IFCC General Conference 2018

Laboratory medicine: Preparing for the 2020’s

10th – 11th November 2018
Hotel Novotel Budapest City, Hungary

Advancing excellence in laboratory medicine for better healthcare worldwide
Committee on Clinical Laboratory Management

The Role of Management Innovation and Leadership for the Clinical Laboratory

Sedef Yenice
Edward Randell
• Survey on Laboratory Leadership Learning Needs
• Overview of Laboratory Leadership Training Program
• A Sneak Peak into Module 1
• Innovation Leadership and the Significance for the Clinical Laboratory Management
• Q & A
Survey on Laboratory Leadership Learning Needs
C-CLM Leadership Survey

266 RESPONDENTS FROM 56 COUNTRIES

43% from accredited labs
26% from labs pursuing accreditation
The most acknowledged professional designations/activities included:

- 38.1% were Clinical Laboratory Specialist;
- 19.4% were Professor/Instructor;
- 15.6% indicated laboratory manager, and
- 14.2% identified as physician laboratory director and
- 13.8% as non-physician laboratory director.
The importance of good leadership in an organization is evidenced by the fact that leadership qualities are learned through a training process. Leadership theory deals with the scope of services offered by leadership professionals, such as training and consultation. The clinical laboratory environment, with its scope of responsibilities, is relatively simple compared to hospitals and laboratories applying cutting-edge diagnostic services.

Leadership in the medical laboratory environment is also important for the management and maintenance of medical laboratory services. This will take the form of a Laboratory Leasing Programme, which will cover major projects in the development of effective leadership techniques. It is also a goal of C-CLM to have the programme credited in order to provide certificates to participants in the programme. In addition, the topics covered in the current leadership training are designed to cover major areas of skills training that C-CLM also developed and circulated as surveys. The survey results show that a survey can be helpful in understanding the needs of the target audience.

The twenty-three questions survey addressed the most significant level of topics covered in the survey, including: Self Management and Leadership Style; Leading Change; and Leading the Laboratory. Participants from at least 56 different countries participated in the survey with national societies in the United States, Jordan, Turkey, Chile, India, and Slovenia, up almost half of all 266 participants (Figure 1) participating.

About 43% of participants came from accredited laboratories, pursuing accreditation of disagreement with the statement. Self-identified knowledge gaps are a potential indicator of potential impact on learning in an area and a recognition of the potential need for further education.

When asked to identify other topics where the felt to be significant knowledge gaps, 56 respondents provided additional input. The top four included:

- Work relationships and effective communication (27.9%);
- Team management and motivation (9.9%);
- Financial management and budgeting (30.6);
- Conflict management and conflict handling (9.4%).

Other topics identified by four or more respondents (35.5%) included:

- Developing and monitoring quality indicators:
- Quality management systems (4.7%);
- Self-management and emotional intelligence (4.7%);
- Building a business case;
- Marketing and growing the laboratory;
- Safety and Risk Management.

Table 1: Summary of survey response with survey statements

**Leading change**

- Can confidently describe the common biases that affect the ability to make sound decisions: 38.5
- Can confidently describe the parts of a formal project management plan: 33.2
- Can confidently identify common barriers to effective change management: 25.8
- Can confidently describe the principles for effective change management: 44.3
- Can confidently describe why strategic planning in Health Care is important: 28.7
- Can confidently describe the strategic planning process: 40.2
- Can confidently develop a program evaluation plan: 38.9
- Can confidently describe the types and purposes of evaluation: 37.3

**Leading and managing the laboratory**

- Can confidently describe the differences between leading a laboratory versus managing a laboratory: 28.3
- Can confidently identify and describe my leadership style: 21.0
- Can confidently describe how to build an effective laboratory team in spite of the challenges presented by generational, cultural, and lifestyle differences: 25.8
- Can confidently describe how to effectively manage human resources including how to attract, hire, develop, and keep talented workers in my laboratory: 35.6
- Can describe the differences between organizational vision, mission, goals, and objectives and describe how they apply to me (as a laboratory leader) and to my laboratory: 31.8
- Can list the principles of good communication, and describe how to communicate accurately to achieve the desired outcomes for my laboratory: 27.0
- Can confidently describe the principles and tools of risk assessment and risk management for reducing patient harm: 30.9
- Can confidently describe the principles and practices of ethical leadership: 33.5

Acknowledgment: Thanks to the full members Edward Randell and Safeg Yenics, Chair of the C-CLM who wrote and worked together in the preparation of this short communication.
Overview of Laboratory Leadership Training Program
DESCRIPTION

The program curriculum is designed to assist the lab professionals in developing their own strategies for leading change within a rapidly evolving lab practice and service delivery system.

Teaching/learning formats include case studies, interactive educational workshops and webinars.

ACCREDITATION and CERTIFICATION

The Lab Leadership Program will be accredited by The Canadian Academy of Clinical Biochemistry (CACB) in compliance with the CACB accreditation requirements. Certificates will be issued to those successfully completing the program.
C-CLM Clinical Laboratory Leadership Training Certificate Program

Self-discovery and Self Management
- Leadership Attitudes and Styles
- Conflict Resolution
- Prioritizing and Managing Personal Workloads

Leading Change
- Project Management Fundamentals
- Managing Change
- Strategic Planning
- Program Evaluation Methods

Laboratory Leadership and Management: Inside and out
- The Leader versus the Manager
- Recruiting and developing talented Laboratory Staff
- The ethical Laboratory Professional
- The Laboratory Leader as Communicator
- Championing Patient Safety
C-CLM Clinical Laboratory Leadership Training Certificate Program

December 2018

Module 1
• Self-discovery and self management

June 2019

Module 2
• Leading Change

November 2019

Module 3
• Lab Leadership and Management: inside and out

December 2018

Module 1
• Self-discovery and self management

June 2019

Module 2
• Leading Change

November 2019

Module 3
• Lab Leadership and Management: inside and out
A Sneak Peek into Module 1
MODULE 1
Self-Discovery and Self-Management

Leadership Attitudes and Styles
Conflict Resolution
Time Management and Balancing Workplace Workload

Leadership style and impact on relationships in the workplace
Defining Conflict
Personal Responses to Conflict
Conflict Resolution Process
Barriers to Effective time management
Strategies to Effective Time Management
Effective management of meetings

C-CLM Clinical Laboratory Leadership Training Certificate Program
Web-based Text

Module 1: Leadership Attributes and Styles

Learning Objectives
The following sections will provide you with information to:

- Describe the attributes of good leadership
- Describe emotional intelligence and its impact on leadership performance.
- Describe different leadership styles and the pros and cons of each style.
- Develop and improve your leadership capabilities

Introduction
This chapter provides an overview of what makes a leader. This is coupled with practical information on how to improve leadership skills. This session will cover some of the different leadership styles, and leadership attributes important for team building. As a focus of this session is self-management towards improving personal value to the organization, improving emotional intelligence, self-reflection and self-awareness will be emphasized.

Defining Leadership
“I am more afraid of an army of 100 sheep led by a lion than an army of 100 lions led by a sheep”

Talleyrand

Leadership, simply defined, indicates the ability to influence others toward fulfilling visions and goals. Leaders challenge the status quo, create a vision for the future, and inspire others towards achieving the vision. Leadership is distinguished from management in that leaders set paths for
“Managing up”

“...active and conscious working toward benefiting both yourself and your superior.”

Drives innovation and change by mobilizing your superior.

Work satisfaction
Respect & Confidence
Influence & Advancement
The “Big Five” is a framework illustrating major predictors of Leadership.
Polling Question

- http://etc.ch/PaPM
- https://directpoll.com/r?XDbzPBdJ2bAX0ZEoyWNVjP9rPU9mLnIr3qIg6XFf7
“A leader is someone who can get things done through other people…”

Warren Buffet

Why People Follow Leaders:

- Trust
  - Honesty
  - Integrity
  - Respect

- Compassion
  - Caring
  - Friendship
  - Happiness
  - Love

- Stability
  - Security
  - Strength
  - Support
  - Peace

- Hope
  - Direction
  - Faith
  - Guidance

Based on a Gallop survey done over 2005 to 2008 of over 10,000 followers

Emotional Intelligence

Self Awareness
- Emotions, Moods, Drives
- Effects on others

Social Awareness
- Other’s thoughts & feelings
- Showing empathy

Self Management
- Control disruptive impulses & moods
- Think before Acting

Relationship Management
- Building bridges, bonds, & teams
- Conflict management
Transformational leadership style is one of the most effective and is distinguished in that it elevates followers through four different dimensions:

1. **Idealized Influence**
   - A consistent & reliable role model

2. **Inspirational Motivation**
   - Raising expectations & setting high standards

3. **Individualized Consideration**
   - Treating each as an individual

4. **Intellectual Stimulation**
   - Challenges others to think for themselves
Activity…Small steps to big change

Think about past leadership experiences…
- Write down your strengths & weaknesses

Pick a transformational practice you need to improve…
- Idealized Influence
- Inspirational Motivation
- Intellectual Stimulation
- Individualized Consideration

Set a challenging & measurable goal and begin working on it…
- Determine how you will measure your progress.

Think about who & what you will need to meet goal, and barriers and how to overcome.
- Monitor your progress over a few months
The **MOST** effective way to improve your leadership effectiveness involves working on...

1) **Becoming better informed on current events**
2) **Changing your personality**
3) **Improving your Intelligence Quotent (IQ)**
4) **Improving your social interactions (EQ)**
5) **Improving your motivation**
C-CLM Clinical Laboratory Leadership Training Certificate Program

- Web-based Text
- Recorded Presentations
- Training Exercises
- MCQ Based Examinations

Certificate of Accomplishment (Accredited by Canadian Academy of Clinical Biochemistry)

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Innovation & Leadership

Innovation distinguishes between a leader and a follower.

- Steve Jobs
What Leaders Need Now is Innovation Leadership

Innovative Leadership — the use of innovative thinking and the leadership that supports it—is the key to finding

• what’s new,
• what’s better, and
• what’s next.

Image retrieved from http://www.hroot.com/
The Experts: How Should Leaders Spur Innovation?

March 12, 2013 6:38 p.m. ET

What’s the most important thing leaders can do to spark innovation at their institutions? The Wall Street Journal put this question to The Experts, an exclusive group of industry and thought leaders who engage in in-depth online discussions of topics from the print Report. This question relates to a recent article on the drivers of innovation.
Why Innovation Matters

- As problems and circumstances become more complex, they don’t fit previous patterns.
- We don’t recognize the situation.
- We can’t rapidly or automatically know what to do.
- What worked before doesn’t work today.

This requires skills beyond everyday analysis.

It requires innovation leadership.

We must have a grasp of the whole of the situation.
Innovation & Leadership

What innovation leaders say they do right

% of respondents by performance quartile

- Aspire: 55%, 38%, 31%, 20%
- Choose: 44%, 31%, 16%, 10%
- Discover: 44%, 16%, 10%, 6%
- Evolve: 35%, 27%, 12%, 2%
- Accelerate: 39%, 35%, 15%, 9%
- Scale: 29%, 27%, 15%, 7%
- Extend: 42%, 29%, 15%, 12%
- Mobilize: 23%, 23%, 12%, 5%

The survey tested for 27 innovation practices spread across eight essentials

1N = 223. Performance defined as a weighted index of measures for organic growth (% of growth from new products or services developed in-house) and innovation performance (% of sales from new products and self-assessment of innovation performance). Respondents who answered “yes to some degree,” “no,” or “don’t know/not applicable” are not shown.

Source: McKinsey survey of 2,500 global executives, Nov 2012
<table>
<thead>
<tr>
<th>Components of Innovation Leadership</th>
<th>Do you really innovate?</th>
<th>Underlying elements</th>
</tr>
</thead>
</table>
| **ASPIRE**                         | Do you regard innovation-led growth as critical, and do you have cascaded targets that reflect this? | • Innovation vision and model  
• Required growth contribution from innovation  
• Cascaded targets and accountabilities |
| **CHOOSE**                         | Do you invest in a coherent, time- and risk-balanced portfolio of initiatives with sufficient resources to win? | • Clarity of innovation themes  
• Portfolio balancing time and risk  
• Resources sufficient for initiatives to win  
• Portfolio governance |
| **DISCOVER**                       | Do you have actionable and differentiated business, market, and technology insights that translate into winning value propositions? | • Customer orientation  
• Multiple-lens insight generation  
• Differentiated value proposition |
| **EVOLVE**                         | Do you create new business models that provide defensible, robust, and scalable profit sources? | • Exploration of new business models  
• Changing value-chain economics  
• Diversifying profit streams  
• Delivery – model changes and new customer groups |
## Components of Innovation Leadership

<table>
<thead>
<tr>
<th>Do you really innovate?</th>
<th>Underlying elements</th>
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| **ACCELERATE** Do you regard innovation-led growth as critical, and do you have cascaded targets that reflect this? | • Innovation vision and model  
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| **SCALE** Do you invest in a coherent, time- and risk-balanced portfolio of initiatives with sufficient resources to win? | • Clarity of innovation themes  
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• Portfolio governance |
| **EXTEND** Do you have actionable and differentiated business, market, and technology insights that translate into winning value propositions? | • Customer orientation  
• Multiple-lens insight generation  
• Differentiated value proposition |
| **MOBILIZE** Do you create new business models that provide defensible, robust, and scalable profit sources? | • Exploration of new business models  
• Changing value-chain economics  
• Diversifying profit streams  
• Delivery – model changes and new customer groups |
Roles and Responsibilities for INNOVATION vary by Leader Level

Our Role in Innovation Depends on Where We Sit

LEADING SELF
- Create
- Know how to generate creative solutions

LEADING OTHERS
- Obtain resources from outside the unit

LEADING MANAGERS
- Support and protect the team, build a case for grassroots innovation

LEADING FUNCTIONS
- Clear direction for the scope of innovation

LEADING THE ORGANIZATION
- Foster a culture of innovation and model behaviors

There isn’t a one-size-fits-all solution.


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Keynote Articles


Advancing Laboratory Medicine through Innovation: A Tale of Six Inventors

Moderator: Nader Rifai

Inventors: Eleftherios P. Diamandis, Y.M. Dennis Lo, Larry J. Krika, Peter Wilding, Jack H. Ladenson, and Carl T. Wittwer

"Discovery consists of seeing what everybody has seen and thinking what nobody has thought." — Albert von Haller (1708-1777)

In a recent issue of Science Translational Medicine (1), Yock and colleagues of Stanford University discuss the need and challenges of developing a discipline of medical technology innovation. Innovation is defined as "the introduction of new products or services, or new methods of production or service delivery, which are new to the firm... or which substantially improve existing products or services" (2). In this provocative article, the authors discuss two main streams of educational and practice that together form the basis for industry and medical technology innovation: design thinking and entrepreneurship education (Fig. 1). Design thinking focuses on identifying the opportunity need and developing the ideas to solve the problem, building the prototype, and testing the product, while entrepreneurship education provides an introduction to the skills and strategies required to turn an idea into a successful business. I will summarize some of my own experiences as a scientist and innovator and comment on competencies that I acquired.

I believe that the key to my apparent success were my undergraduate degree in chemistry (1976) and my PhD in analytical chemistry (1979). These degrees provided me with analytical biochemical expertise in the area of quantitative measurement. These skills were complemented nicely with my postdoctoral training in clinical chemistry (1982-1984) and my medical degree (1986).

My personal journey in laboratory medicine innovation: From industry to academia.

Eleftherios P. Diamandis

Disruptive Innovation in Laboratory Medicine

Over the last few decades, laboratory medicine has witnessed a remarkable wave of innovations that transformed the field from a peripheral to a central player in healthcare delivery. These advances enabled the introduction and performance of new tests on a large scale, some in a decentralized setting, in an accurate and precise manner, thus leading to better diagnosis, more accurate prediction of disease prognosis, and improved patient management. This evolution was the result of both traditional and disruptive innovations, the latter being a new concept, technology, product, or process that is at first inferior to an existing one but with time improves, becomes superior to it, and eventually replaces it. Some examples of disruptive innovation in laboratory medicine include continuous flow analysis, dry reagents on dipsticks, pregnancy home testing, PCR, point-of-care testing, and use of MALDI-TOF mass spectrometry for pathogen identification. Although sustaining innovation mostly drives progress, paradigm shifts usually occur only with disruptive innovation.

Eugene Chan We have developed the HEALTH sensor, which is a portable device designed to take a single drop of blood and give a readout for many different laboratory tests. This is a notable departure from existing delivery of healthcare, where there are central laboratories required to provide this information. The HEALTH sensor is designed to democratise biomedical information by allowing individuals, anywhere, to get access to their results.

Eric Topol Smartphones as the hub of medicine going forward: capable of performing routine laboratorystudies (with suitable hardware additions), real-time, real-world biosensor data of most physiologic metrics, capability of doing a substantial part of the physical examination, and ultimately, assembly of a virtual medical assistant to process these multilayered medical data for each individual. All of this data collection and analysis would be supported by cloud computing and validated algorithms.

Eric Topol

Y.M. Dennis Lo I work in the area of noninvasive prenatal testing (NIPT). My group first reported in 1997 the presence of cell-free fetal DNA in maternal plasma. We then spent the next 18 years translating...
Innovation Leadership for the Clinical Laboratory Management
What is Innovation?

“The design, invention, development and/or implementation of new or altered products, services, processes, systems, organizational structures, or business models for the purpose of creating new value for customers and financial returns for a firm”

Advisory Committee on Measuring Innovation in the 21st Century Economy.

Innovation in laboratory medicine takes 3 major forms.

Two Innovation Impacts...

Non-disruptive
- Incremental
- Evolutionary
- Sustaining

Disruptive
- Radical
- Revolutionary
- Transformational
Drivers of Innovation

- ↓ Costs
- ↑ Access
- ↓ Wastes
- ↑ Efficiency
- ↓ Harm
- ↑ Quality

Innovation in Laboratory Medicine
Polling Question

• http://etc.ch/PaPM

• https://directpoll.com/r?XDbzPBDj3cBY1aFpzXOWkgQA$sQVAnMoJs4rJh7YGg8
Polling Question

• http://etc.ch/PaPM

• https://directpoll.com/r?XDbzPBdJ4dCZ2bGq0YPXlhRBtRWBoNpKt5sKi8ZHHh9
Culture: The Major Barrier to Innovation

- **Culture** is the collection of beliefs and behaviors of a group of people.
  - It affects the operation and strategic vision of an organization
  - Shaped by leadership
- Innovation is difficult in cultures that are:
  - Hierarchical
  - Formal
  - Risk Averse

No innovation will survive that the organizational culture cannot tolerate.
Drivers & Challenges to Innovation

Resource Sufficient
- Changing Patient Demographic
- Changing Disease Spectrum
- Managing Costs
- Quality Improvement

Resource Challenged
- Service Gaps
- Adequacy of Care
- Rising Incidence of Chronic Disease
- Constrained Budgets
- Constrained Resources
- Constrained Infrastructure

- Risk aversion
- Fear of Failure
- Financial Implications
- Acceptance by intended physicians & patients
Implementation of Innovative Change

Culture
- Provide Resources
- Remove Barriers
- Open to New Ideas
- Build on Differences

Teamwork
- Internal & External
- The “right people”
- Time commitment
- All levels

Piloting
- Small and Focused
- Designed for success
- “Living Lab”
- “Err on the side of execution – not planning”
Innovation Requires a Framework

Best Practices

Innovative Leadership & Management
Prioritize & Support
Skills Development
Manage Risks
Measure & Monitor

Continuous Improvement

Purpose

Quality

Costs

Target

Efficiency

Safety

Approach

Culture

Just & Open

Patient Focused

Innovative Leadership & Management

Prioritize & Support

Skills Development

Manage Risks

Measure & Monitor

Patient

Physician

Order

Pre-Analytical

Analytical

Post-Analytical

Report

Action

Outcome

Best Practices

Continuous Improvement

Purpose

Innovative Leadership & Management

Prioritize & Support

Skills Development

Manage Risks

Measure & Monitor

Patient

Physician

Order

Pre-Analytical

Analytical

Post-Analytical

Report

Action

Outcome

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A "HYBRID MODEL" for Clinical Laboratory Leadership

We need a Laboratory Leadership Model one that balances technology, strategy and innovation.
Leaders and The Clinical Laboratory Innovation Process

- **Build Teams:** Stakeholders, Frontline staff, Vendors, Experts
- **Design & Create:** Use Metrics, Quality, Cost, Efficiency, Safety
- **Measure & Monitor:** Start Small, “Living Lab,” “Learn early and fail cheap”
- **Pilot & Study:** Standardize, Innovate, Optimize, Disseminate, Customize, CQI
- **Create Culture:** Build Capacity, Build Momentum, Create Culture
C-CLM Clinical Laboratory Leadership Training Certificate Program

Self Discovery & Self Management

Leading Change

Laboratory Leadership & Management: Inside and Out

Inspiring & Preparing Innovative Leaders for the Clinical Laboratory