment has been noticed by the community of physicians caring for these patients in FHA and Surrey Memorial Hospital.

Delays in diagnosis and time to treatment occur as a consequence of poorly organized systems and processes throughout the healthcare delivery system. The CMPA in 2010 (Perspective, 2010) reviewed 78 closed cases and half were found to have more than one clinical issue resulting in adverse outcomes for lung cancer patients. Three themes were identified:

1. Delay or failure to order an initial diagnostic test (a chest x-ray).
2. Failure to detect an abnormality on diagnostic imaging studies.
3. Delay or failure to respond to abnormal test results or to arrange appropriate follow-up.

The CMPA argues that "…system failures contributed to the diagnostic delay. The experts maintained that an effective system or process to manage test results could have prevented the aforementioned issues. These system failures occurred in a variety of care locations including hospitals, clinics, urgent care centers and physicians' offices".

Project Design & Strategy



References

Canadian Cancer Society (October 2010) Lung Cancer Statistics at a Glance - http://www.cancer.ca/Canadawide/About_cancer/Cancer_statistics/Stats_at_a_glance/Lung_cancer.aspx?sc_lang=en

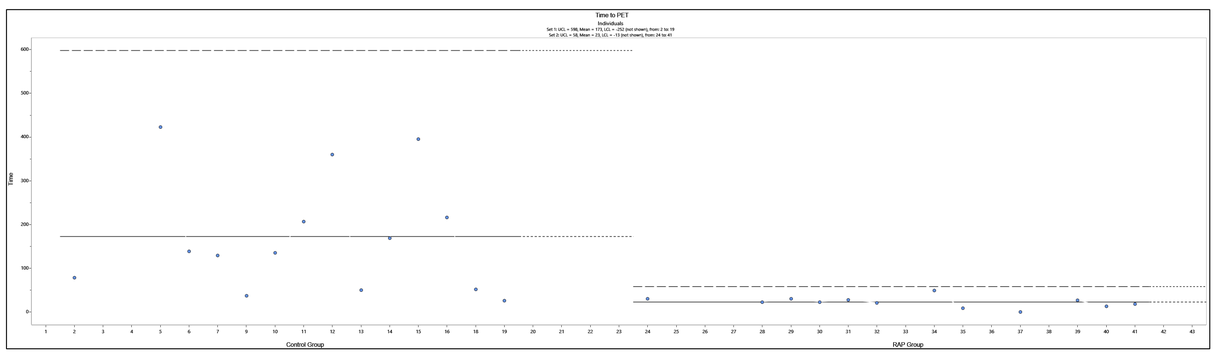
CMPA Perspective (Sept 2010, Vol 2, No. 3) Lung Cancer – The Challenge of a Timely Diagnosis - http://www.cmpaacpm.ca/cmpapd04/docs/resource_files/perspective/2010/03/pdf/com_p1003-e.pdf

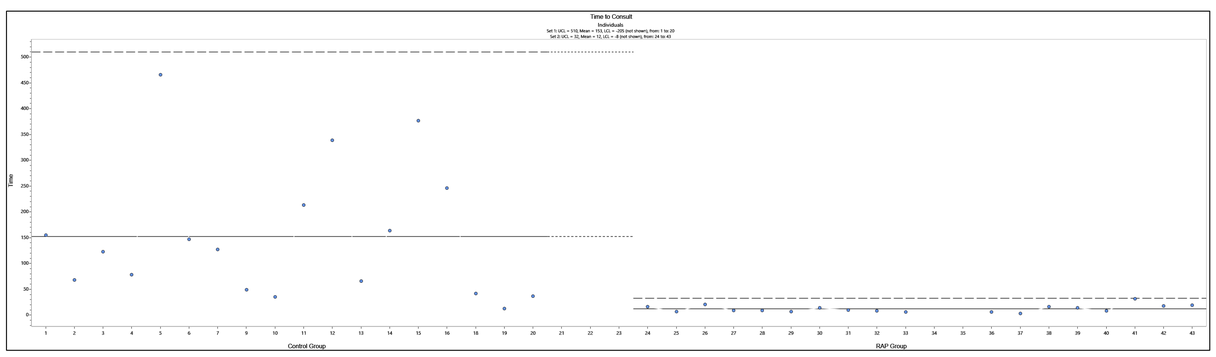
Contact: Dr. James Bond – docbond@me.com

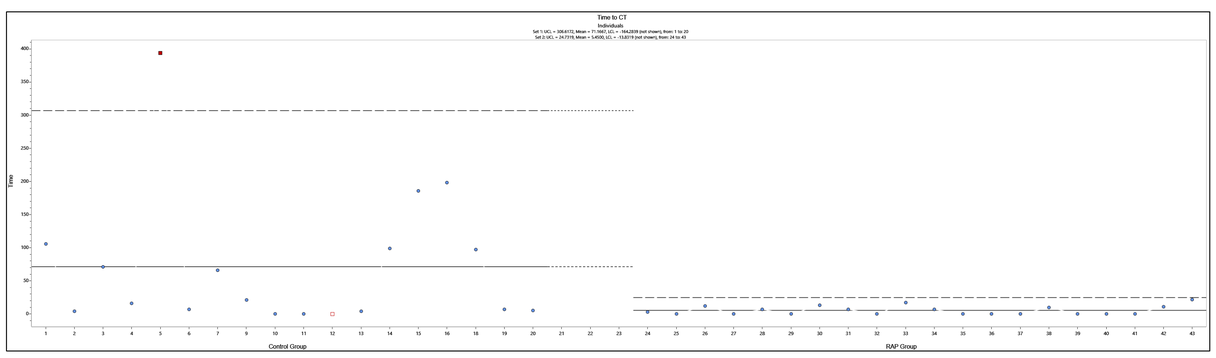
Changes Made

All patients with abnormal chest x-ray (and/or CT) were triaged to a single thoracic surgeon for review within 48 hours of the abnormal test study and report. That surgeon determined need for CT, PET scan, PFT's and other required staging/pre-op studies. That patient would be then triaged according to one of the 4 pathways determined by "risk" of the abnormality. The majority have a consultation visit scheduled with the thoracic surgeon within 2 weeks of the study/report date. All patient had an upper limit of 8 weeks from the time of the study/report date to definitive therapy (surgical resection or oncological care).

Results







The pathways of 20 patients at Surrey Hospital were modified to the proposed RAP triage rules and their timelines were compared to another 20 patients who were seen in referral by the same surgeon for lung masses. The second cohort of patients had their timelines tracked in the same way the RAP group had their timelines tracked. The RAP cohort of patients were uniformly seen by a surgeon sooner, had all diagnostic studies for stage and diagnosis sooner and were treated definitively with surgery, oncological non-surgical care or discharge from care with benign diagnosis confirmed sooner. The targets for timely care of 8 weeks were met in all cases except a few where access to PET scan was the time limiting step rather than lack of awareness of the pathology by end of June 2019.

Lessons Learned

It is possible to modify the paradigm of care from existing systems and processes to create opportunities for earlier triage to definitive care for patients with lung masses. The first PDSA was successful but revealed technical challenges that would prevent regional wide application. We will need to work with IMIT if we are overcome those challenges and create pathways for triage that can be embedded within our existing technological infrastructure.

Next Steps

- A second PDSA cycle at Surrey Memorial Hospital utilizing an embedded resource for triage notification and communication.
- Region wide roll-out when triage pathways have been finalized and stabilized.