WRITING POLICIES AND PROCEDURES

When things go wrong in a police department or laboratory one does not have to wait long to hear “they were not following procedures”, “there was no defined procedure” or “we need training for that procedure to assure competence.” Laboratories have progressed from no accreditation to compliance with the American Society of Crime Laboratory Directors Laboratory Accreditation Board (ASCLD/LAB) formed in 1982 by the American Society of Laboratory Directors (ASCLD) now called the legacy program and presently are transitioning to operate in accordance with the ISO/IEC 17025: 2005 International Standard requirements. At the heart of these programs are written policies and procedures that are thoroughly discussed in our ISO/IEC 17025 chapter. It is also possible to perform a procedure with excellent outcomes and use no written procedure. Although this is not preferred or common there may be several steps of a procedure that have never been put in writing. Many laboratories procedures are a collection of ASCLD/LAB procedures that have been modified to fit the ISO/IEC 17025 standard. Some laboratories have also benchmarked with other laboratories for best practices and modified others procedures to fit the processes in their laboratory. All these methods are acceptable and they work. There is also a distinctive difference between administrative support procedures and scientific procedures which we discuss later in the text. Lastly, well written procedures provide the foundation for the training lesson plan. Training lesson plan learning objectives, curricula materials, assessment and competency measures all develop from the well written procedures.

However, when things do go wrong, and they will, an auditor external from the laboratory perhaps from the internal investigative unit from the parent agency or from an external regulatory body will not be concerned with the history of the procedures in question. The auditor will be concerned with *present* conditions and will follow these steps:

1. The auditor will perform a desk audit of the written procedure in an attempt to identify or not all associated personnel, policies, procedures, controlled documents, data and controls associated with the task.
2. Next the auditor will develop a Process Flow Chart (PFC) to provide a visual representation of all procedure steps identified in the desk audit.
3. Lastly, the auditor will interview and observe personnel when they are performing the procedures (surveillance audit) to confirm and verify compliance with all written procedure steps.

As an alternative to revising an existing procedure for improvement, it is at times preferable to start with a blank white board approach. The procedure must be aligned with the intent of the ISO clause and describe how *your laboratory* operates in accordance with the specific clause in the standard.

Procedures should also clearly identify non-conformances. Non-conformances to customer requirements should not be relied upon for detection on technical review but identified and remedied by the primary scientist performing the work. The definition of non-conformance(s) should also be defined for each step in the procedure. If personnel have difficulty defining a non-conformance to the procedure, then ask "what outcomes would initiate a reanalysis?" The answer is a non-conformance.

Lexicon

The first step in the development of any procedure is the understanding and use of a standardized lexicon or common vocabulary of terms. Policies and procedures for training, operations, communications and all quality management activities are dependent upon the proper and consistent use of terms. The efficiency and effectiveness of communication and the quality management system are greatly improved when staff understand and use the proper terms. Our discussion of procedure development depend upon the following terms defined in ISO 9000 (ISO 9000: 2005 Quality Management Systems - Fundamentals and vocabulary, 2013).

Below are some of the basic terms from this standard we will use in this discussion:

Audit (3.9.1): systematic, independent and documented process for obtaining audit evidence and evaluating it objectively to determine the extent to which the audit criteria are fulfilled.
Corrective Action (3.6.5): action to eliminate the cause of a detected non conformity or other undesirable situation.
Effectiveness (3.2.14): extent to which planned activities are realized and planned results achieved.
Efficiency (3.2.15): relationship between result achieved and resources used.
Information (3.7.1): meaningful data.
Non Conformity (3.6.2): non-fulfillment of a requirement.

Policy (3.2.4): Overall intentions and direction of an organization (3.3.1) with regard to quality (3.1.1) as formally expressed by top management (3.2.7).

Preventive Action (3.6.4): action to eliminate the cause of a potential non conformity or other undesirable situation.

Procedure (3.4.5): specified way to carry out an activity or a process (3.4.1). Note 1, procedures can be documented or not. Note 2, when a procedure is documented, the term "written procedure" is frequently used. The document (3.7.2) that contains a procedure is called a "procedure document".

Process (3.4.1): set of interrelated or interacting activities which transforms inputs in to outputs.

Product (3.4.2): Result of a process (3.4.1). Note 1: There are four generic product categories, as follows: Services, software, hardware, processed materials.

Quality Assurance (3.2.11): part of quality management focused on providing confidence that quality requirements will be fulfilled.

Quality Control (3.2.10): part of quality management focused on fulfilling quality requirements.

Requirement (3.1.2): need or expectation that is stated, generally implied or obligatory.

National scientific oversight bodies have sounded the alarm and provided guidance to establish and enforce standardization of forensic processes and procedures. In 2005 the U. S. Congress passed the Science, State, Justice, Commerce and Related Agencies Appropriations Act of 2006 authorizing the National Academies of Science (NAS) to create an independent body to evaluate forensic sciences (NAS, 2009). The NAS report was the result of many years of advocacy from the forensic professional organizations working with their locally elected representatives. The NAS assembled an esteemed group of professionals who interviewed a diverse group of scientists, legal experts, and leaders from the scientific academic community who interviewed forensic practitioners from local, state, federal agencies and the academic community. The NAS

report stated the need to improve the overall quality of forensic services resulting in 13 recommendations to improve forensic services.

NAS recommendations either directly or indirectly refer to the standardization of best practices for the delivery of forensic services:

Recommendation #1 calls for a newly created federal agency entitled the National Institute of Forensic Science that will "establish and enforce **best practices** [my emphasis] for forensic science professionals and laboratories."

Recommendation #8 states "Forensic laboratories should establish routine **quality assurance and quality control procedures** [my emphasis] to ensure the accuracy of forensic analyses and the work of forensic practitioners."

The NAS report also cited Federal Bureau of Investigation quality assurance standards for DNA laboratories (FBI Quality Assurance, 2013) and the ISO/IEC 17025: 2005 International Standard (section 5.4.4) (ISO/IEC 17025, 2005) specifying the process to be followed for validation of scientific methods. Inherent in these scientific and business procedures are quality controls to assure results are within established customer requirements for approval or rejection of results.

Scientific Procedure vs. Administrative Procedure

We would be remiss by not distinguishing the differences and similarities between a scientific procedure used in laboratory analyses as compared to administrative procedures used for support functions and the total performance of the quality management system designed for continual improvement. The scientific applied research procedures grounded in hypothesis testing, rigorous statistical analyses for type A and type B errors and uncertainty measurement budgets should be clearly understood and used by forensic laboratories if the research method is to be

performed in their laboratory by their staff. Most scientific procedures in use by forensic practitioners are methods that have been researched and validated by other researchers and are validated for use by forensic practitioners in their laboratories. Forensic laboratories are now performing more research, publish and validate customized procedures for use in case analyses. Laboratories operating in accordance with ISO/IEC 17025 standards are required to perform procedure validation with their staff, facilities and equipment. The NAS report cites the ISO/IEC 17025: 2005 Standard, section 5.4, Test and Calibration Methods and Method Validation and provides a generic guide for the scientific method.

An effective procedure audit tool can be designed to perform an interrogatory "cross walk" between ISO/IEC 17025 mandatory policies and procedures and scientific or administrative methods. Table 1 is an auditor checklist that correlates requirements for the ISO/IEC 17025 - 5.4.4 scientific procedure with the mandatory ISO/IEC 17025 policies and procedures listed in the ISO chapter Table 1 and Table 2. This check list is the minimum and can be expanded upon with additional policies and procedures if management has determined there is unique customer or regulatory requirements. For example, there are several Federal Department of Labor, Occupational, Safety and Health Administration (OSHA) safety regulations directly applicable to forensic laboratories. Hazard Communications and Personal Protective Equipment (29 CFR 1910) are examples that apply to all forensic laboratories (Occupation Safety Health Administration, 2013).

Table 1 ISO/IEC 17025 Clause 5.4.4. Non Standard Method Audit Check List

Table 1

ISO/IEC 17025 5.4.4 Non Standard Methods / Mandatory Policy and Procedures Audit Check List					
ISO/IEC 17025 5.4.4 Non Standard Method Requirement	ISO/IEC 17025 Written Policy Requirement	ISO/IEC 17025 Written Procedure Requirement	Question	Y/N	Comments
Appropriate Identification;	4.3.1 Document Control 4.3.2.2 Document review	4.3.1 Document Control 4.3.2.2 Document Review	Is there a clearly written policy and procedure with controls for: 4.3.1 Document control? 4.3.2.2 Document review?		
Scope;	4.1.5c Protecting customer's information 4.2.2 Quality	4.1.5c Protecting customer's information	Is there a clearly written policy and procedure with controls for: 4.1.5c Protection of customer's information?		
Description of item being tested;	4.4.1 Review of contracts	4.4.1 Review of Contracts	Is there a clearly written procedure with controls for: 4.4.1 Review of contracts?		
Parameters and or quantities or ranges to be determined;	4.4.1 Review of Contracts	4.4.1 Review of Contracts	Is there a clearly written policy and procedure with controls for: 4.4.1 Review of contracts?		
Apparatus and equipment, including technical performance requirements;		5.4.5.2 Validation	Is there a clearly written procedure with controls for: 5.4.5.2 Validation?		
Reference standards and reference materials required;	4.6.1 Purchasing	4.4.1 Review of contracts 4.6.1 Purchasing 5.6.3.1 Calibration of reference standards 5.6.3.4 Handling of reference standards	4.4.1 Is there a clearly written policy for purchasing of standards? Is there a clearly written procedure with controls for: 4.6.1 Purchasing of standards? 5.6.3.1 Calibration of standards? 5.6.3.4 Handling of reference standards?		
Environmental conditions required and any stabilization period needed;		5.3.5 Accommodations and environmental conditions	Is there a clearly written procedure with controls for: 5.3.5 Accommodations and environmental conditions?		
Description of the			Is there a clearly written		

procedure;			procedure with controls for: 5.4.5.2 Validation?		
Affixing of identification marks, handling, transporting, storing and preparation of items;		5.7.1 Sampling 5.7.3 Recording sampling data 5.8.1 Receipt of test items 5.8.4 Avoiding loss of test items	Is there a clearly written procedure with controls for: 5.7.1 Sampling? 5.7.3 Recording of sampling data? 5.8.1 Receipt of test items? 5.8.4 Avoiding loss of test items?		
Checks to be made before the work is started;	5.2.2 Training	5.2.2 Training 5.4.5.2 Validation	Is there a clearly written policy and procedure with controls for: 5.2.2 Training? Is there a clearly written procedure with controls for: 5.4.5.2 Validation?		
Checks that the equipment is working properly and, where required;		5.5.5 Use of equipment; 5.6.1 Calibration of equipment; 5.6.3.3 Intermediate checks and reference standards	Is there a clearly written procedure with controls for: 5.5.5 Use of equipment? 5.6.1 Calibration of equipment? 5.6.3.3 Intermediate checks and reference standards?		
Calibration and adjustment of the equipment before each use;		5.6.1 Calibration of equipment	Is there a clearly written procedure with controls for: 5.6.1 Calibration of equipment?		
Method of recording the observations and results;		4.3.1 Document control; 4.3.2.2 Document review; 4.3.3 Amending documents by hand; 4.3.3.4 Changes to documents in electronic systems; 5.7.3 Recording sampling data.	Is there a clearly written procedure with controls for: 4.3.1 Document control? 4.3.2.2 Document review? 4.3.3 Amending documents by hand? 4.3.3.4 Changes to documents in electronic systems? 5.7.3 Recording sampling data?		
Safety measures to be observed;	Federal Occupation	Federal Occupation	Is there a clearly written policy and procedure with		

	Safety and Health Administration regulations State and local safety regulations (HazCom, PPE)	Safety and Health Administration regulations State and local safety regulations	controls for: Federal Occupation Safety and Health Administration regulations State and local safety regulations?		
Criteria and/or requirements for approval/rejection;	4.2.2 Quality 4.8 Resolving complaints 4.91 Handling non conformances 4.11.1 Corrective action	5.9.1 QC monitoring	Is there a clearly written policy with controls for: 4.2.2 Quality? 4.8 Resolving complaints? 4.91 Handling non conformances? 4.11.1 Corrective action? Is there a clearly written procedure with controls for: 5.9.1 QC monitoring?		
Uncertainty or the procedure for estimating uncertainty.		5.4.6.1 Estimate of uncertainty (calibration 5.4.6.2 Estimate of uncertainty (testing)	Is there a clearly written procedure with controls for: 5.4.6.1 Estimate of uncertainty (calibration)? 5.4.6.2 Estimate of uncertainty (testing)?		

Instructions on How to Develop Procedures

Readers are also encouraged to seek additional instruction on how to prepare effective procedures and their use for the development of training programs for new personnel and audit teams. Specific training for the development of procedures for procedural writing teams often

leads to the formation of 1st party auditing team training lesson plans and specific procedure training for bench personnel to competency.

The development of written procedures incorporates eight main steps.

1. **Desk audit**

The desk audit is most commonly performed off site and is an exercise to identify and understand documents for Policy (Why), Procedure (Who does What, When, Where and How) and any supporting controlled documents, records, and data. The main operative word is "Who." Procedures are performed by people that are empowered by top management with responsibilities and authority to perform a specific task.

The desk audit will collect all existing policies, procedures, controlled documents, records and data related to the procedure in question. The desk audit should provide the audit or procedure writing team a foundation for understanding the purpose of the procedure and how it is performed.

2. **Observe procedure and being used**

   The observation of the procedure or a surveillance audit provides the auditor or procedure writing team the opportunity to observe the procedure being performed first hand. Observations are compared to existing policies and procedures to confirm the procedure is being followed as written. It is often the case that changes have been made to improve the procedure but may not have been incorporated in writing.

3. **Interview staff using procedure**

Staff is queried as to their ability to articulate their knowledge, understanding and application of the procedure. Are the staff aware why they are performing the procedure and do they have the big picture for who does what, when, where and how?

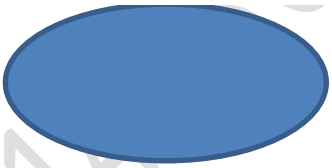
4. Develop Process Flow Chart

The flow chart uses standardized symbols that identify sequential tasks, materials, documents and decisions needed to provide a visual of a specific procedure. More complex flow charts can show linkages to other processes, time and resources needed for each task and selected LMPM metrics. Information to begin the flowchart is gathered from existing documents and interviews with staff and supervisors. The most important step is to observe the procedure from start to finish followed by a comparison of your observations to staff interviews and documents. Do your best to keep this process simple and concise. The flow chart process should identify at a minimum all controlled documents, data collection points, time, costs, non-conformances, rework (go with remediation or no-go with corrective action decisions) and horizontal linkages to other processes, procedures and regulations. Personnel, by job title, are identified by the step in the process that they perform. Horizontal linkages to other procedures (multi-section cases or support services) and vertical linkages to upper level policies and the laboratories mission statement and customer requirements assure the procedure is on target with quality management system goals. A useful adaptation of the flow chart includes scaling of symbol sizes for time or costs which identify which steps in the process are most costly and timely. For example, the symbol for a specific task is sized at 1" corresponding to 1 hour. A 2" square would represent 2 hours. Operational management line leveling procedures indicate no item will cycle through the total process sooner than the timeliest step. Therefore, resources should be applied to the timeliest step in the process to reduce cycle time. Flow charts also provide excellent training aids for new employees learning the process. The flow chart is the foundation of your procedure. The procedure outline and then final descriptive narrative will depend on accuracy and completeness of the flow chart.

Ultimately, an internal or external accrediting body auditor will develop their own procedure flow chart for your written procedures mandated by regulations, agency, accrediting body standard or customer requirements. Remember to keep the flow chart simple and concise. If it becomes visually very complex and confusing, then this could be an indication your procedure is too complex and may cause unwarranted remediation, non-conformances and resulting corrective actions.

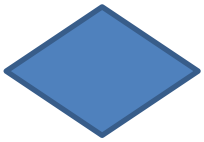
Figure 1 Basic Flow Chart Symbols

Oval: Materials, inputs or outputs



Square or rectangle: Task

Diamond: Decision



Scalloped rectangle: Controlled document

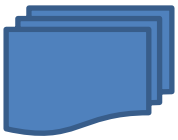
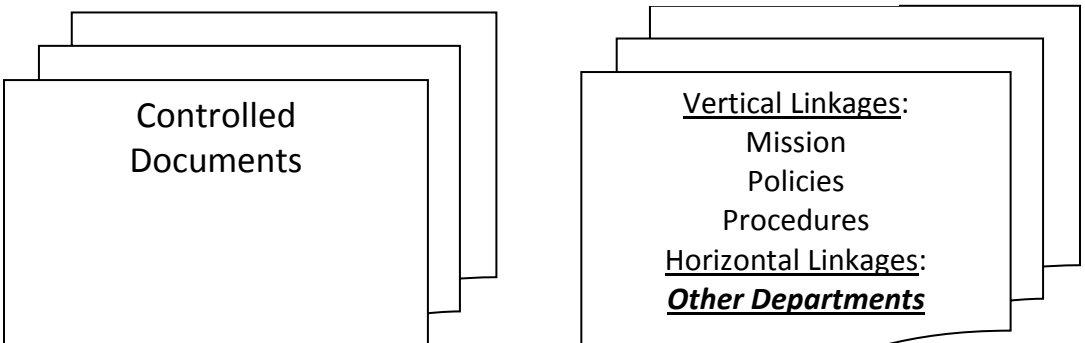
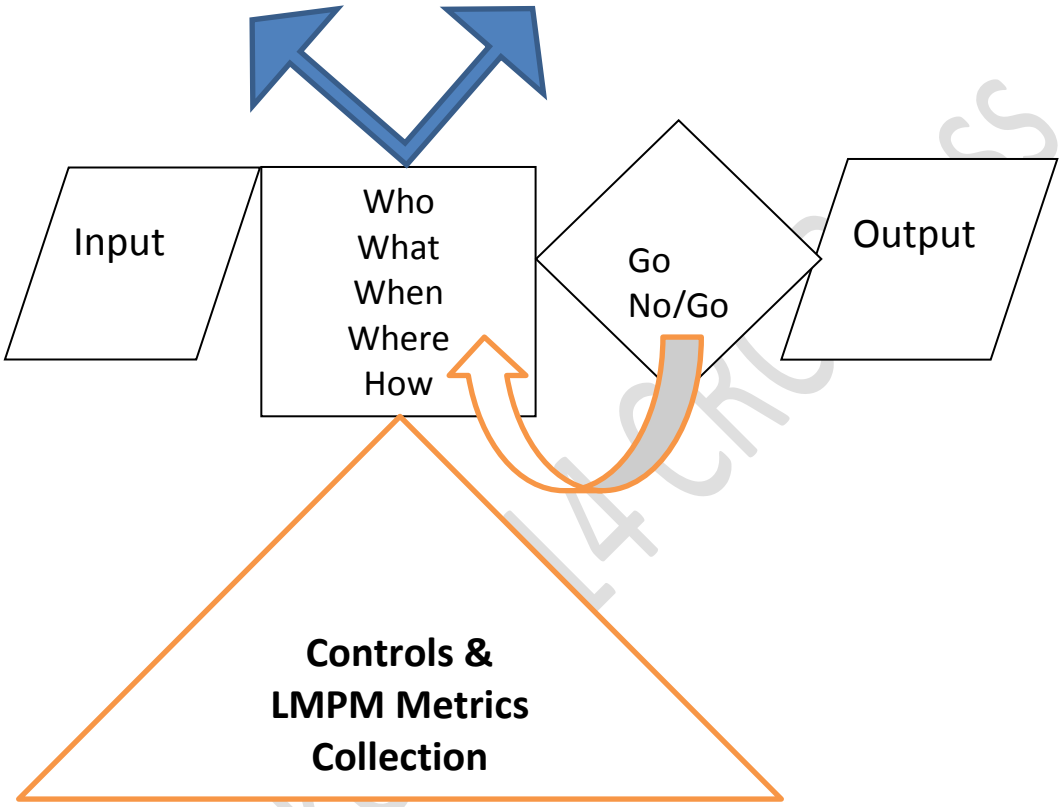


Figure 2 Basic Procedure Process Flow Chart





5. **Verbally articulate Process Flow Chart**

Perhaps the most challenging and most important task in procedure writing is the concise and articulate written description of the procedure following the PFC. A simple and very effective approach to this critical task is to have one member of the writing team verbally articulate the PFC to the staff that actually performs the task. Any errors in the PFC or misunderstanding on how the procedure is performed will be identified in this step.

6. **Transcribe verbal articulation to text**

The verbal articulation of the procedure will now be written by a scribe on the procedure writing team. The narrative description of the procedure, using active voice, is written after the completion of the PFC (Table 2). One effective way to do this is to verbally articulate a description of the PFC from the beginning to the end. This does two things: 1. any redundancies, missing steps or tasks that don't make sense will be readily apparent. 2 If you cannot "talk" your way through the PFC, then the procedure is not clear and will not be understood by personnel. Do this by yourself, with others on the procedure team and stakeholders until all steps are concise and clearly described and written. The PFC will be very accurate after several reiterations of this process.

A critical component of procedure writing process is identification of individuals with writing skills, teaming with subject matter experts and supervisors, who will be responsible for the writing of all procedures in a clear and consistent manner. This is not an easy task and must be done properly as a team made up of the writers, bench scientists and supervisors. All will be held accountable to these procedures in future audits, so now is the time to do it right.

It is also very effective for the procedure writing team to be trained as the first audit team. The procedure writing team is best positioned to perform the first audits as they developed the procedures. Writing guidelines for scientists and business are thoroughly discussed in separate works by Hogan (Hogan, 2005) for business writing and Pechenik (Pechenik, 2007) for scientific writing. Hogan provides detailed guidance on how to explicitly write clear memoranda, letters, email and procedures. He emphasized the major mistake that writer's make is not including all steps needed in a procedure and or not providing these detailed instructions *when needed* by the readers. Pechenik provides a treasure trove of practical instructions designed for graduate

students and research scientists documenting laboratory experiments, writing research papers or posters and general guidelines for proper scientific writing. The challenge is to combine business and scientific writing skills to provide effective, concise and practical procedures for the bench scientists, supervisors, support staff and management.

There are many guidelines for grammar and writing style texts available. Strunk and White, The *Elements of Style* (Strunk Jr. & White, 2000), is one text that should be in everyone's reference library. A consistent format and style are essential for efficient use by all staff. Time is well spent studying basic and advanced protocols for proper grammar, style, sentence structure and format for business technical writing and scientific publications. We are seeking a unique mix of business technical and scientific writing that will produce a clear, concise and understood procedures that will be *understood and used* for daily analyses and provide the framework for continual improvements. The uniform theme from all writing guides is clarity and conciseness developed from active voice sentence structure *clearly identifying who does what when*.

The most common cause of unclear procedures and related corrective actions are the lack of active voice sentence structure (inappropriate use of passive voice sentence structure) resulting in no staff designated responsible for performance of key tasks and decisions (Table 2). It is not clear who is responsible for the task or has the authority and responsibility to make decisions. Who being a job title or position (e.g. DNA Section Supervisor or DNA Technical Leader). Consistent use of present tense in the active voice will provide the clearest procedure that will be understood and used. The active voice construction consists of Subject – Verb – Object. In passive voice sentence structure the subject is acted upon and the subject is usually unclear or not included. At times the passive structure may be used intentionally not assigning responsibility

285 and authority for a particular outcome. Passive sentence structure has no place in laboratory
286 procedures as tasks, responsibilities, authorities and outcome measures must be crystal clear.

287 **Table 2 Passive vs. Active Voice**

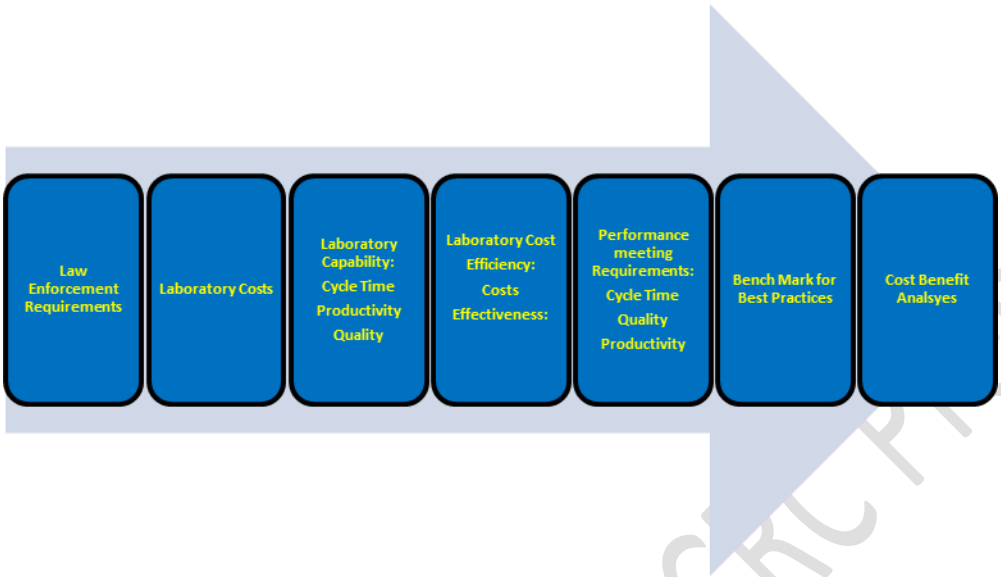
PASSIVE	ACTIVE with Responsibility Assigned
Ensure data from the quantitation step are recorded on form 19b.	The Forensic Scientist III responsible for performing step #3 records all instrumental data generated from instrument ABC123 on form 19b.
A determination is made as to whether the results are acceptable.	The Chemistry Case Review Technical Leader decides if the analytical results from extraction step #6 are within limits of acceptability.
Unacceptable results, as defined in Procedure #12654 Step #21 are monitored for continual improvement.	The DNA Team Leader is responsible for monitoring all non-conformances as defined in Procedure #12654 Step #21, correcting the non-conformance with remediation, or initiating a Corrective Action as per QM Procedure #1299.
Requests for service contracts are accompanied by proper documents.	All Section Chiefs are responsible for including with a Request for Contracted Services (Form Fiscal 103b) three independent quotes for all services over $5,000.
Additional resources can be identified through decreases in non-essential items.	Top management will identify additional resources through the reduction in non-essential services.
Successful completion of the competency will allow her to start work.	If the Forensic Scientist I meets established performance standards, then the Technical Leader for Training recommends to the Unit Chief assignment to supervised casework activities.
Administrative and Technical reviews are continually monitored.	All technical personnel are responsible for the initial administrative and technical review for all of their work following Procedure QA1012.
Laboratory wide preventive actions are designed to prevent high risk procedures.	All Unit Chiefs are responsible for identifying and monitoring high risk procedures for non-conformances as per Procedure QA1099
All Corrective Action Reports need to be completed in a timely manner.	The Quality Assurance Manager is responsible for initiating, monitoring and completion all Corrective Reports within 60 days of the Unit Chief verifying a recurring non-conformance as per Procedure QA963.
All emails related to case analyses will be retained.	The Forensic Scientist in charge of a case retains all email and hard copy documents verifying communications that affect the case analyses as per Procedure IM#2256

288

289 ## 7. Add Laboratory Management Model Performance (LMPM) metrics

Ideally, procedures should link to the key Laboratory Performance Metrics for Customer Requirements, Costs, Capability, Cost Efficiency, Cost Effectiveness, Performance and Bench Marking (Figure 1 LMPM metrics) for best practice. A collective sum of metrics from all procedures equals the total metrics for the forensic unit (e.g. DNA unit). Staff and supervisors should confirm the procedure is associated with customer requirements. If not, then the procedure may not be needed and resources can be applied elsewhere more appropriately. The cost of the procedure with personnel time, consumables, contracts, support personnel and facilities can be measured per unit output and monitored for continual improvement in efficiency and effectiveness. Performance can be measured to determine if capabilities are meeting customer requirements. Lastly, the procedure, using these metrics can be bench marked with similar procedures and laboratories (private or public). Perhaps the most practical use of the LMPM metrics is to choose one metric of interest to top management and law enforcement customer(s). For example, timeliness or cycle time is a component of the capabilities metrics. Information technology support can establish data collection points for time integrated with the laboratory information management system at the end of key tasks in the procedure. Similarly, data collection points can be developed for remediation, non-conformances and reanalysis to gather Good and Bad quality data metrics.

Figure 3 LMPM Metric Categories

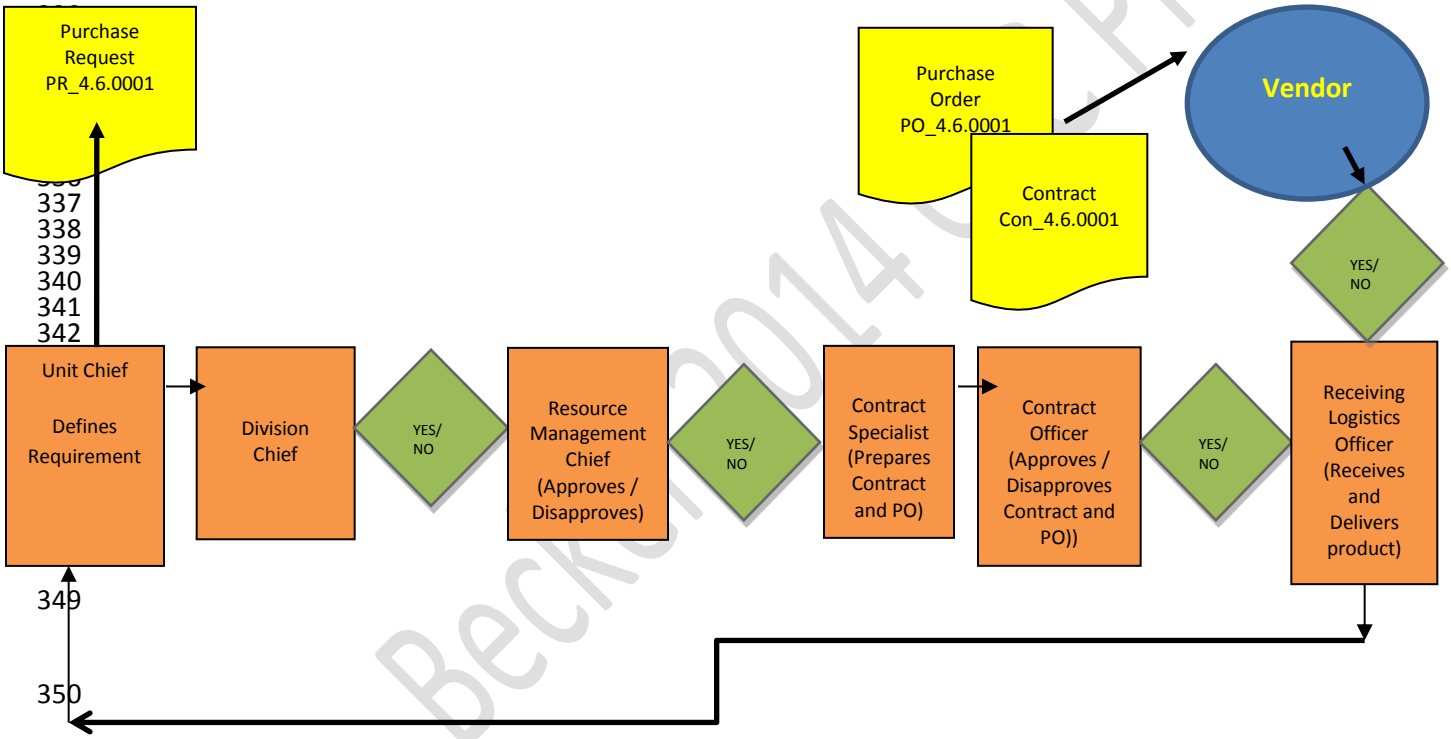


8. Training program if competency affects reported results or opinions

Lastly, the procedure and PFC can be used as a foundation to develop training plans that will assure competency of personnel. Training plans should develop learning objectives, curricula materials, assessments and competency tests that confirm personnel perform at the proper standards. Causative factors for all know non-conformances should be identified, measured and monitored for continual improvement and assurance that the work force is competent.

Below is an example of a Purchasing department procedure that was developed using the above steps starting with the blank white board approach. The resulting PFC (Figure 5) and the resulting procedure were much clearer and concise than the existing procedure in use that was revised several times over the last several years.

Figure 4 Example of Purchasing Procedure PFC



Metro Laboratory

Procedure

4.6.0001 Purchasing

Control Document Number: 4.6.0001-10142012

Approval Date: November 1, 2012

Authority: Chief, Resource Management

1. References
    a. Internal Procedures
        i. 4.6.0002 Competitive and Sole Source Vendor Selection
        ii. 4.6.0003 Receipt of Products
        iii. 4.6.0004 Development and approval of Annual Budget
    b. External Regulations
        i. ISO/IEC 17025: 2005 International Standard
        ii. Metro City Financial Policy for Vendor Selection
        iii. Metro City Annual Budget Policies and Procedures
2. Laboratory Mission Statement

Metro Laboratory shall strive to meet our customer requirements through the application of the best science to the best evidence in an efficient, effective and ethical manner with the highest quality.

3. Policy

Metro Laboratory shall be diligent in keeping current with state of the art technologies having potential to increase efficiency and effectiveness of services provided to our customers. New technologies may provide greater productivity, higher quality (less non-conformance), increased efficiency (less cost), and decreased cycle times with associated decreased resulting backlogs. ***All staff*** will continually advise their ***Branch Chief*** of potential new products for evaluation to increase quality of services provided to our customers.

4. Procedure

a. All Staff

i. All staff shall keep current with latest technologies and services that may increase the efficiency, effectiveness, and contribute to the continual improvement of operations in their respective units. Staff shall forward, with detailed descriptions of benefits and a ***CD_PR_4.6 (Purchase Request)*** to their respective ***Unit Chief by 1June*** to be assessed for submission to budget approval and subsequent purchase and evaluation.

b. Unit Chief

i. ***Unit Chief(s)*** shall discuss with staff merits of recommended products and services. **Unit Chief** will assess potential for increasing effectiveness, efficiency, timeliness and quality of services ***shall approve or not***, sign, date form Purchase Request (CD_PR_4.6) and if approved submit to the ***Chief, Resource Management*** by ***1July***.

c. Chief, Resource Management

i. ***Chief, Resource Management,*** shall review the CD_PR_4.6 for accuracy, completeness and Unit Chief approval. Upon verification of availability of budgeted funds*;* ***approve or not****,* sign and date and forward to the ***Contract Specialist*** as appropriate.

d.* Contact *Specialist

i. ***The Contract Specialist*** shall review the CD_PR_4.6 for appropriate completeness and appropriate Unit Chief and Resource Management Chief approvals. Upon verification of appropriate approvals, the Contract Specialist will follow appropriate internal / external fiscal policies, procedures and regulations and decide if the purchase of this product requires a sole source justification or shall be a competitive bid process.

ii. If a sole source purchase is justified, the Contract Specialist will follow sole source procedures, develop a contract and ***forward to the Contract Officer*** for approval and execution.

iii. If a competitive bid is required, the necessary procedures will be followed to allow competitive bidding by appropriate vendors. Upon completion of the competitive bid process, a contract will be *forwarded to the Contract Officer* for approval and execution.

e. Contract Officer

i. The ***Contract Officer*** shall review, ***approve or not***, sign and date all sole source purchases and contracts (Con_4.6.0001) for accuracy and completeness as per all fiscal policies, procedures and regulations.

1. Approved Sole source purchase requests and competitive bid contracts shall result in a Purchase Order (PO4.6.0001) approved, dated, signed

and forwarded to successful vendors for purchase of products by August 1.

f. Logistics Officer

i. The Logistics Officer, upon receipt and before 1 October of the associated funded fiscal year, ***will confirm the inventory of the product received is accurate or not*** and concurs with associated PO_4.6.0001. Upon verification, the Logistics Officer shall make entry in the Log Book (LB_4.6.0001) the description of the product, invoice number, date and initials. Any discrepancies or damage will result in the product being returned to the vendor.

ii. Upon proper receipt, the Logistics Officer, affix Property Tag (ID_4.6.0001) for products valued over $500 and shall deliver the product to the associated Unit Chief. Upon delivery, the Unit Chief shall sign and date the Receipt of Product form RE_4.6.0001. The Logistics Officer will maintain completed RE_4.6.0001 forms.

g. Potential Non-Conformances

i. Purchase not strategically aligned with Mission priorities

ii. Purchase not strategically aligned with customer requirements

iii. Purchase does not increase capabilities or performance LMPM metrics

1. Increase productivity
2. Increase quality
3. Decrease cycle time

iv. Purchase not funded

v. Incorrect entries or no signatures, dates, approvals on controlled documents

vi. Controlled documents missing for property valued over $100

vii. Untimely completion of process steps

1. CD_PR_4.6 Purchase Request

454 a. June 1, Unit Chief

455 b. July 1, Division Chief

456 c. August 1, Resource Management Chief

457 2. Con_4.6.0001 Contract

458 3. PO_4.60001 Purchase Order

459 4. Log Book

460 a. October 1, Logistics Officer

461 5. RE_4.6.0001 Receipt

462 viii. Sole Source should be Competitive Bid

463 ix. Competitive Bid should be Sole Source

464 x. Damaged products received

465 xi. Incorrect products received

466 xii. No ID number affixed for property valued over $500

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