

Hello,
Apologies for being late in bringing out this month's newsletter... It is hot and I think it is making the senses dull. Also, I had what might be called a 'writer's block'. I would sit down at my pc to write some thing and nothing would come out!
It took extra effort to get going again, and I



don't know whether the end result - this issue has been worth the effort.
This month, I would like to draw your attention towards some assorted articles about a) application of industrial processes to health care settings, b) effects of herbal remedies on clinical tests, c) pathology terminology and d) a last one about doctors and wealth.

Can we apply industrial processes like "lean thinking", "six sigma" to improve patient care?

Continuing from our theme of improving the health care delivery, I found an article from British Medical Journal which elaborates these processes and their possible application to medicine. I found that, these **processes may be difficult to apply in their entirety to our small facilities**, but the way of



thinking that these processes advocate can be adapted by anyone of us, and when we start to think like these management gurus, I think, our work processes would be sort of, smoothened out. (page 2)

Herbal remedies are sometimes used by patients out of frustration with allopathy or sometimes as a fashion statement, do these therapies affect lab tests? If so, how?

In this article from "Archives of Pathology and Laboratory Medicine", number of published reports of effects of herbal remedies on lab tests is summarized. **Article concludes that,**



use of **alternative medicines may significantly alter lab results**, better communication between pathologists and clinicians is necessary for correct interpretation of such results. (page 3)

Have you ever faced a pathology report and wondered, what the devil does he/she mean by that?

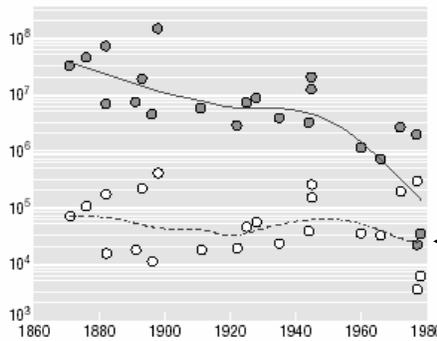
If the answer is yes, then this survey published in "Journal of



"Clinical Pathology" is for you. It takes a look at **terminology interpretation** about "What constitutes a **histological confirmation of cancer?**" (page 4)

Do you earn more if you are a distinguished doctor?!

This strange but interesting study, from **British medical journal**, takes a look at **earnings of distinguished doctors of UK** over a period of about **140 years**. Interestingly, the



study found that the **earnings** of all doctors including the **distinguished ones**, is going down.

(Some consolation there? Hey, we are not alone!)

(Page 5.)

Wealth (vertical axis) of Royal College Physicians going down over the years (Horizontal axis).

So this is it for this month. Have a great summer!

Thanks and Regards,



~Sachin

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Back issues of this newsletter available online –
<http://sachinkale1.tripod.com>

(1, Cont.)

Closer look at health – through the Internet

Using industrial processes to improve patient care

Terry Young, Sally Brailsford, Con Connell, Ruth Davies, Paul Harper, Jonathan H Klein

- a) Might industrial processes improve quality, reduce waiting times, and enhance the working Environment?
- b) Radical thinking about the design of industrial processes over the last century has greatly improved the quality and efficiency of manufacturing and services. Similar methods to deliver higher quality health care at lower cost would be extremely valuable. In health care, however, we must also consider how patients feel about the processes and the extent to which they are able to exercise meaningful, informed choice.
- c) Here couple of established industrial Approaches—lean thinking and six sigma, are introduced.
- d) If you think these are interesting details can searched on internet using any search engine.

Five key concepts for lean thinking

Value—Products should be designed for and with customers, should suit the purpose, and be set at the right price

Value stream—Each step in production must produce “value” for the customer, eliminating all sources of waste. The concept of waste is far reaching and may include waiting, travel, mistakes, or inappropriate processing

Flow—The system must flow efficiently, ideally without intermediate storage. Among other things, flow depends on materials being delivered, as and when they are needed, to the quality required

Pull—The process must be flexible and be geared to individual demands—producing what customers need when they need it

Perfection—The aim is perfection. Lean thinking creates an environment of constant review, emphasizing suggestions from the “floor” and learning from previous mistakes



Six sigma

Six sigma begins with a detailed survey of critical customer requirements by senior management, whose visible leadership is vital. Expert leaders identify critical activities, and a cross functional team

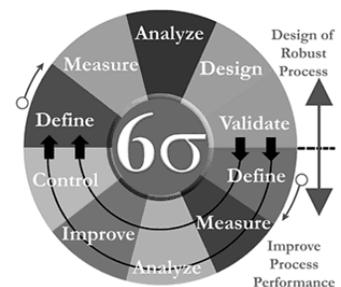
implements a four phase methodology (access to automated information is important to making six sigma work)

Measure—Identify process defects that influence critical customer requirements and collect defect data

Analyse—Analyse these data to identify opportunities for defects, and the variables that cause them

Improve—Quantify the impact of these variables and determine acceptable ranges—one sigma, two sigma, etc (most companies are at the three or four sigma level). Identify and make the changes necessary

Control—Monitor process performance using statistical process control tools



Summary points:

- a) An array of industrial and commercial process philosophies could be useful for those seeking to modernise the health services.
- b) If these can be applied effectively to health care they could improve quality of care, reduce waiting times, and provide a less stressed working environment.
- c) Strategic simulation of healthcare delivery could be useful to test the effects of commercial models on the health services.

**Herbal Remedies
Effects on Clinical Laboratory Tests**

Amitava Dasgupta, PhD; David W. Bernard, MD, PhD



- a) Herbal medicines are easily available everywhere without prescription.
- b) The general concept that anything natural is safe, is not true – herbal medicines can also be toxic and have significant side effects.
- c) Herbal remedies affect lab tests in three ways 1) Direct assay interference 2) Physiologic effects through toxicity or enzyme induction 3) Effects of contaminants.

Table 2. Interference of Herbal Products in Therapeutic Drug Monitoring of Digoxin

Herbal Product	Interference	Comments*
Chan Su	High	Chan Su has active components like bufalin that cross-react with FPIA, MEIA, Roche, Beckman, and turbidimetric (Bayer) digoxin assay. Only Bayer's CLIA assay has no interference.
Lu-Shen-Wan	High-moderate	It also has active components like bufalin that cross-react with FPIA, MEIA, Roche, Beckman, and turbidimetric (Bayer) digoxin assay. Only Bayer's CLIA assay has no interference.
Siberian ginseng	Moderate	Falsely elevated digoxin (FPIA) or falsely low digoxin (MEIA). No interference with EMIT, Bayer (CLIA and turbidimetric), Roche, or Beckman assays.
Asian ginseng	Moderate	Falsely elevated digoxin (FPIA) or falsely low digoxin (MEIA). No interference with EMIT, Bayer (CLIA and turbidimetric), Roche, or Beckman assays.
Dan Shen	Moderate	Falsely elevated digoxin (FPIA) or falsely low digoxin (MEIA). No interference with EMIT, Bayer (CLIA and turbidimetric), Roche, or Beckman assays.

* FPIA indicates fluorescence polarization immunoassay (marketed by Abbott Laboratories), MEIA, microparticle enzyme immunoassays; CLIA, chemiluminescent immunoassay (marketed by Bayer Diagnostics, Tarrytown, NY).

Table 3. Common Drug-Herb Interactions

Herbal Product	Interacting Drug	Comments
Ginseng St John's wort	Warfarin	Ginseng may decrease effectiveness of warfarin
	Paxil	Lethargy, incoherence, nausea
	Digoxin	Decreased area under the curve, peak, and trough concentration of digoxin; may reduce effectiveness of digoxin
	Cyclosporine/FK 506	Lower cyclosporine: FK506 concentrations due to increased clearance; may cause transplant rejection
	Theophylline	Lower concentration, thus decreases the efficacy of theophylline
	Indinavir, lopinavir, ritonavir, atazanavir	Lower concentration may cause treatment failure in patients with human immunodeficiency virus
Ginkgo biloba	Statins	Reduced plasma concentrations of simvastatin, but no effect on pravastatin
	Irinotecan, imatinib	Reduced efficacy
	R- and S-verapamil	Increased clearance
	Oral contraceptives	Lower concentration/failed birth control
	Aspirin	Bleeding because ginkgo can inhibit platelet aggregation factor
Kava	Warfarin	Hemorrhage
	Thiazide	Hypertension
Garlic	Alprazolam	Additive effects with central nervous system depressants, alcohol
Ginger	Warfarin	Increases effectiveness of warfarin, bleeding
Feverfew	Warfarin	Increases effectiveness of warfarin, bleeding
Dong quai	Warfarin	Increases effectiveness of warfarin, bleeding
Dan Shen	Warfarin	Dong quai contains coumarin; dong quai increases international normalized ratio for warfarin, causes bleeding
	Phenobarbital	Increases effectiveness of warfarin due to reduced elimination of warfarin
Comfrey	Phenobarbital	Increases metabolism of comfrey, producing a lethal metabolite from pyrrolizidine, severe hepatotoxicity
Evening primrose oil	Phenobarbital	May lower seizure threshold, need dose increase

Concluding remarks:

- A) Herbal Medicines are crude products often containing active ingredients as well as toxic components.
- B) Heavy metal contamination, adulteration with western pharmaceuticals and prohibited plant and animal ingredients has been regularly reported.
- C) Doctors should be aware of potential use of such remedies by their patients.
- D) Abnormal lab tests may serve as a clue to relevant investigation in patients, in whom symptoms may be related to use of herbal products.



The Monthly Microscope

(3, Cont)

What constitutes a histological confirmation of cancer? A survey of terminology interpretation in two English regions.

P Silcocks, M Page

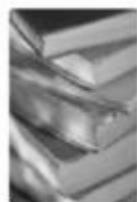


Table 1 Phrase and percentage of pathologists stating it confirms a diagnosis

Phrase	% "Confirm"	LCL	UCL	Number of respondents
Diagnostic of	98.7%	91%	100%	78
Characteristic of	96.1%	88%	99%	77
Represents	95.9%	88%	99%	74
Appearances of	94.9%	87%	98%	78
Typical of	90.9%	82%	96%	77
Indicates	90.5%	81%	95%	74
Indicative of	89.6%	80%	95%	77
That of	89.2%	80%	95%	74
Show	85.1%	75%	92%	74
Consistent with	70.5%	59%	80%	78
In keeping with	65.8%	54%	76%	76
Compatible with	62.2%	50%	73%	74
Most likely	32.9%	23%	45%	73
Rules out	31.5%	22%	43%	73
Appears to be	25.0%	16%	36%	72
Highly suspicious of	23.4%	15%	34%	77
Apparently	22.2%	14%	33%	72
Likely	20.3%	12%	31%	74
Suggestive of	18.4%	11%	29%	76
Favours	18.4%	11%	29%	76
Suggests	14.5%	8%	25%	76
Probable	12.0%	6%	22%	75
Seems to be	10.8%	5%	20%	74
Suspicious of	10.5%	5%	20%	76
Reminiscent of	8.5%	4%	18%	71
Presumed	6.8%	3%	15%	74
Appearances approaching	5.5%	2%	14%	73
Not ruled out	5.3%	2%	14%	75
Worrisome	4.0%	1%	12%	75
Questionable	3.9%	1%	12%	77
Suspects	2.8%	1%	11%	72
Risk of	1.4%	0%	10%	70
May be	1.4%	0%	9%	74
Possible	1.3%	0%	9%	75
Not excluded	0.0%	–	4%	74
Equivocal	0.0%	–	4%	76
Could be	0.0%	–	4%	74

Phrases in bold are regarded as definitive.

LCL, lower 95% confidence limit; UCL, upper 95% confidence limit.



Conclusion:

- A) The registry should ignore four of the 13 terms currently regarded as confirmatory.
- B) Terminology used in pathology reports should be standardized across registries.
- C) Registries and coding departments should use empirical evidence to assess which phrases confirm a diagnosis.

(4, Cont)

a) Purpose of this paper was to compare interpretation by cancer registries and histopathologists of phrases that may or may not confirm the diagnosis of cancer

b) Number of pathologists were sent a questionnaire containing phrases used in path reports – some indicating cancer others not.

c) Paths were asked whether each phrase confirmed, ruled out a diagnosis or made it remain uncertain.

d) There was 58% response rate with similar interpretation between different regions

e) At least 50% respondents considered 12 terms as confirmatory.

The wealth of distinguished doctors: retrospective survey

I C McManus

a) Objective of this study was to assess the wealth of distinguished doctors of UK between 1860 and 2001

b) Main outcome measure was the wealth at death adjusted relative to average earnings in 2002

c) It was found that wealth of distinguished doctors declined substantially between 1860 and 2001 and paralleled a relative decline in income of doctors in general.

Mean wealth at death of distinguished doctors, relative to average earnings in 2002, and Gini coefficients by date of death

Date of death	No of doctors	Mean Wealth ₂₀₀₂ (SD)	Gini coefficient (SE)
1830-79	225	8.05m (£13.7m)	0.633 (0.038)
1880-99	168	10.1m (£19.6m)	0.683 (0.047)
1900-19	112	10.0m (£13.7m)	0.600 (0.051)
1920-39	104	4.97m (£7.63m)	0.607 (0.054)
1940-59	110	2.75m (£3.44m)	0.570 (0.049)
1960-79	129	871k (£1.10m)	0.561 (0.044)
1980-2001	132	597k (£658k)	0.521 (0.041)

d) **Conclusion:** In the 19th century, distinction in doctors was accompanied by substantial wealth, whereas by the end of the 20th century, the most distinguished doctors were less wealthy than their contemporaries who had achieved national distinction in other areas.

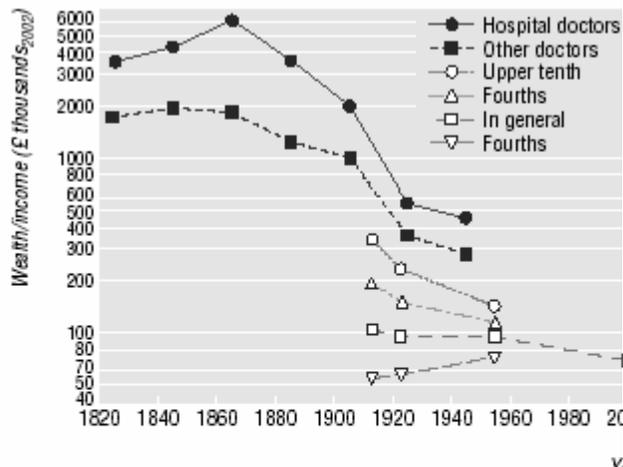


Fig 4 Wealth of medical practitioners in general (median (open squares), fourths (open triangles), and upper tenth (open circles)) for 1913-4, 1922-3, and 1955-6, and median wealth of distinguished doctors in the *Oxford Dictionary of National Biography* (hospital doctors (solid circles); other doctors (solid squares)). Distinguished doctors are plotted at approximate mid-point of working life



Sir James Paget: - Enriched by surgery

The Monthly Microscope

Parting Thought...



"I have learned since to be a better student, and to be ready to say to my fellow students, I do not know"

- Sir, William Osler

(5, End)