Organizational Knowledge: From Onboarding to Succession Planning

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Robert Rej, PhD
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Knowledge Management: Hard Won Lessons Or What NOT to do

Patricia L. Eng, P.E.
Certified ISO KM Auditor, Author, Speaker
In the Beginning at NRC
Historically stable workforce

Increased retirements
Organizational Challenges

Changing workforce dynamics

Increased public scrutiny
KM Challenges

Skeptical Management

No money

Overworked Staff
What is the VALUE to the Agency?

• Collaborate and communicate across organizational boundaries
• Capture knowledge before it is lost to create organizational memory
• Facilitate decision making
• Improve productivity – decrease time to competency
What is the VALUE to Me?

• Locate knowledge and experts when needed
• Capture knowledge through interactions and discussions and make it widely available
• Streamline training
• Enhance professional development
The Path Forward
The KM Business Case

Capture SME knowledge

Connect generations
Business Case cont.

Improve and streamline training

Maintain technical excellence
Tactics

Gather complaints

Identify high risk areas & SMEs
Tactics cont.

Inclusive problem solving

Enhance existing tools; use new ones
First Initiatives

Created KM Web Page

KM Dashboard:
Who is doing what?
Tools
# Knowledge Management At The NRC

<table>
<thead>
<tr>
<th>Knowledge Management (KM) Home</th>
<th>DWMEP (FSME)</th>
</tr>
</thead>
<tbody>
<tr>
<td>KM Resources</td>
<td>NMS KM Site</td>
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<tr>
<td>KM Documents</td>
<td>NRO KM Site</td>
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<tr>
<td>KM Calendar</td>
<td>NRC's Technical Library</td>
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<tr>
<td>Knowledge Center Resources</td>
<td>NRR @InspectorCommunity</td>
</tr>
<tr>
<td>Enter the Knowledge Center</td>
<td>NRR @OperatingExperienceCommunity</td>
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</table>

- Dashboard
- KM Office Contacts
- Internal Sites
- External Sites
- Supervisor's Toolbox
- Strategic Workforce Planning
- KM Glossary
- NRC Glossary of Nuclear Terms
- The NRC Rulemaker
- KM TAC- ZG0028
- Preventing Brain Drain
- Talking the Talk
- Eleven Deadliest Sins of Knowledge Management

Region II KM Site
- Region III KM Site
- Region IV KM Site
- Region V KM Site
- RES KM Portal
- RES Seminars

The right information includes, but is not limited to, training, interviews, and portals.

Region II KM Site
- Region III KM Site
- Region IV KM Site
- Region V KM Site
- RES KM Portal
- RES Seminars

NRC Knowledge Management
- Collaborate, Capture, and Share Knowledge to Build Organizational Memory

!!! IMPORTANT !!!
- Communication and innovative strategies. In this capital, along development, HR is management.
# KM Dashboard

![KM Dashboard Image](image-url)

**Legend**

- Green: Active
- Orange: Inactive
- Blue: Paused
- White: Not Available

### Knowledge Sharing
- **Documentation**
- **Storytelling**
- **Communities of Practice**
- **Counterparts**
- **Electronic Repositories**
- **Knowledge Capture**
- **Interviewing**

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<thead>
<tr>
<th>ACRS</th>
<th>ADM</th>
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<th>CA</th>
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### Personal Development
- **Individual Development Plan**
- **Training including qualification programs**
- **Coaching / Mentoring**
- **Rotations & Details**

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### Succession Planning
- **Strategic Workforce Planning**
- **Targeted Recruiting**
- **Waivers of Dual Comp**
- **Incentives (recruitment, retention, relocation)**

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Details for NRO Training including qualification programs

History link

What does the office need to accomplish?
Training and associated webtool to teach technical reviewers the steps of producing a high-quality safety review.

What was the procedure or process?
IDEAS is a web-based job aid for Technical Reviewers. The tool walks an individual through the review steps required to reach a sound safety finding. IDEAS is also an interactive web-based integratio

Lessons learned - what worked, what didn't
The class has been piloted and will be periodically taught at the PDC starting in February 2010. NRO is currently integrating associated qualification requirements with the web-based tool.

Contact:
DEBORAH JOHNSON  301-415-1415
(email - Debby.Johnson@nrc.gov)
Initial Results – 2008/9

Reduced Time to Competency by 6 months ($37 million)

Expert Locator
Then things went south

- Executive Champion left 2010
- New Champion: “KM is running itself”
- New Chief Learning Office: hammer and nail
- Push to cross train managers and staff – 3-4 month assignments
- Interest and involvement in KM declined
The KNOWvember Initiative

Management agreed to KNOWvember marketing campaign:

- Exec Director Message
- Mgrs endorsed KM program
- Update SME lists
- Create & display posters
- Discuss KM at staff meetings
- Highlight KM in newsletters
- Update KM materials
- Create and Show KM videos
KNOWwember Results

- Renewed interest in KM
- KM to be mentioned at future conferences
- KNOWwember will be annual
- New document series for KM established
Observations from 19 KM Project Managers

- Common KM program Drivers
- Killing KM
- Making a successful KM program
Interviewee Selection Criteria

• Built their organization’s KM program – not a consultant
• Spent 2 years or more on the programme
• Primary person responsible for the KM programme – interfaces with executives
• Can point to a clear ROI, e.g., productivity or monetary
• Can speak to the ROI
Interviewee List

Airbus, Antwerp Port Authority, ARUP, BP, Cadbury Schweppes, Defense Acquisition University, Hewlett Packard (HP), the International Center for Tropical Agriculture, (CIAT), Intellectual Property Office Singapore, Lloyds Register Marine, NASA, MPM PETRONAS, Ontario Workplace & Safety Board, U.K. National Health Service Digital, Sellafield, Shell Oil, the U.S. Army and Nuclear Regulatory Commission

Nb. others were interviewed but chose to retain anonymity
Common KM Program Drivers

1. Risk, real or anticipated
2. Desire to improve operations
3. Leader vision and innovation
4. Regulations or direction from above
Killing KM: Observations

- KM Failure is not uncommon
  - NHS
  - U.S. NRC

- Interviews revealed commonalities
  - BP
  - HP/Digital
  - Large international engineering firm
  - US Army
Killing KM: patterns from interviews

• NEW CEOs, acquisition or merger
  • Focus on the bottom line; not what made company successful
• Little done to identify critical knowledge
• Tacit knowledge not considered
• KM success stories out of date or misaligned
• KM Program Manager blind sighted or ignored
“KM is all about people and the networks. You always go to your trusted source, you always want to talk to somebody for reassurance”

- Rafi Oghoubian
Making a Successful KM Program

1. Identify and understand stakeholders
   a. Most important
   b. Don’t assume
   c. Listen carefully

“What if, and I know this sounds kooky, we communicated with the employees.”
Making a Successful KM Program cont.

2. Identify and Prioritize Painpoints
   b. Painpoints vary by level
   c. Pay attention to middle management
   d. Answer WIIFM
Making a Successful KM Program cont.

3. Define a Baseline and Metrics
   a. Gather anecdotal data
      i. How long to do something?
      ii. Where are the bottlenecks?
      iii. How many supplies are needed?
   b. Trend changes, monetize if possible
Remember!
It is ALL about the people
So... what is Knowledge Management?

Knowledge Management is a disciplined way of connecting people with the information and the tools they need to use and manage it.

By helping people work together, knowledge management empowers the minds of many and provides benefits to the organization.
Why? Key Purposes of Knowledge Management

- Inform people
- Build capacity
- Retain knowledge that may be lost by attrition
- Build on lessons learned
- Not re-invent the wheel
APHL Knowledge Management Committee

History & Background:

• Evolved from a subcommittee on surveys from APHL Informatics Committee

• Further evolved from the Data Information and Sharing Committee (DISC)
APHL KM Objectives

• Utilize data to develop questions for further exploration and discovery, as well as the overall strategic direction of APHL’s work

• Promote knowledge management practices

• Sustain data and information resources such as the Member Resource Center (MRC), the Survey Resource Center (SRC), and the Public Health Laboratory Systems Database (PHLSD)
APHL Knowledge Management Committee

The Knowledge Management Committee (KMC) provides guidance on effective management and use of resources for members to improve laboratory processes, procedures and systems. The committee adapts, develops, collects, organizes and disseminates tools to promote public health practice.
Collaborative Tools: colLABorate

Quality Assurance Community

<table>
<thead>
<tr>
<th>Thread Subject</th>
<th>Replies</th>
<th>Last Post</th>
</tr>
</thead>
<tbody>
<tr>
<td>FYI: BioFire Filmarray GI Panel Product Recall Notification</td>
<td>1</td>
<td>26 days ago by Kristy Kubota</td>
</tr>
<tr>
<td>(Rescheduled) Save the date: 4/16 QIF Call on a Lean Rapid Improvement Event for Post-mortem Alcohol and Drug Testing</td>
<td>0</td>
<td>one month ago by Bertina Su</td>
</tr>
<tr>
<td>APHL Annual Meeting Pre-conference workshop</td>
<td>0</td>
<td>one month ago by Kathryn Wangsness</td>
</tr>
<tr>
<td>LIMS-QA</td>
<td>0</td>
<td>one month ago by Gregory Hovan</td>
</tr>
<tr>
<td>ISO accreditation</td>
<td>4</td>
<td>one month ago by Kathryn Wangsness</td>
</tr>
</tbody>
</table>
Listervs

• LISTSERV usually refers to an automatic mailing list server.
• Dates from the mid-1980s.
• When an e-mail is addressed to a LISTSERV mailing list, it is rebroadcast to all members on the list.
• The result is similar to a newsgroup or forum, except that the messages are transmitted as e-mail and are available only to individuals on the list.
Listervs

- Easy to use
- Need only an e-mail client
- E-mail is a comfortable environment
- Opportunity for immediate response(s)
- Subscription list reduces spurious input
- Forms a community of interest
- Solicits tacit knowledge
• Cannabis Community of Practice
• Government Environmental Laboratory
• Newborn Screening
• Laboratory Biosafety Community
• Laboratory Leadership-Mentorship Community
• NewSTEPs Community
• Opioid Community of Practice
• PH Laboratory Operations Community of Practice
• Quality Assurance Community
• STARLIMS Community
• Training Partner Community
• 19 Communities (Listservs)
• Approximately 3500 participants (range ~20 to ~700)
• Activity from January through April 2019: ~400 threads ~800 posts
• Most active in 2019:
  • Newborn Screening Community
  • ARLN Regional Laboratory Community
  • Biosafety and Biosecurity Community
  • Quality Assurance Community
  • NewSTEPs Community
QA Thread on Pipette Calibration

Pipette Calibration

Jeffrey Curran 02-21-2019 04:18 PM
Does anyone have experience with the Arnel pipette calibration system? Jeff...

Kathryn Wangsness 02-21-2019 06:55 PM
Hi Jeff We had an Arnel system years ago and quit using it. Mainly because the reagents expire...

Christi Clark 02-22-2019 08:37 AM
Hi Jeffrey. We use the Arnel system for several years and didn't have any real issues with...

Patricia Myers 02-22-2019 08:39 AM
Are all of your pipettes Rainin brand, or will they service any brand? Thanks....

Tom Phillips 02-22-2019 08:40 AM
All Gilson will do that as well. You can get an ISO certificate for every pipet. They a...

Christi Clark 02-22-2019 08:41 AM
Hi Patricia. We do have quite a few Rainin ones, but they will service any brand....

Carol Loring 02-22-2019 08:41 AM
We use the Arnel Pipette Calibration System in our lab. I'm happy to answer any questions you have....

Tom Phillips 02-22-2019 08:43 AM
All. The thing about the Arnel system is that you can use it to train and monitor personnel...

Carol Larson 02-22-2019 09:42 AM
We experienced the same thing: it became too expensive to do it ourselves with so many pipet...

Steven LaCroix 02-22-2019 11:01 AM
Yes we were not able to use the Arnel system for calibration but use it for t...
Welcome to the APHL Member Resource Center. This is a member-created document repository for professionals working in the public health laboratory field. It gives members ready access to shared practices, communications tools, protocols, and more. This resource center has been developed for APHL members so in order to access the documents, log in to APHL.org using your username and password.

Members can submit a document to be added to the MRC, please upload the document using the submit resource form and the document will be reviewed and added to the center.

Other Available Resources
- APHL toolkits
- APHL publications
- CollABorate

Questions and Feedback
For questions or to submit feedback, please contact Andrea Wright, Associate Specialist, Institutional Research at andrea.wright@aphl.org.
Member Resource Center (MRC) Search

Type in the search bar below and press “Enter” to find a resource. You can also filter documents by topic, published year or document type by checking the specific filter(s) you would like to use and then pressing “apply”.

Search...

Results

2011 Local Laboratory Descriptive Survey Summary

Description: The Local Laboratory Council (LLC) of APHL launched the first survey ever fielded of local public health laboratory structure and practice on May 10, 2011. The survey was developed by the LLC to better understand the staffing, facility infrastructure, funding sources, and technical testing capacity of local public health laboratories (LPHLs). The survey was distributed to the 40 APHL member LPHLs. The response rate was 75% (n=30). The LLC and APHL thank the responding laboratories for participating in this ground-breaking survey.

Topic(s):
Document Type: pdf

2011 Minnesota Clinical Laboratory Survey of Readiness and Needs for Electronic Health Information Exchange, Dec 2011
Member Resource Center (MRC) Search

Type in the search bar below and press “Enter” to find a resource. You can also filter documents by topic, published year or document type by checking the specific filter(s) you would like to use and then pressing “apply”.

**Knowledge Retention Toolkit v2.1 (Spring 2019)**

**Description:** Save all important job related details. Someone has to do the job when people are on extended leave, retire or simply move on. This tool helps laboratories capture an employee's institutional and tacit knowledge to pass on to new hires.

**Topic(s):** Workforce and Training; Operations, Support Services, and Strategic Planning

**Document Type:** xlsx
Knowledge Retention at the Arizona State Lab

June 3rd, 2019

Presenting at the APHL 2019

Victor Waddell, PhD | Lab Director
Facilities Management
Knowledge Retention

• Using the Knowledge Retention Toolkit

• By the end of 2018, 2/3 of the Lab Facilities team plans to retire affecting knowledge transfer among the Lab Facilities team and daily facilities operations at the Lab

• Lab Facilities Project Started in 2017
How to get started?

- What is the best way to get everyone on board with this project (management and staff)?
- What is the best approach?
- I have tools, which ones will get me to the goal?
- Frequency of meetings/discussions/updates?
Lean Tools

- Arizona Management System (AMS)
- Huddles/PVDs
- Metrics
- Gemba walks
- Leader Standard Work
- A3 is a standard, clear and concise format for communicating project information fit onto one 11x17 page
Project Name: Facilities Knowledge Management

Scope:
- Review of all processes via Gemba walk
- Documentation via written, recorded
- Updates to MVP system
- Changes to responsibilities
- Changes to workflow

Goal Statement:
Create at a minimum document process for key activities performed by the Lab Facilities team by Feb. 2018.

Analysis (Plan)
Each staff member on the Lab Facilities team serves a role and the newest team member has been with the Lab for 7 years and has learned many of the processes over the years. When 2/3 of the team members started, the building was still new and there were many changes made to create greater efficiencies. As the team members worked through the various changes they learned how to ensure the work was completed. However, when a team member was on vacation or gone, certain activities would not get completed as the other team members did not know how to perform or it was felt that it could wait until the return of the team member that routinely performed the task. Due to the workflow and the lack of documented processes, activities would occasionally get missed or would not be performed consistently between the staff. A review of current activities must occur and be documented in a way that works for the staff in the section and allows for the transfer of knowledge.

Review:
- Activities performed by Lab Facilities and identify key tasks (Gemba walk)
- MVP system to determine if there are options that would assist in knowledge sharing
- How information is stored (electronically and hard copy)
- Contacts for specific tasks needed to be performed for the building (e.g. ADOA, Johnson controls)
- Work order process – discovered that work orders were behind by about 6 months equating to over 600 work orders not updated

Potential root causes:
- Longevity of the current staff and their familiarity with the building, the processes, and each other
- No documented processes on work performed
- No regular system in place to ensure work completed

Strategy (Do)

<table>
<thead>
<tr>
<th>#</th>
<th>Actions</th>
<th>Owner</th>
<th>Due Date</th>
<th>Action Status</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Review electronic and hard copy records filing system</td>
<td>Rick/Les</td>
<td>9/8/2017 - Done</td>
<td>Created shared drive on 3/2/17</td>
</tr>
<tr>
<td>2</td>
<td>Review MVP system and ensure equipment is current</td>
<td>Les/Brian</td>
<td>8/27/2017 - Done</td>
<td>Completed, see note regarding sustainability</td>
</tr>
<tr>
<td>3</td>
<td>Perform Gemba walks to determine key activities – ensure this activity is added to LSW</td>
<td>Steve/Les</td>
<td>3/9/2018</td>
<td>Ongoing activity, part of LSW – add to Les’ LSW</td>
</tr>
<tr>
<td>4</td>
<td>Create draft documented processes (Std work, SOP, flow charts, etc)</td>
<td>Brian</td>
<td>12/22/2017 - Done</td>
<td>Complete and awaiting final reviews – see list</td>
</tr>
<tr>
<td>5</td>
<td>Review draft documents then finalize via Lab QA-019</td>
<td>QA Team – final review</td>
<td>3/30/2018</td>
<td>In progress, working with QA staff to move forward, see SW Review Check sheet</td>
</tr>
<tr>
<td>6</td>
<td>Perform SS (Workplace organization) on common areas (Shop, Back room, Penthouse)</td>
<td>Lab Facilities team</td>
<td>3/30/2018</td>
<td>Shop completed, back room and penthouse in progress – see Problem Register</td>
</tr>
<tr>
<td>7</td>
<td>Perform SS on individual offices</td>
<td>Rick/Les</td>
<td>1/12/2018 - Done</td>
<td>Completed, going forward use of SS checklist or Gemba walks to ensure sustain</td>
</tr>
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Results and Issues (Check)

- Established a shared electronic drive for common records that all Lab Facilities staff can access
- Hard copy files were reviewed and files updated and labeled
- SS performed on common work areas: Shop, back room, penthouse

Standarization and Sustain (Act)

- Weekly huddle meetings by the Lab Facilities team will ensure that activities identified for knowledge sharing and improvement are sustained
- Gemba walks by Owner
- SS Checklist review – periodically performed to verify sustain
- Consistent use of FFAC-001 Equipment Modification Form (use of this will ensure MVP is up to date with equipment)

Training and VOC to encourage use of FFAC-001 Equipment Modification Form
- Provide training and ensure that Gemba walks are part of supervisor LSW
- Provide training on SS follow up checklist and best practice frequency to sustain
Happy Ending

- Sustainability in the future for Lab Facilities
  - Management engaged and discussions happening weekly
  - Both employees have now retired and we have hired new staff to fill these positions
THANK YOU

Victor Waddell PhD | Lab Director
Victor.waddell@azdhs.gov | 602-364-0609
Questions