



'The Future of Laboratory Medicine'

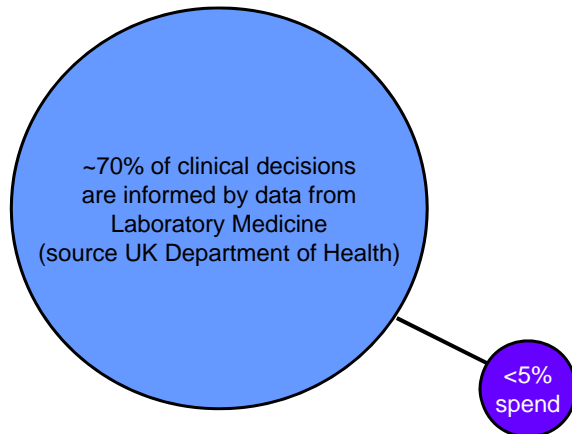
Graham Beastall

gbeastall@googlemail.com

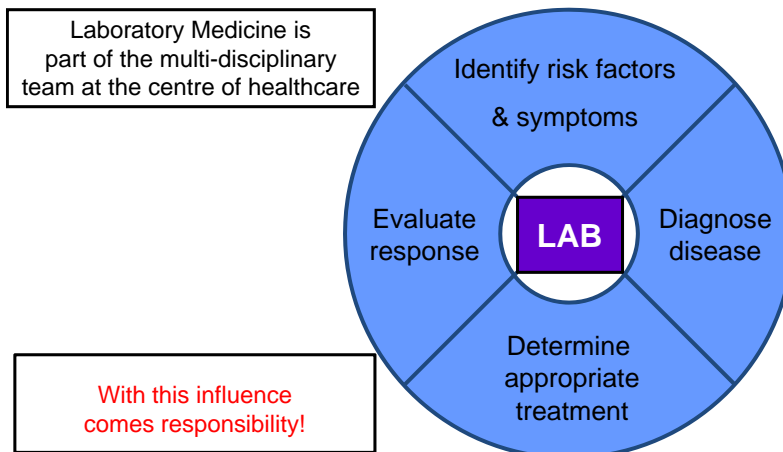
Outline of Talk

- Central Role of Laboratory Medicine
- Quality Matters
- Adding Value to Laboratory Medicine Results
 - Standardisation and harmonisation
 - Clinical effectiveness
 - Innovation
 - Evidence-based practice
 - Novel applications
 - Cost effectiveness
 - Education of others
- Summary

Central Role of Laboratory Medicine



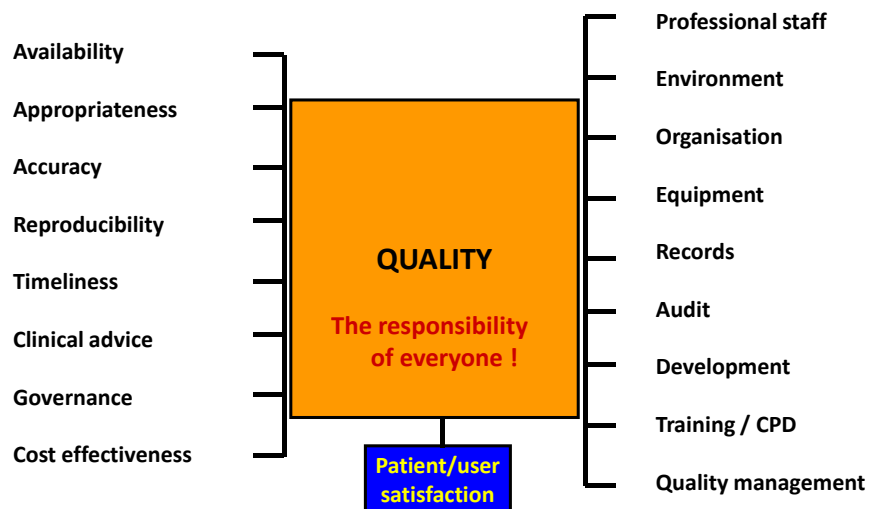
Central Role of Laboratory Medicine



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Quality in Laboratory Medicine

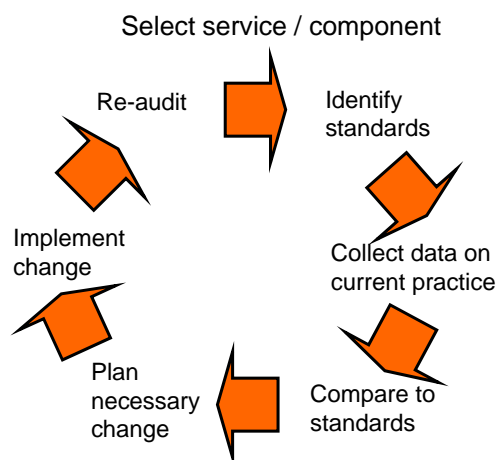


Quality: Laboratory Accreditation

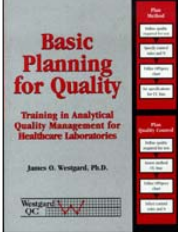
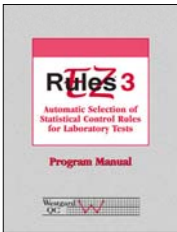
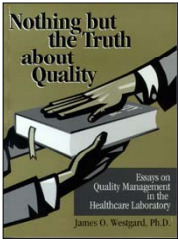


The Quality (Audit) Cycle

Clinical governance demands continuous quality improvement




Quality: James Westgard Publications



Quality Conferences

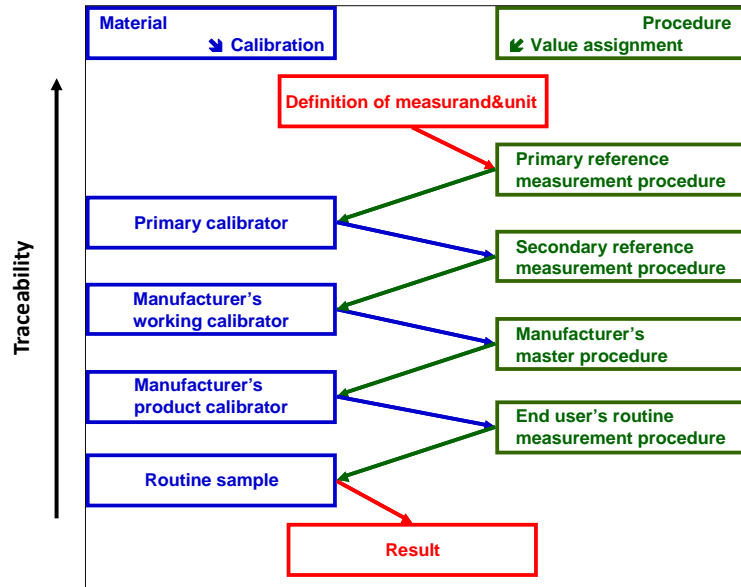
**ERROR BUDGET and RISK MANAGEMENT
for LABORATORY MEDICINE**



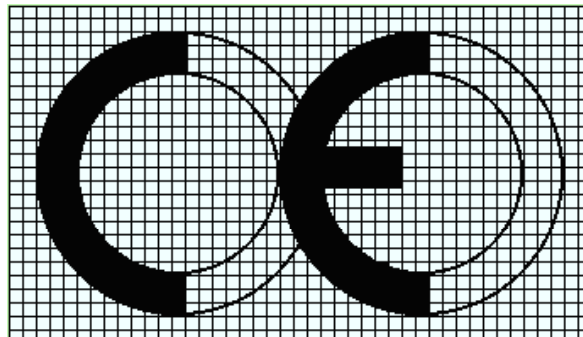
**Quality
2012**

REGISTRATION FORM "THE 2012 ANTWERP MEETING", 29th and 30th March 2012

Quality: In Vitro Diagnostics



Quality Mark: IVD Devices: Europe



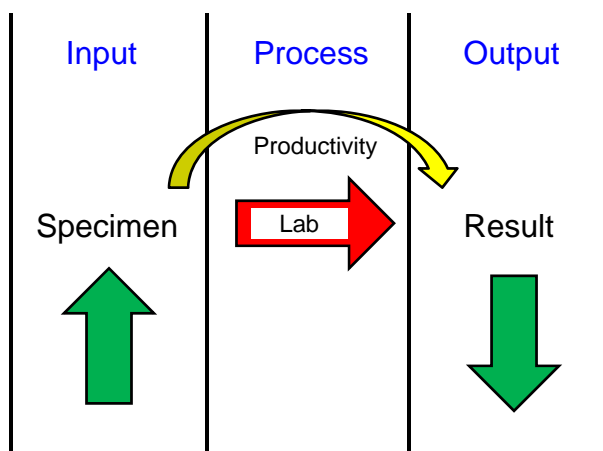
Quality – Under Control?

Laboratory medicine specialists are good and getting better at assuring quality



However, the focus has been looking closely at what we do inside the laboratory

Our Role: As Others See It?



Adding Value to Laboratory Medicine

We are good and getting better at assuring quality
The focus has been looking closely at what we do

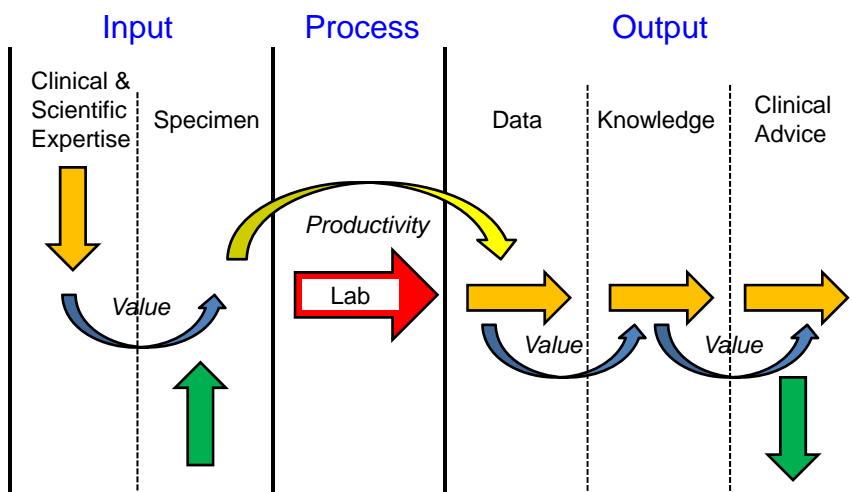


But we also need to look outwards – to adding value

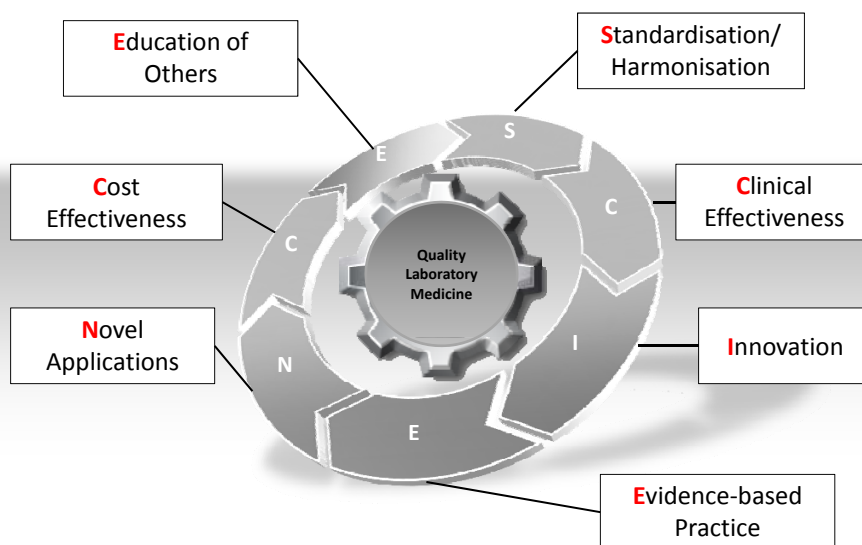
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How Can We Add Value?



Adding Value Cycle to Quality Laboratory Medicine Services Through the Application of 'SCIENCE'



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Why Standardise or Harmonise?

- Patient safety
 - Differences in practice can put patients at risk
- Clinical guidelines
 - Differences reduce the value of practice guidelines
- Public / patient confusion
 - Differences cause patients to lose confidence in labs
- Clinical governance
 - Differences leave labs vulnerable to challenge
- Electronic patient record
 - Differences prevent commutability of data

Method Standardisation & Harmonisation

Standardisation

Defined:

- Reference materials
- Reference procedure

Full traceability

Role for IFCC/JCTLM

Mainly international

Harmonisation

Agreed:

- Reference materials
- Procedures

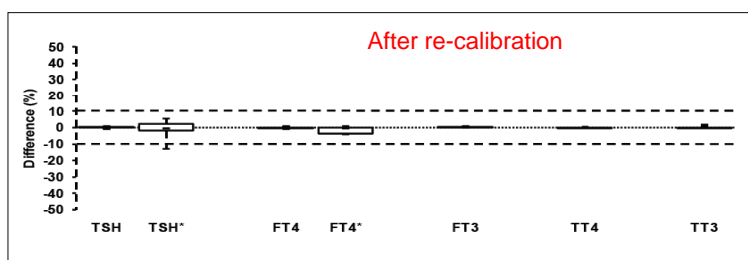
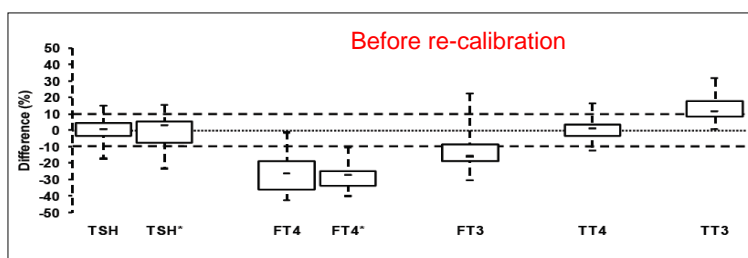
Limited traceability

Many candidate analytes

National or international

Diagnostic manufacturers as stakeholders

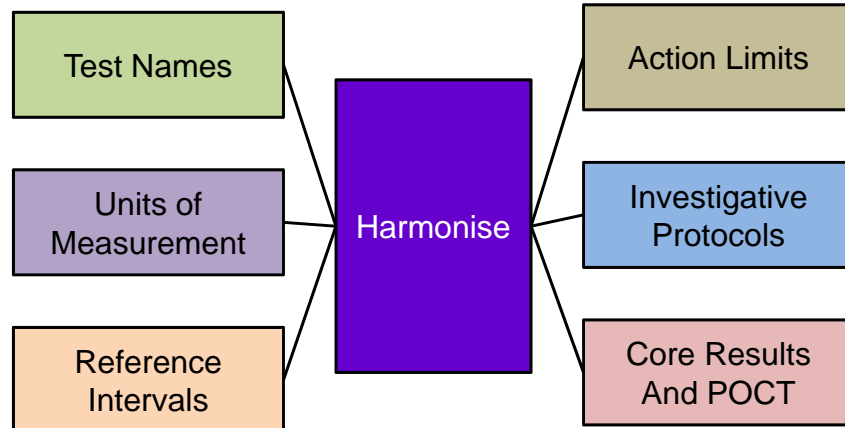
Example of Thyroid Function Tests



Adapted from *Clin Chem* 2010; [56](#): 902-29

We Can Harmonise More Than Methods

These can be done at local or national level



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Do Doctors Understand Laboratory Medicine?

Editorial

Is the medical graduate curriculum 'fit for purpose'?

Danielle B Freedman
Ann Clin Biochem 2008; 45: 1-2

Survey reveals that junior doctors lack knowledge and confidence when requesting and/or reporting basic clinical chemistry investigations

"If we are unable to improve the undergraduate teaching or even training of junior doctors, the role of clinical validation and interpretive comments will become still more critical in protecting patients"

Are Interpretative Comments Useful?

Short Report

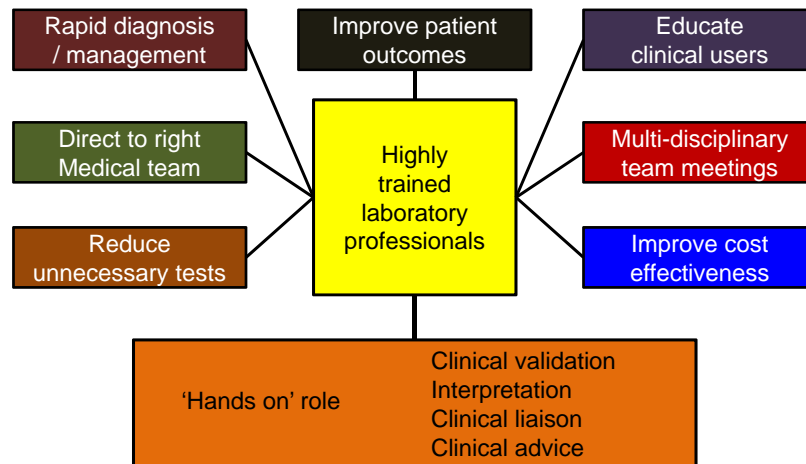
Are biochemistry interpretative comments helpful?
Results of a general practitioner and nurse practitioner survey

Ian M Barlow
Ann Clin Biochem 2008; 45: 88-90

"Survey reveals overwhelming support for commenting on reports and 77% would like to see comments on a wider range of tests"

Different user groups will derive different value from interpretative comments

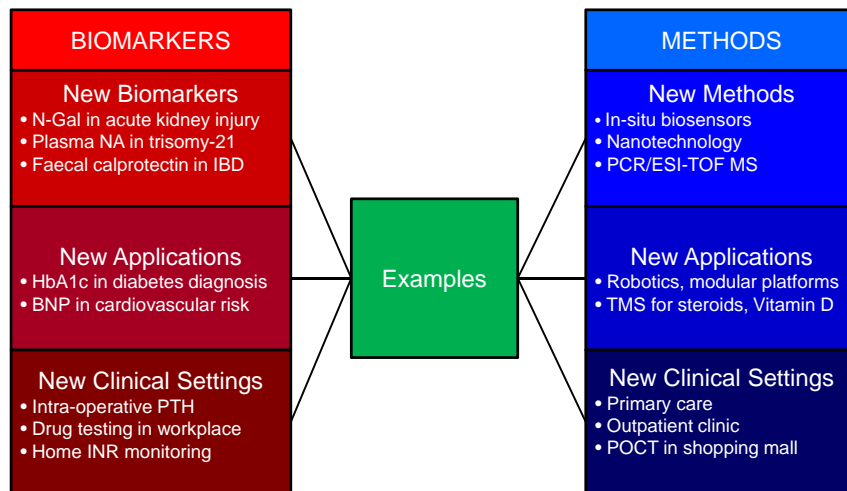
Laboratory: Improving Clinical Effectiveness



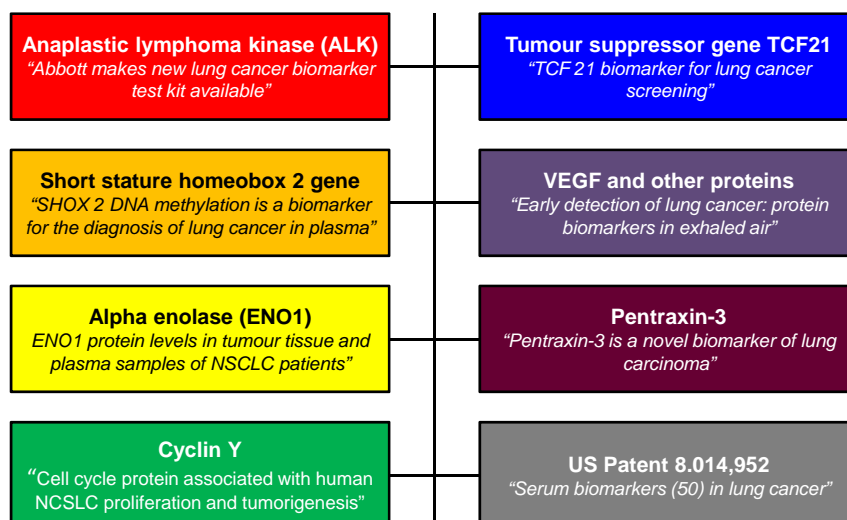
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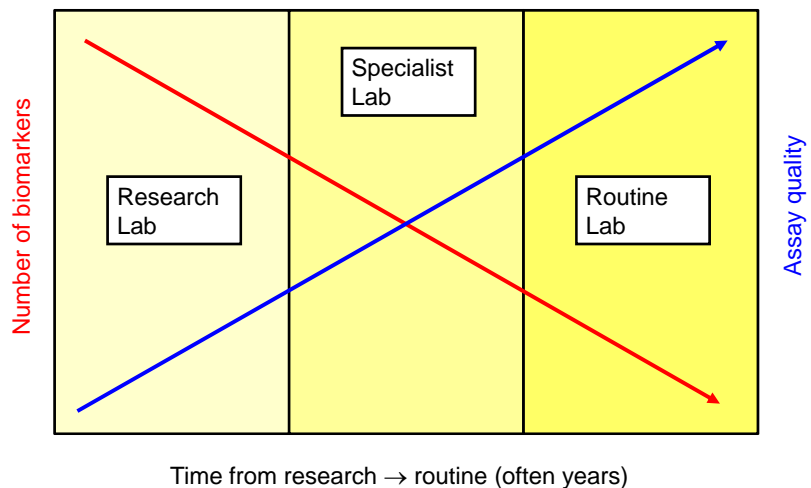
Innovation in Laboratory Medicine



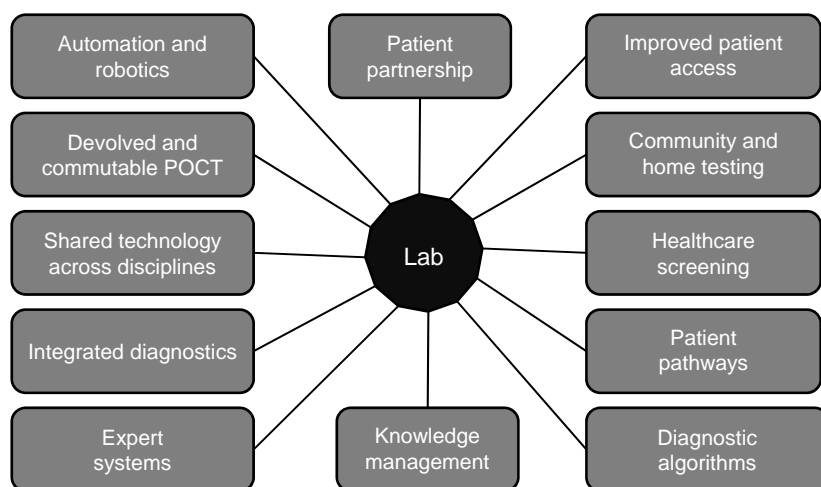
New Biomarkers in Lung Cancer: 2011



Life Cycle of New Biomarkers



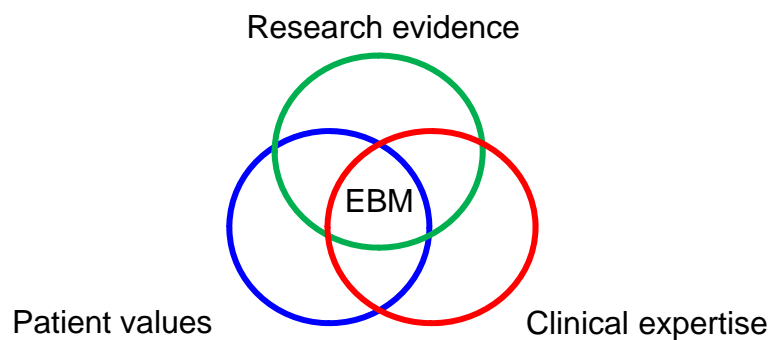
Innovation in Service Delivery



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Evidence Based Medicine (EBM)

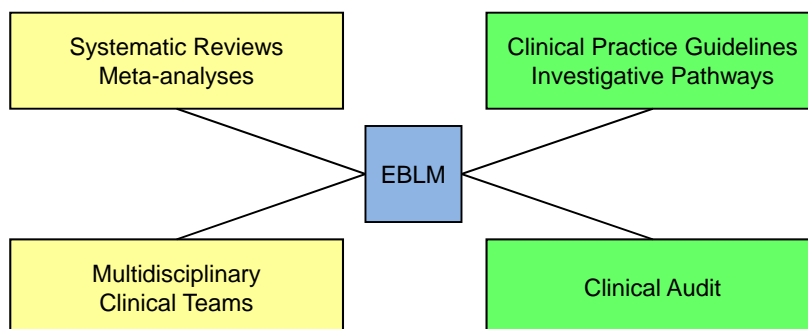


Sackett et al 'How to Practice and Teach EBM'

Evidence Based Laboratory Medicine

Obtaining and understanding evidence

Using the evidence to change practice



Sources of Clinical Practice Guidelines

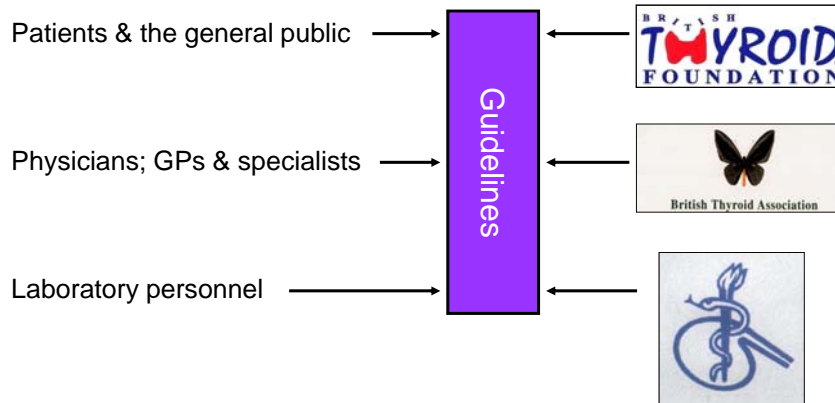


Many specialist societies:
e.g. The Endocrine Society

There is an abundance of best practice guidelines:
Implementation is a real issue
Laboratory medicine specialists can give a lead

Optimal Use of Thyroid Function Tests

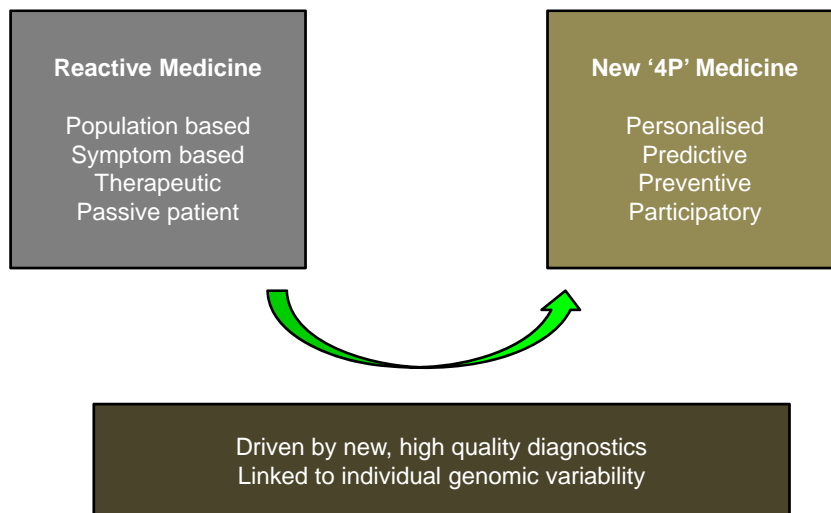
Available from www.acb.org.uk



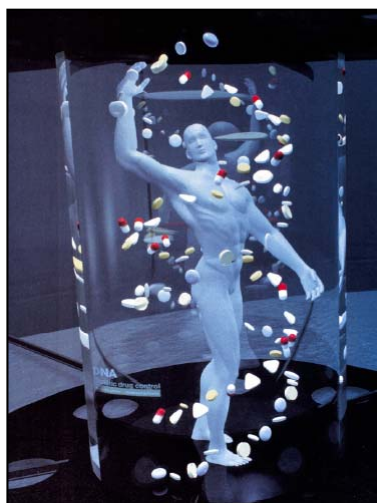
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New Directions in Medicine



Personalised Medicine



The application of genomic and molecular data to better target the delivery of health care, facilitate the discovery and clinical testing of new products, and help determine a person's pre-disposition to a particular disease or condition

Role of Pharmacogenomics

Currently >100 FDA approved drugs that have pharmacogenomic information in their labels

Examples with Established Laboratory Testing

<u>Drug</u>	<u>Biomarker</u>	<u>Area of Medicine</u>
Mercaptopurine	TPMT	Oncology
Clopidogrel	CYP2C19	Cardiovascular
Imipramine	CYP2D6	Psychiatry
Warfarin	CYP2C9	Haematology

Companion Diagnostics

A growing number of diagnostic tests have been designed to elucidate the efficacy and/or safety of a specific drug or class of drugs for a targeted patient group or sub-groups



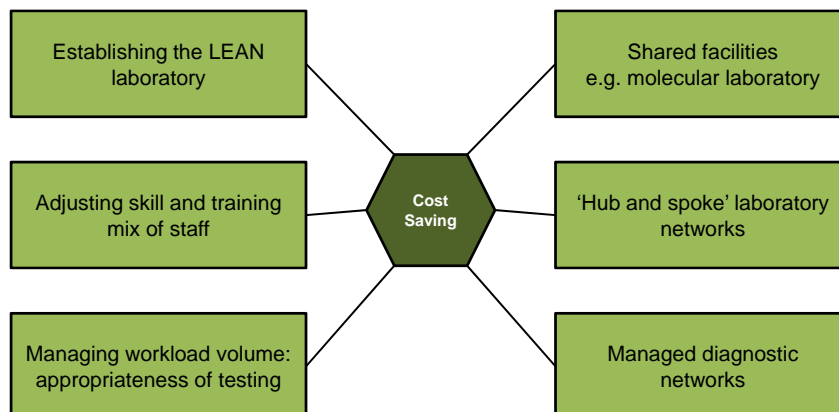
Examples

<u>Genetic Markers</u>		
Her2/Neu	Breast Cancer	Herceptin
BCR-ABL	Chronic Myeloid Leukaemia	Glivec
<u>Genetic Mutations</u>		
EGFR	Lung Cancer	Iressa
KRAS	Colon Cancer	Erbitux

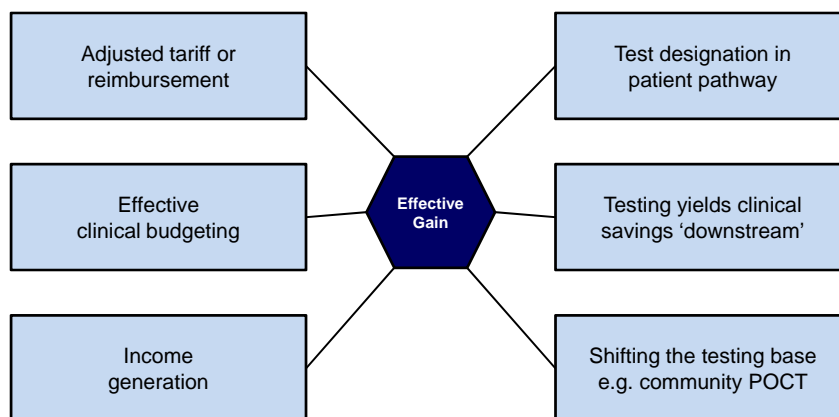
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Direct Laboratory Cost Reduction



Indirect Cost Efficiency Gain



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Instant Recognition



Mona Lisa
Leonardo da Vinci
1503–1505

Profession without a Face



Laboratory Medicine
Specialist:
Unknown and invisible
profession in public

Improving Our Visibility and Image

Providing Information on Laboratory Medicine

'Lab Tests on Line': www.labtestsonline.org

'Labs Are Vital': www.labsarevital.com

Society and laboratory websites

Laboratory handbooks, leaflets, publications etc

Contact with Patients

Attend clinics, ward rounds
Patient organisations
Disease specific groups
Patient representation

Laboratory Medicine

Contact with the Public

Laboratory open days
Exhibits in public places
Public lectures
Media (press, radio, TV)

Lab Tests Online®

Introduced by American Association for Clinical Chemistry in 2001



30 million visits in 2010

Live or in development in 2011:
17 countries
14 languages

<http://labtestsonline.org>



LABS ARE VITAL™

Labs Are Vital™

Launched in 2006 during AACC

Adopted by other countries
12 Countries
4 Continents

Adopted by IFCC since 2008

Focus varies by country

Partnership organization

Global website with >15,000 supporters in four languages

www.labsarevital.com

ABBOTT CELEBRATES THE VITAL CONTRIBUTIONS OF LABORATORY PROFESSIONALS EVERYWHERE



LABS ARE VITAL™

The original mission of Labs Are Vital™ was to partner with clinical laboratory professionals in a collaborative effort to positively impact the profession and ultimately patient care.

Elevate the profile of the lab and its professionals within health care and to the general public

Extend the lab's influence and impact as a partner in disease diagnosis and monitoring, committed to ensuring patient care and safety

Address key issues facing the profession

In 2011 the Mission is being expanded to be more outward looking and programmes are being developed to highlight the wider contribution of laboratory medicine in healthcare through multi-stakeholder involvement.

You could be a Labs Are Vital™ supporter

www.labsarevital.com

ABBOTT CELEBRATES THE VITAL CONTRIBUTIONS OF LABORATORY PROFESSIONALS EVERYWHERE

UK National Pathology Week



November 3-9 2008 – no special theme
November 2-8 2009 – theme of 'pathology and the heart'
November 1-7 2010 – theme of 'building blocks of life'

500 public events taking place across UK

- Laboratory open days
- Public lectures
- Radio interviews
- Displays and demonstrations in public places
- Media campaign – TV, radio, newspapers

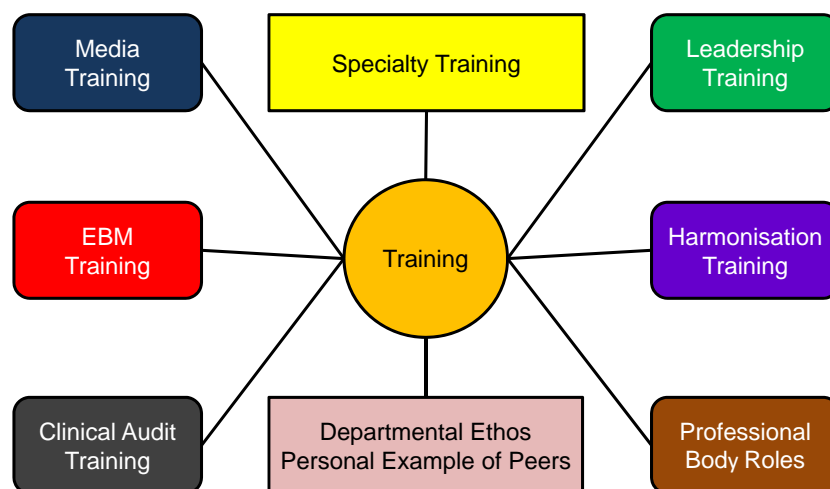
NPW: Influencing Government



NPW: Influencing the Next Generation



Adding Value: Training

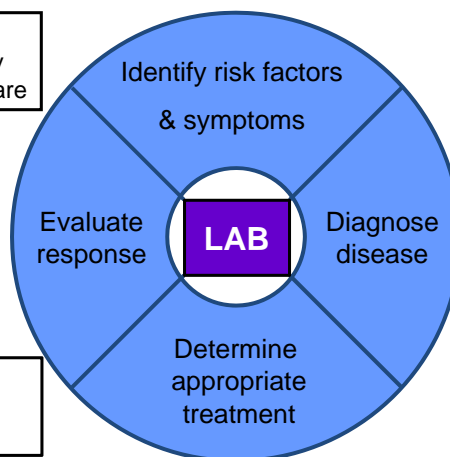


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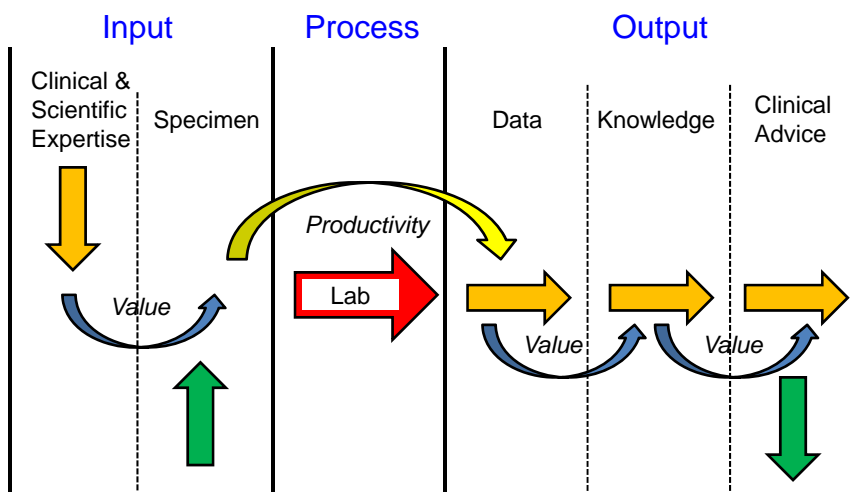
Central Role of Laboratory Medicine

Laboratory Medicine is part of the multi-disciplinary team at the centre of healthcare

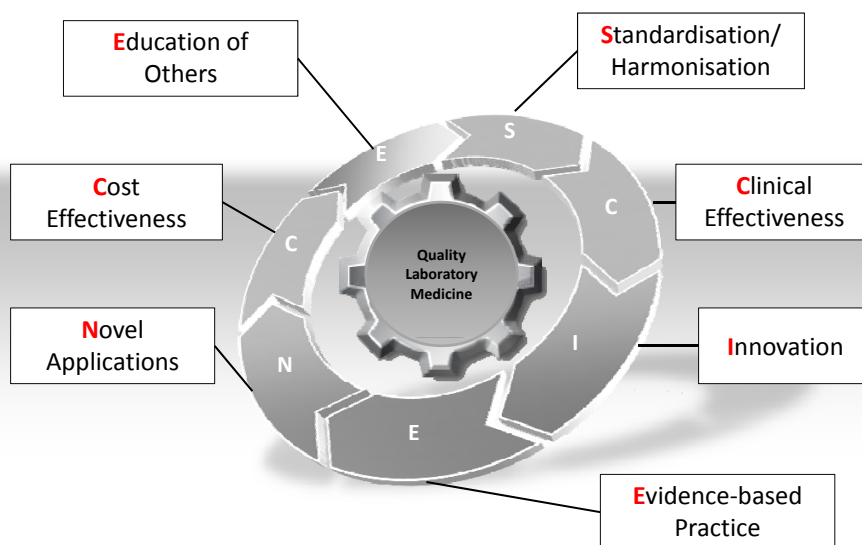


With this influence comes responsibility!

How Can We Add Value?



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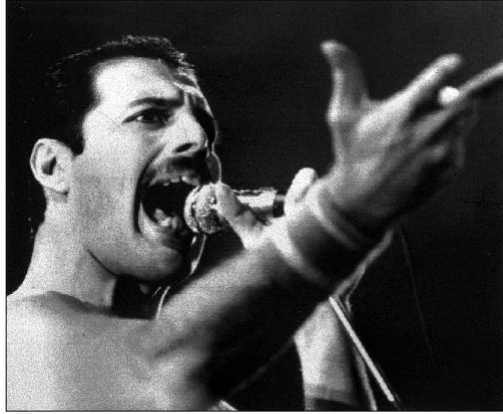
Predicting the Future is Difficult!



Who Will Champion Laboratory Medicine?

- Laboratory medicine professionals
 - Professional organisations
 - Individual practitioners
 - The In-Vitro Diagnostics Industry
 - Trade organisations
 - Individual companies
 - Individual practitioners
 - No-one else will champion laboratory medicine
 - Hopefully others will listen and respond!
- Equal Partners

“We Are The Champions!”



No-one else will champion the future of laboratory medicine in healthcare!