



Multi-hospital Regional Public Hospital Laboratory Network Uses **Lean Six Sigma** to Create Substantial Gains

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PaLMS is in Australia

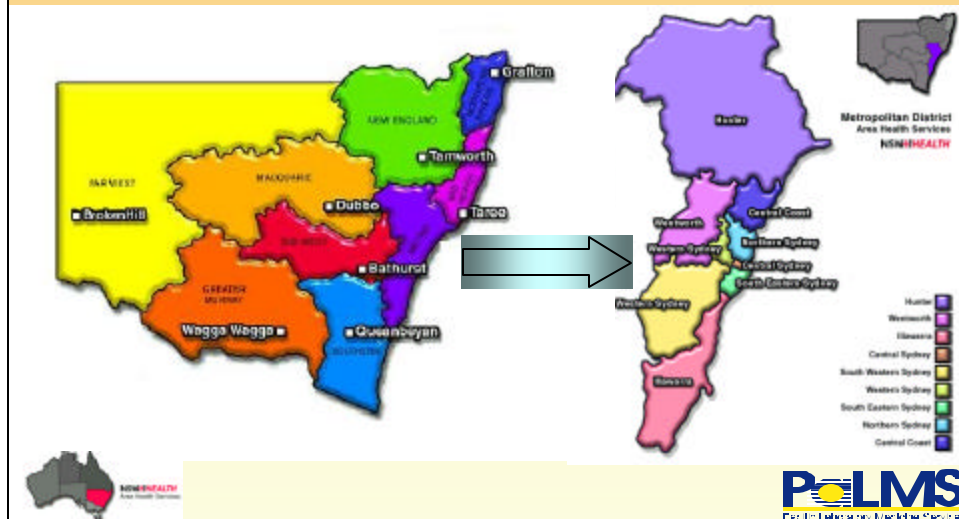


What is PaLMS

- ✍ Public pathology network
- ✍ Started at royal north shore hospital
- ✍ Then grew to service Ryde, manly, Mona vale, and Hornsby hospitals and outreach programs
- ✍ Still expanding across NSW to amalgamate into one larger public network
- ✍ Leaders in quality in pathology in Australia

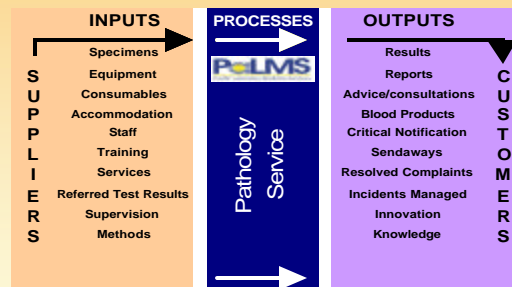


NSW Health Pathology Networking



The PaLMS Approach to Quality

Start with a SIPOC diagram

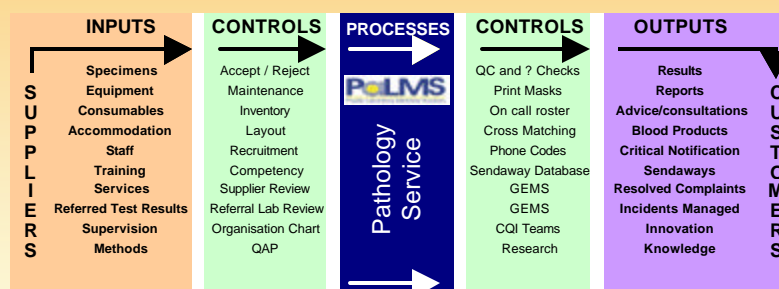


What do we need for the lab to operate?



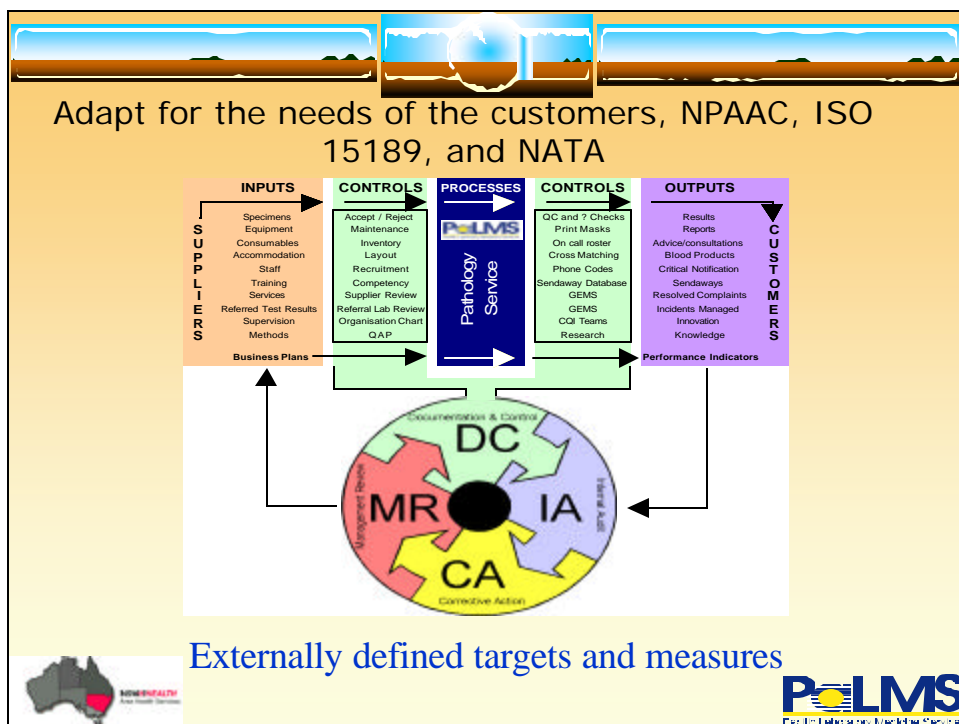
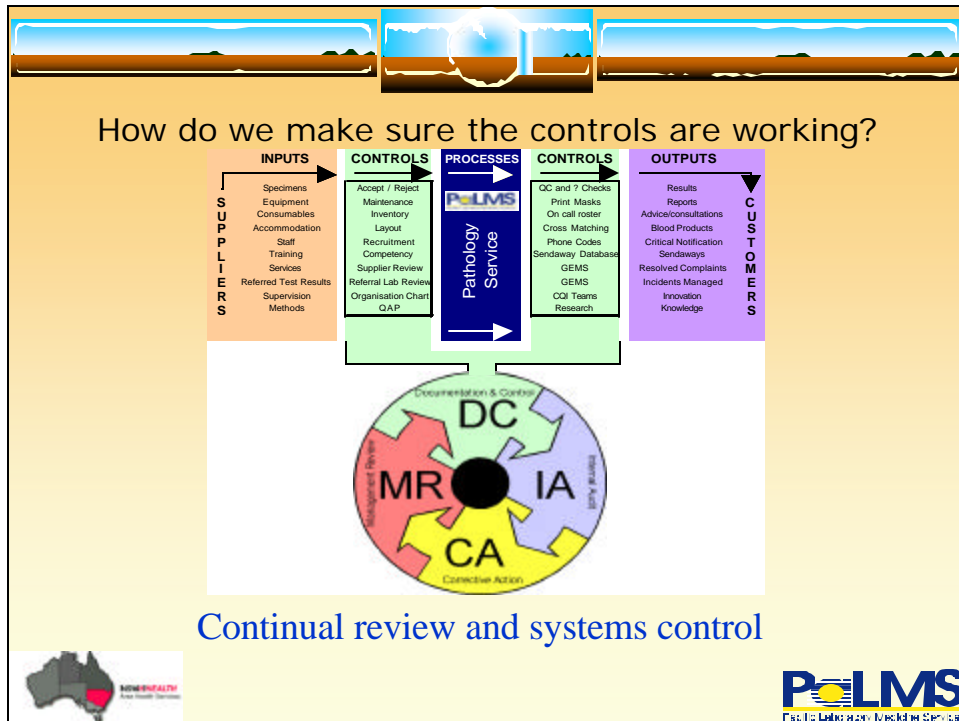
PaLMS building a Quality model


Then control the inputs and outputs

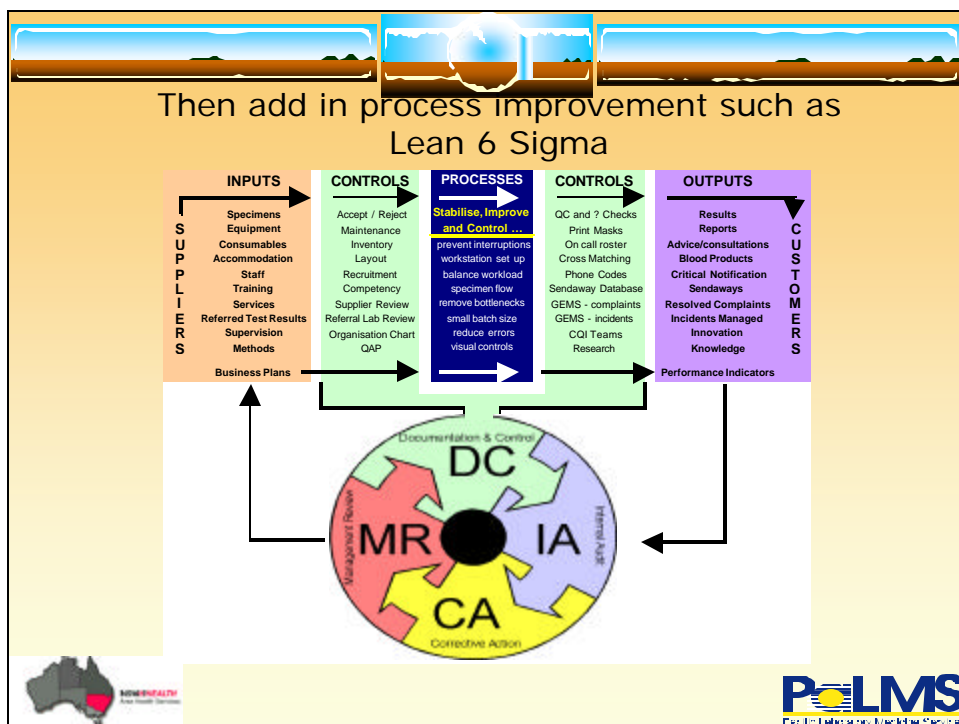


This will prevent Chaos from happening!





Management Best Practices = ABEF						
	10%	9%	6%	15%	30%	15%
	Leadership	Strategic Planning	Information and Analysis	Human Resource Development/ Management	Customer Satisfaction and Market Focus	Quality (8 control) of Products, Processes & Services
4	Managers teach Quality Management to their direct reports and serve as role model in a cascade through PaLMS.	Quality Management used for short-term and long-term planning. Every Unit has a written plan.	Data appropriately analysed, reviewed and disseminated to the right people in a timely fashion.	Education and career development plans exist and are linked to business unit goals, tactics, and strategies.	Processes exist for identifying and using: 1) market segments and customers, 2) product service features and their importance to customers.	Process in place for ensuring precision and accuracy of measurement systems, including traceability to controlled international standards.
3	Have Division - Campus - and Portfolio-wide plans for implementation of Quality Management, including necessary resources required.	Annual Operating Plan addresses: technology, human resources, suppliers, environmental issues, and competitor actions/reactions.	Leading indicators developed and used for decision making and for taking preventive action toward recurrence of problems	Quality Management training scheduled for all employees.	Proactive processes exist for determining and improving customer satisfaction (beyond just the technical result)	Process in place to assure quality of products and services (process control); Audit process used for assuring the total quality system; Continuous Improvement methods are used.
2	Mission and Vision defined, published and understood by all stakeholders.	Processes in place for linking customer/ market needs with the strategic planning process.	External data gathered (e.g. customer, supplier, competitor, benchmarking, environmental).	Recognition / rewards (beyond performance appraisal) occur in specific, sincere, immediate, and personal ways.	Processes exist to promptly resolve customer complaints.	Development and production of new products and services is documented and followed; Document control process in place and used.
1	Involvement of staff, customers, suppliers and other stakeholders regarding PaLMS commitment to Quality.	A documented long-term (2-5yrs) and short-term (0-2yrs) planning process is used.	Internal data gathered (e.g. test analysis, report, operations, processes, employees, safety, health, environmental, regulatory)	Measures and trends of employee well-being and morale exist.	Adherence to contract/ warranty guarantee policy on product and service performance.	Customer input used to develop and produce products and/or services with required characteristics.
						





Why go down the L6S path?


- ✍ Already using quality tools, performing well in the market, but there are new risks on the horizon
- ✍ We still needed to expand our strategic advantage for PaLMS to be able to compete in the changing marketplace
- ✍ Pressure to reduce costs, improving image, attracting more customers, increasing profit margins, creating a point of difference between us and the competition
- ✍ Chose to explore L6S as the vehicle to move the organisation forward, because it had the potential to deliver on the strategic needs



How do we decide if L6S will work?

- ✍ There was uncertainty of how to proceed.
- ✍ Many of the senior managers had not heard of L6S and were suspicious of QI initiatives because they had not had great success in the past with TQM, quality circles, etc.
- ✍ Tried to convince them with background articles showing L6S successes in other industries.
- ✍ Invited people to give presentations to staff and managers.
- ✍ Can we get proof that it work for us? Are there guarantees?








Can we trust the information?

- ✍ Obtained more information and quotes on L6S from industry consultants.
- ✍ They promised to expect great results, but at a large upfront cost.
- ✍ Most of the consultants used were associated with instrument manufacturers, so the thought at the back of people's minds was that they would be "consulting" with the aim of placing their instruments in our lab, not necessarily consulting to improve our lab.
- ✍ Was their information from project implementations in labs like ours?



It's time to experiment
and test the boundaries




How can we test if it will work for us?

Decided to run a pilot project internally because:




- ✍ We had some existing experience.
- ✍ Did not require a large up front cost.
- ✍ Gave the senior managers time to actually observe the difference that L6S can make.
- ✍ Allowed us to train more staff and raise awareness of what can be done.
- ✍ Allowed us to judge whether we could create our own L6S program and change the culture of the organisation, or..
- ✍ Gave us some more knowledge on what things to look for from a potential vendor.






Preparing for the Pilot Project

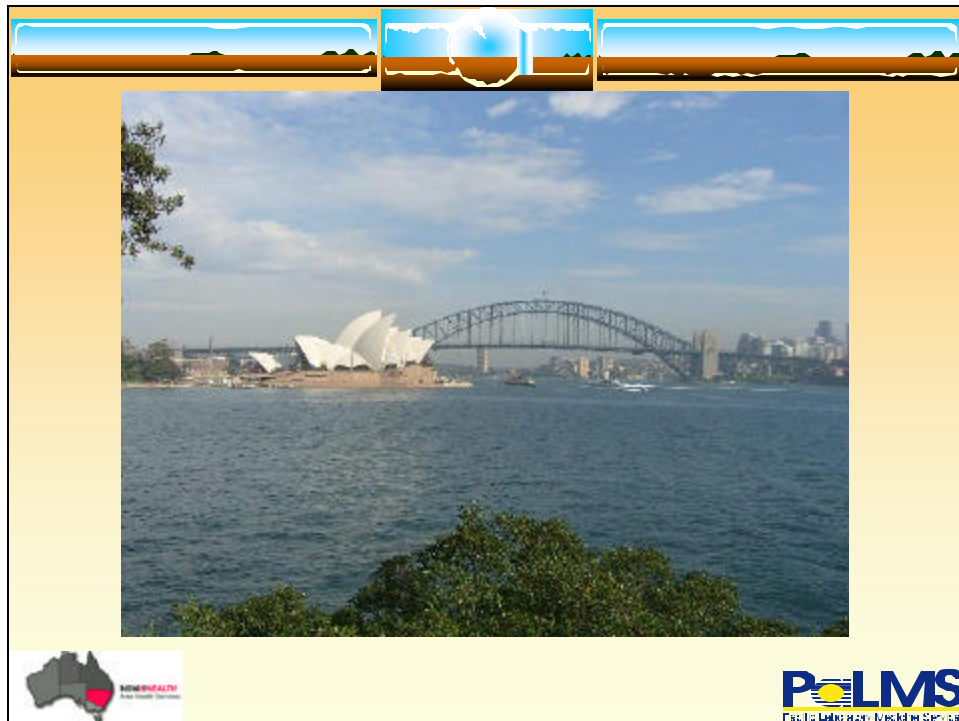
- ✍ Choosing the pilot site: location, size, acceptance.
- ✍ Advertising and gaining acceptance for the project,
- ✍ Volunteers from the wider organisation to participate.
- ✍ Needed to do something that would give visible results – quickly.
- ✍ Wanted something that was important to customers – marketability.
- ✍ Wanted something that would show the executive that this was the way forward.



Choosing the Pilot Project

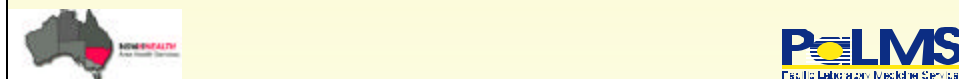
- ✍ Project selection – lab workcell, or address a potential point in a contract renewal.
- ✍ Designing a new solution Vs being reactive to a problem.
- ✍ Started by reflecting back on what was thought to be a concern from some key customers. Then actually asked the customers.
- ✍ Decided on workcell prototype due to potential scalable reproducible upside benefits, less risk if project fails.





Choosing the Pilot Site and Team

- ✍ Chose HKH due to its size in relation to our labs – was larger than MMH so the project could be scaled down for smaller labs, or scaled up for larger ones.
- ✍ Staffing – had enough to support a project.
- ✍ Lab was open to the idea of doing the project, staff there saw benefits, and wanted to make it work.
- ✍ Lab was currently well run, staff open and flexible.
- ✍ Asked for interested volunteers from all over PaLMS to participate.



The Training Course

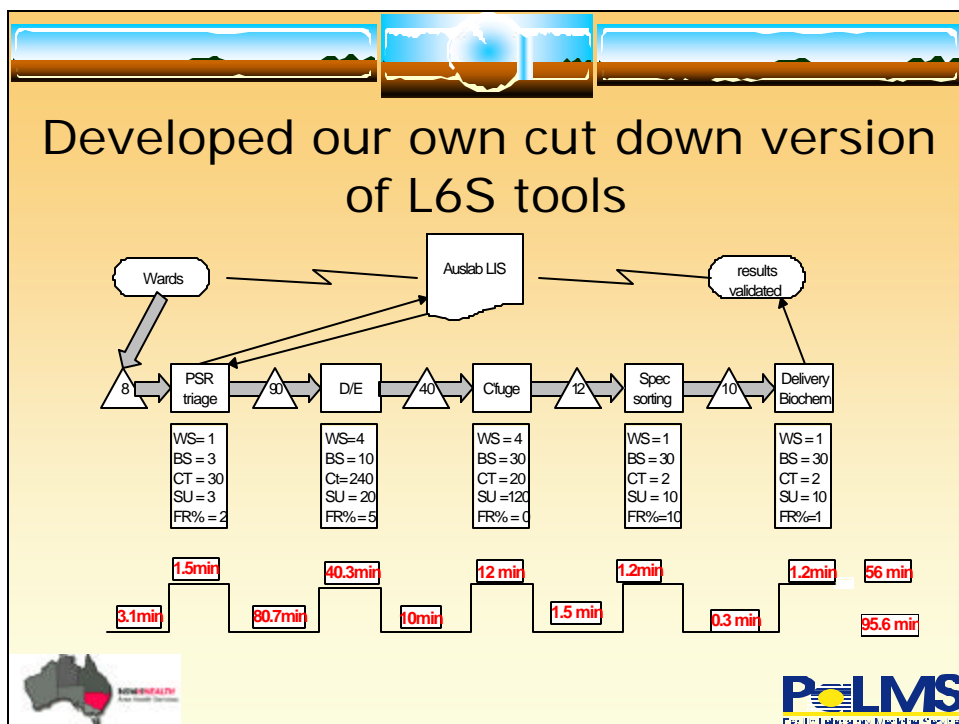
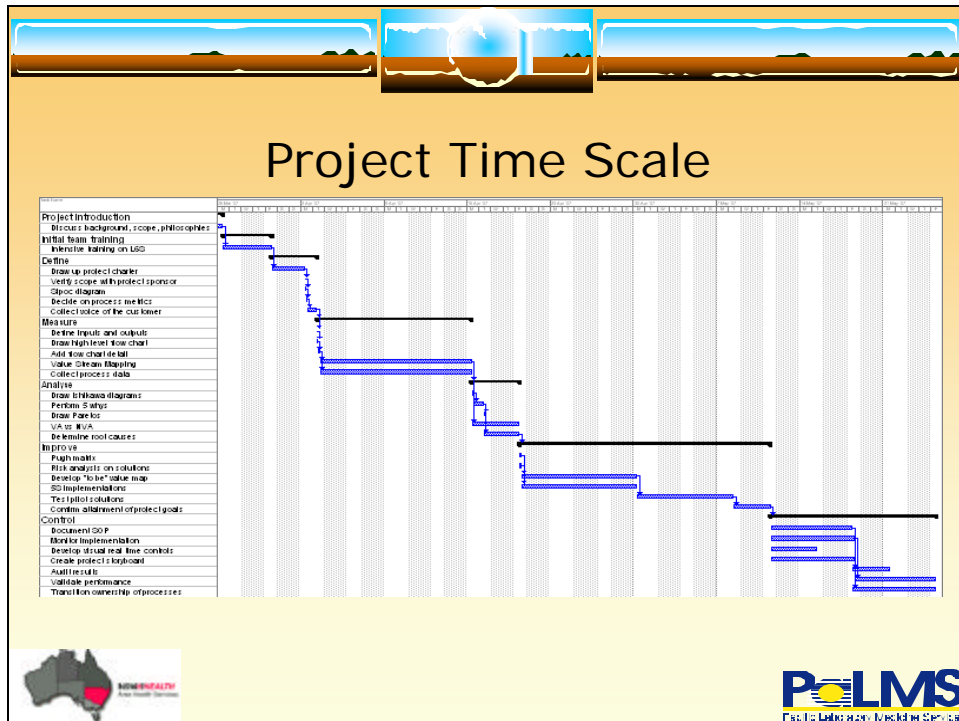
- ✍ Initial course had 2 aims: train project team & expose managers to L6S concepts and tools.
- ✍ Wanted to show people how L6S worked, give them basic tools, and get some initial experience.
- ✍ Made PowerPoint presentations on the basic concepts and tools and used role play, statistical, and workflow games to reinforce the concepts.
- ✍ Critically analysed other projects that had been previously done in PaLMS using the L6S tool set.
- ✍ Repeated the training throughout the project as “just in time” learning with the lesson and tools tailored for our current project.



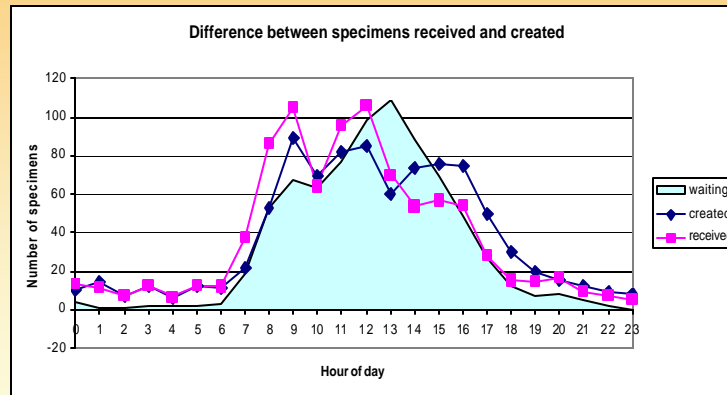
Running the Pilot project

- ✍ Project targets then set by key customers.
- ✍ Had a very strict time scale – 8 weeks – set out as Gantt chart with tasks to do – this gave staff awareness of structure and created pressure to do the task rather than argue about whether it worthwhile or necessary.
- ✍ Staff were being led through the exercises, but performed the work and developed their conclusions – ownership.
- ✍ Got lots of initial data about our processes – did not judge or blame.
- ✍ Designed experiments to test if our workflow theories would work.

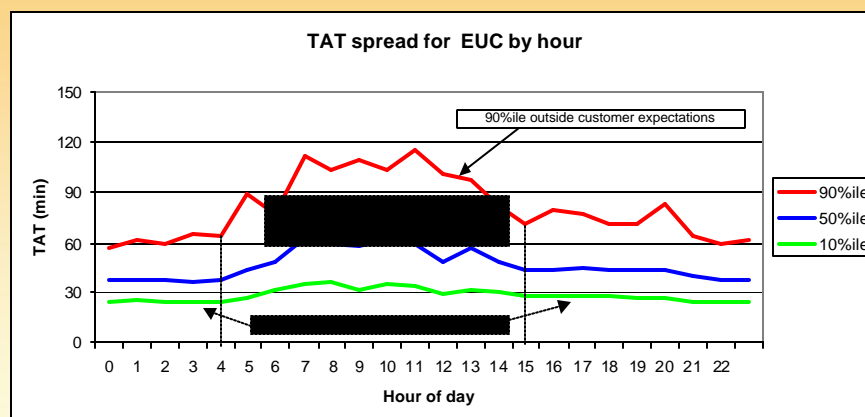




Trained Staff to Use Data



Focus on Variation



Stabilise then control

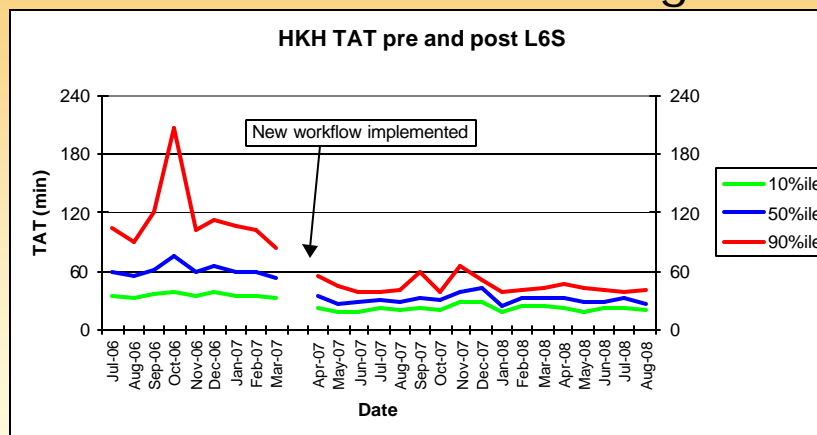


Some Great Results

- ✍ Experiments showed amazing improvements.
- ✍ Changed lab workflow to reflect the experiments.
- ✍ Reinforced changes with whole staff compliment.
- ✍ Took a lot of effort because the changes were counter intuitive and some staff just wanted to argue rather than do.
- ✍ Found specific examples of their old way Vs the new way and showed them the measurements.
- ✍ Did this with each staff member until they understood why the results happened.
- ✍ Then got compliance.



Remarkable TAT Change



Spreading the Message


- ✍ Then showcased the changes at HKH.
- ✍ Got all the managers and interest staff from all of PaLMS other sites to visit the pilot site and see the difference and take some of the more obvious lessons back to their labs to implement.
- ✍ The positive example helped to reinforce the changes.
- ✍ HKH staff became proud of their work area.
- ✍ Other MMH labs utilised the simple lessons – measure the key processes, analyse in small batches, don't do rework, don't leave specimens on the bench for the next person.
- ✍ They all started getting better results.



The Next Big Project



- ✍ The executive were happy that it worked at HKH – but still not sure if it was real reproducible result or just a fluke.
- ✍ There was a strong faction who couldn't believe that this improvement was possible without more automation.
- ✍ They were still unsure about managing processes instead of managing people, they want to test L6S.
- ✍ So they selected a larger, more complex lab with 70 staff, and a different computer system – just to push the limits.
- ✍ Changed the training and project format to get greater staff involvement and lessen the culture shock noted in the first pilot.






Changed Project Structure



- ✍ New larger lab was more complex – divisions between labs.
- ✍ Ran project as a series of sub-projects in parallel all reporting to the core team and each sub-project leader was represented on the core team.
- ✍ Allowed each group to work on their specific issues yet keep coordination across the larger lab – team leaders got to see multiple projects at once – all in sync.
- ✍ Enabled groups to be effective and had enough staff involvement to begin culture change.



Continuity

- ✍ We are still producing the great results and still improving. Keeping the staff involved and in control so they now have ownership over their workspace which gives them pride and motivation.
- ✍ Need square root of lab population involved and on board to make the new culture stick.
- ✍ Keep measures in place - need to be able to know what is going on if you are going to control it.
- ✍ Get staff to pre-decide on simple control procedures to follow when measures show process is out of control.
- ✍ 20 days to form the habit - cultural change to stick.


Why the Staff need to be involved

- ✍ The projects are about changing peoples perspective on how to organise work and how they can make themselves happy at work.
- ✍ Staff need to be involved in the project and live through it to understand why they are doing things differently.
- ✍ Need square root of workers to buy in or it doesn't take off.
- ✍ Staff need to come up with their solutions or they wont buy in.
- ✍ Cant just tell tem the answer or they will not learn how to solve the next problem.






The staff are the experts







Standard work

- ✍ Get staff to design the way the work.
- ✍ Already follow instructions in manuals on how to perform testing.
- ✍ We just defined it a bit further – what has priority, how long it takes to do a task, what is the defined batch size.
- ✍ Measures and charts give real time visual flags for when problems occur in workflows.
- ✍ Preset “panic” procedures already discussed and agreed upon.
- ✍ When everyone thinks and does the same – it removes variation and random judgement.



The Difficulties

- ✍ The old managers are still suspicious of L6S – they haven't had exposure and still don't understand it.
- ✍ The parent organisation still doesn't want to spend any money – they say you can do it by yourself.
- ✍ It is labour intensive – takes a lot of effort to get off the ground and to keep enthusiasm going.
- ✍ Staff need to be involved to get the changes through and then to make them stick – the cultural shift takes a bit longer too.
- ✍ People on the outside still want the magic bullet of efficiency but don't really want to change anything.



What Really Works For Us

- ✍ Involving staff and customers
- ✍ Understanding and measuring processes
- ✍ Using data to make good decisions
- ✍ Removing variation with standard work
- ✍ Having visual controls
- ✍ Agreeing on panic procedures
- ✍ Keeping everything as simple as possible
- ✍ Regular reviews with learning



L6S works for us and we're happy we tried it





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