National Occupational Frameworks

A Technical Guide to Structure and Content

Draft 3.0

January 2017

Table of Contents

International Occupational Training Standards

Occupational Standards describe the job functions a person must competently execute in order to meet the requirements of a given occupation. Typically, standards are adopted by entire countries, industries or organizations after a lengthy and comprehensive period of review, comment and approval. Often times this process is managed by a representative body authorized to speak on behalf of an industry or sector. It is expected, then, that all members of that country, industry or organization adopt and work to meet those standards.

Germany, Switzerland, the United Kingdom, Canada, and more recently Saudi Arabia have assembled expert bodies of employers and skilled workers to develop consensus-based national occupational standards that unify the pathway to job training regardless of where or how that training takes place. The Red Seal program in Canada and the Trailblazers program in the U.K. provide excellent examples of recent government-organized, business-led efforts to develop national occupational standards. While an excellent way to create national standards, these efforts can be costly and time-consuming, and they may not be able to keep pace with rapidly evolving fields. However, they have enabled apprenticeship programs to expand more rapidly than otherwise might have been possible.

In the US, past efforts to create nationally-adopted occupational standards have not achieved a similar level of success. Some speculate that it is because of American entrepreneurship and individualism that efforts to create broadly adopted national occupational standards have been largely unsuccessful. We are a big country and it is hard to gain consensus on practically any issue! Perhaps it is the lack of funding programs designed to award adoption of the standards that make businesses and postsecondary institutions reluctant to play along. Or maybe, it was the lack of a solid plan to implement national standards that left those developed in the past gathering dust on the shelf.

Regardless of why, the lack of national standards has created a significant barrier to entry for employers who want to start new apprenticeship programs or expand their current programs into new occupations. In the absence of national standards, the US has approved thousands of individual, employer-sponsored apprenticeship programs, but the public has very little information about their content, consistency or rigor. This lack of detail makes it difficult for apprentices, employers and government officials to distinguish between high and lower quality programs, to ensure consistency among apprenticeships in a given field or occupation, or to get new programs started since each employer is essentially reinventing the same wheel.

Without a normative tool, it is takes too long to develop and approve new apprenticeship programs and it is hard to gain public confidence in apprenticeship as a credible form of workforce education and training. Therefore, the lack of national standards may have impeded the growth of registered apprenticeship programs in the US and certainly has led to a fragmented system that can be difficult for new employers and would-be apprentices to navigate.

U.S. National Occupational Frameworks

In order to solve some of the inefficiencies and challenges created by the lack of national occupational standards, while at the same time avoiding the contentious challenges associated with creating

mandatory standards, the US Department of Labor (DOL) has found a very practical and effective middle ground through the use of **voluntary** National Occupational Frameworks (NOFs). DOL has contracted the Urban Institute to provide technical assistance in the development of these frameworks in a number of key occupations.

No employer is required to use these frameworks when designing their apprenticeship program. However, for those sponsors and employers who do embrace the frameworks as a vetted point of reference, not only will it be quicker and easier for sponsors and employers to develop their program, but the DOL's Office of Apprenticeship staff will expedite the review of that employer or sponsor's registration application. While State Approving Agencies have not yet adopted the National Occupational Frameworks, we hope they will see the benefits of this effort and consider an expedited approval process for programs that adhere to them.

The frameworks capture the consensus opinion of a representative group of employers, subject matter experts and expert workers regarding the key job functions and competencies an individual would need to demonstrate in order to be successful in a given occupation, as well as the underlying knowledge and skills deemed critical to the development of those competencies. Individual employers using the frameworks retain the right to modify them to meet their unique needs, so the NOF should be viewed as a starting point rather than a mandate.

The National Occupational Frameworks draw from a number of resources, including O*Net, the Competency Model Clearinghouse, existing apprenticeship Work Process Schedules, international apprenticeship standards, occupational overviews prepared by trade and labor organizations and content guidelines developed by third-party certification bodies. The most important part of Urban Institute's framework development process, though, is the work done with employers and expert workers to develop and vet the NOFs to ensure that they meet current labor market expectations. While the NOFs are designed for use in competency-based apprenticeships, they could well be used to develop and implement time-based or hybrid apprenticeships or to guide the development of other types of vocational education and training programs.

Components of a National Occupational Framework (NOF)

The NOF is designed to provide information that meets the needs of a range of audiences, including potential apprentices, human resources managers, executive leadership teams, front-line managers, instructors and mentors. A blank NOF template as well as a completed NOF for Medical Assistant are included in Appendix A for illustrative purposes. Appendix B includes screen shots of the NOF in the more user-friendly web-based format (http://innovativeapprenticeship.org/us-apprenticeships).

The framework is organized into three main sections: 1) **Occupational Overview**; 2) **Cross-Cutting Competencies**; and 3) **Job Functions and Competencies**. The purpose of each section is explained below.

Section I: Occupational Overview Section

The Occupational Overview section of the National Occupational Framework *provides a summary of the occupation so that viewers can quickly understand what the job entails, the context and setting in which this work is typically performed, the career pathway available to individuals in the occupation, the median earnings (of all workers in the occupation), the number of people who are employed in the occupation in the US and the projected job growth over a 10 year period. It is mainly derived from information provided in O*NET and by the US Bureau of Labor Statistics, but it may also include relevant research findings from educators, trade associations and labor organizations, where available.* The specific elements of the overview are described below:

A. **Occupation Title and other Potential Job Titles used to identify the occupation** – The occupational title identifies the specific job role for which the apprentice is being trained. It is important to use nomenclature that describes a particular job, as opposed to using a title that describes an occupational field, which may include numerous jobs performed at varies levels of expertise and autonomy. An occupation and a job are not the same thing. The International Labor Office defines an occupation as "a set of jobs whose main tasks and duties are characterized by a high degree of similarity." In other words, *jobs* are specific to individual employers whereas *occupations* apply to the industry as a whole.   In cases where a number of different job titles are used to describe essentially the same occupation, all of those titles are listed in the NOF to ensure that the framework can be used broadly.

   For example, in the Occupational Framework for Medical Assistant (included in Appendix A), the Occupational Title is not a generic term like allied health or medical support staff because a number of different occupations are included within those fields. Allied health could include medical assistants, nursing assistants, nurses, physical therapists, occupational therapists and a single occupational framework would not support all of those jobs. Instead, the NOF would be designed specifically for a job called Medical Assistant, as opposed to a field called Allied Health.

   A Note about Occupational Titles:

   Wherever possible, Occupation Titles listed in O*NET should be used to identify the occupation for which the apprentice will be trained. In some cases, however, satisfactory Occupation Titles might not be found in O*NET, SOC or RAPIDS. There may be two reasons for this:

   1. The occupation may be niche or highly specialized with few people employed with that job title; or
   2. The occupation has recently emerged, and government statistical bodies have not yet included it in their classification system.

   In the first case, a National Occupational Framework may not be warranted if the size of the workforce is small and only a few employers recognize the occupation. An apprenticeship program could still be developed for this occupation by individual employers or sponsors, but a national occupational framework may not be relevant.

   In the second case, framework developers should carefully consider whether this is a genuinely new occupation or simply a new title for an existing occupation. If the later is the case, amending an existing occupational framework to add the new title may be the best way to proceed.

B. **O*NET Code** –O*NET (Occupational Training Network) is the Employment and Training Administration's classification system used to help individuals understand what its like to work in a particular occupation. It is an 8-digit number that includes a two digit extension of the 6-digit Standard Occupational Code (SOC). SOC codes are created by the Bureau of Labor Statistics to facilitate statistical analysis of occupational trends and conditions. SOC codes can be found at https://www.bls.gov/Oes/current/oes_stru.htm/   O*NET codes can be found at: http://www.onetonline.org

For example, Medical Assistant is identified by the O*NET code 31-9092.00. The first two digits of the 8 digit code (31-0000) indicate that medical assistant is within the SOC category of Healthcare Support Occupations   The next numbers (XX- 909X) are also part of the SOC code and indicate that the occupation occurs within a job cluster called Miscellaneous Healthcare Support Occupations. The final digit (XX-XXX2) identifies the specific job called Medical Assistant. If the ETA wished to differentiate between medical assistants based on the type of care providers they support – such as chiropractors, podiatrists, or medical doctors- the agency could use the two digits after the decimal point to do so. An example of an ONET code that includes the final two digits would be patient care representative (43-4051.03) which is a specific kind of customer service representatives (43-4051.00).

C. **RAPIDS Code** – The Registered Apprenticeship Partners Information Data System (RAPIDS) is the occupational coding system utilized by the DOL Office of Apprenticeship to track the progress and performance of individuals in apprenticeships in a given field. These codes can be found at: https://www.doleta.gov/oa/occupations.cfm
For example, the RAPIDS code for Medical Assistant is 0185.

D. **Occupational Context** – This section describes the occupational settings or environment in which a person in this occupation works, the hierarchy of this position relative to others in the workplace, the scope or limits of occupational practice and the kinds of organizations that hire individuals in this occupation.
Example: Medical Assistants work in medical offices and outpatient care centers, including urgent care centers and surgical centers. They work with a range of licensed health care and allied health care providers, including doctors, optometrists, podiatrists, chiropractors, nurse practitioners, physician's assistants, nurses, radiology technicians, respiratory therapists and office support staff (such as clerical office staff). Medical assistants can work in small medical practices that employ only the physician and a single medical assistant, or they can work in larger medical practices and outpatient care centers (including those affiliated with hospitals).

E. **Occupational Purpose** – This section describes the overall role and the contribution those in the occupation are expected to make.

Example: Medical Assistants work with licensed medical care providers in medical offices or other outpatient centers to maintain office records and equipment, schedule and participate in the examination and treatment of patients, performing basic diagnostic tests or medical procedures as allowed by state and federal law, and providing patient education and follow-up support.

F. **Occupational Pathways** – This section describes the possible career pathway for someone who completes an apprenticeship in this field and aspires to move to higher level positions or occupations over time. If mobility through the pathway requires additional training or education, those requirements are noted in this section.
Example: Medical assistants who complete additional postsecondary education (in some cases including an associate or bachelor's degree and completing licensure or certification exams) can move into higher-level health professions, such as practical nurse, registered nurse or other allied health professionals, such as radiology technician or ultrasound technician.

G. **Attitudes and Behaviors** – This section describes the personal characteristics deemed important for success in the occupation. It is important when describing attitudes and behaviors to use language that is not gender exclusive or gender biased, while at the same time being honest about attributes that lead to success.
For example: Medical assistants must be patient, caring, non-judgmental, empathetic individuals who can build trust and maintain confidentiality. They must pay attention to details and be able to follow procedures with fidelity.

H. **Certification and Licensure** – This section lists certifications or licenses available to or required of workers in the occupation.
Example: Certified Medical Assistant; Registered Medical Assistant, Certified Clinical Medical Assistant, Certified Medical Office Assistant.

I. **Awarding Body** – an organization independent of the employer that issues each certification or license listed in H.
Example: Certified Medical Assistant (CMA) – offered by the American Association of Medical Assistants but only to individuals who graduated from an ABHES or CAHEEP accredited program.

Registered Medical Assistant (RMA)– offered by the American Medical Technologists to those who completed an accredited academic program or to those who have worked as a medical assistant for at least 5 years.

Certified Clinical Medical Assistant (CCMA)– offered by the National Healthcare Association to those who have a high school diploma and have completed a training program or one year of work experience

Certified Medical Office Assistant (CMOA) – offered by the National Center for Competency Testing to those who are in or have graduated from a medical assistant academic program or those who have worked for at least one year on a full-time basis, or those who completed a training program during U.S. Military service within the past five years.

National Certified Medical Assistant (NCMA) – offered through the National Center for Competency Testing to those who completed a medical assisting program or other form of training (such as apprenticeship) and worked for at least two years in the field.

Podiatric Medical Assistants (PMAC) – offered by the American Society of Podiatric Medical Assistants to those who have been a member of the Society for 90 days and have been employed in a podiatry office.

Certified Ophthalmology Assistant (COA) – offered by Joint Commission on Allied Health Personnel in Ophthalmology

Trade Associations and Labor Organizations – organizations that represents the interests of an industry or its employees and that can provide additional information about the occupation, its requirements and its future outlook.

Example: Medical Assistants are considered members of the organizations from which they receive their registration or certification, so some may be included on the American Registry of Medical Assistants while others may be members of the American Association of Medical Assistants. Some medical assistants may be trained and/or represented by the Service Employees International Union, depending upon the state and type of facility in which they work. For example, in 2016 the State Personnel Board of SEIU Local 1000 (California) approved the creation of a Medical Assistant classification for those medical assistants employed in state civil service.

J. **Size of Current Workforce** – an estimate of the number of workers currently in the occupation, as determined by the Bureau of Labor Statistics (http://www.bls.gov/OOH/) or another reliable source (such as a trade association). Note that in some instances, BLS statistics include groups of occupations in a related field and may not accurately reflect the total number of workers in a specific job role.
Example: The medical assistant workforce includes 591,300 individuals.

K. **Number of Additional Job Openings Predicted** (2014-2024) – employment predictions made by the Bureau of Labor Statistics (http://www.bls.gov/OOH/) that signal potential labor shortfalls or surpluses.
Example: 26,210 additional job openings are predicted for medical assisting by 2024.

L. **Median Salary or Salary Range** – provides information about likely earnings for individuals in this occupation, typically based on Bureau of Labor Statistics (http://www.bls.gov/OOH/) data, trade association data, or economics data. Median data typically represent the earnings of all workers in the occupation and not just new, entry-level workers.
Example: Median salary for medical assistants is $29,960

M. **Job Functions** – lists the main job functions that someone in the occupation would be expected to perform. Job functions identified in the framework as optional or advanced were identified by some employers as being important to the occupation, but by others as being outside of the scope of the jobs at their company.

Example: Medical assistants execute the following job functions:

Job Function 1. Communicate with others to collect, share, record and report information properly.

Job Function 2. Manage "front end" of medical office.

Job Function 3. Assist medical professional and patients during examinations and procedures.

Job Function 4: Carry out basic medical procedures

Job Function 5: Collect and prepare samples for analysis.

Section II: Cross-Cutting Competencies Section

This section of the framework considers the level of foundational skills– often times referred to as "soft skills" – required for the occupation. Developed by the US Department of Labor as part of their Competency Model Clearinghouse, these cross-cutting skills are organized into three categories: 1) Personal Effectiveness; 2) Academic; and 3) General Workplace. This section may be helpful to those designing pre-apprenticeship programs, to employers preparing to screen and select apprenticeship candidates and to potential apprentices who want to know if a particular occupation is a good fit for them.

This section of the framework is based on the content of the Competency Model Clearinghouse. To view the definitions for each competency, go to the Competency Model Clearing House Building Blocks Model and mouse over each work appearing in the pyramid. https://www.careeronestop.org/CompetencyModel/competency-models/building-blocks-model.aspx

In order to acknowledge that the importance of a given cross-cutting competency or the level at which the employee would be expected to perform may differ from one occupation to the next, or one level to the next, we have adopted the 8 point scoring system developed for the Lumina Connecting Credentials project. https://www.luminafoundation.org/files/resources/connecting-credentials.pdf

In general, most apprenticeships would expect the individual to demonstrate competencies between level 1 and level 4, although in rare cases longer or more advanced apprenticeships could require higher degrees of mastery.

LUMINA CONNECTING CREDENTIALS SCORE LEVELS

Level 1	Level 2	Level 3	Level 4	Level 5
Demonstrates achievement of fundamental competencies to complete narrow and limited tasks within a highly structured field of study or work under direct supervision or guidance	Demonstrates achievement of fundamental competencies to complete technical, routine tasks within a structured field of study or work largely subject to overall direction or guidance.	Demonstrates competencies for processing well-defined technical tasks that are less structured and include non-routine tasks. These tasks have some degree of complexity, assigned within a comprehensive field of study or occupational activity subject to some change and largely subject to overall supervision or guidance.	Demonstrates competencies for the processing of specialized and complex tasks within a comprehensive field of student or an occupational environment that is subject to change. This requires theoretical knowledge and practical skills to select appropriate principles and procedures and may involve overall supervision.	Demonstrates advanced competencies for the processing of comprehensive tasks assigned within a complex and specialized field of study or occupational activity subject to change. This requires the ability to select and apply appropriate theoretical knowledge and practical skills to perform technical tasks in a braod range of contexts.

Personal Effectiveness includes competencies such as:

- Interpersonal skills
- Integrity
- Professionalism
- Initiative
- Dependability & Reliability
- Adaptability & Flexibility
- Lifelong Learning

Academic Competencies include:

- Reading
- Writing
- Mathematics
- Science & Technology
- Communication
- Critical & Analytical Thinking
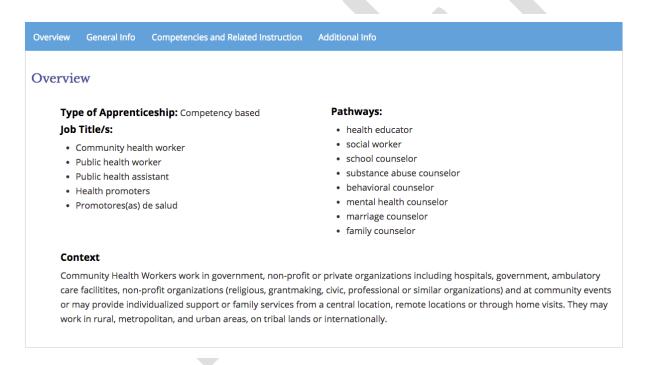- Basic Computer Skills

Workplace Competencies include:

- Teamwork
- Customer Focus
- Planning & Organization

- Creative Thinking
- Problem Solving & Decision Makingg
- Checking, Examining and Recording
- Business Fundamentals
- Sustainable Practices
- Health & Safety

Section III: Job Functions and Competencies Section

This section is what many consider to be the "meat" of the framework because it includes the information that will help an employer or sponsor design a program and prepare a Work Process Schedule. In this section, the viewer can find more detail about the job functions and competencies an apprentice must be able to carry out by the end of their program. In addition, it outlines the underlying knowledge, skills, tools and technologies that would likely be included in the Related Technical Instruction (RTI) that is a required component of every apprenticeship. The following description is based on the Excel spreadsheet version of a National Occupational Framework. The web version of the framework has a more intuitive design.

Overview	General Info	Competencies and Related Instruction	Additional Info

Overview

Type of Apprenticeship: Competency based

Job Title/s:

- Community health worker
- Public health worker
- Public health assistant
- Health promoters
- Promotores(as) de salud

Pathways:

- health educator
- social worker
- school counselor
- substance abuse counselor
- behavioral counselor
- mental health counselor
- marriage counselor
- family counselor

Context

Community Health Workers work in government, non-profit or private organizations including hospitals, government, ambulatory care facilitites, non-profit organizations (religious, grantmaking, civic, professional or similar organizations) and at community events or may provide individualized support or family services from a central location, remote locations or through home visits. They may work in rural, metropolitan, and urban areas, on tribal lands or internationally.

Certifications and Foundational Instruction Tab

This section of the framework provides information about certifications and foundational coursework that may be relevant to an occupation and that an employee may be required to have in order to work in the field, but are not tied to any specific job function. For example, medical assistants who wish to be able to perform venipuncture procedures might be required to earn a phlebotomy certificate, which may or may not be part of the apprenticeship program. Similarly, a bus or truck mechanic may be required to obtain a commercial driver's license prior to beginning their apprenticeship. Many apprenticeship programs require their apprentices to take basic safety or first aid courses prior to

beginning the apprenticeship, to participate in a formal orientation or to take classes that instruct apprentices in the care and use of basic tools. In this case, the employers and expert workers who participated in developing the framework may have indicated that specific courses be included in the apprenticeship requirements as a stand-along requirement in addition to the more general related technical instruction recommendations. Those courses would be listed in this tab.

Overview	General Info	Competencies and Related Instruction	Additional Info	

Additional Info

Certifications or Licensures:

- Certified Health Education Specialist (CHES) (Certification)
- CPR (Certification)
- First aid (Certification)

Accrediting Organizations:

- National Commission for Health Education Credentialing

Trade Associations and Labor Organizations:

- American Public Health Association
- C3 Project (info@c3project.org)

Regulatory Agencies:

- State boards of health
- State boards of nursing
- State boards of human services
- Centers for Disease Control and Prevention

Work Process Schedule

The Work Process Schedule is the overall training and learning plan that the Department of Labor or a State Apprenticeship Agency must approve as part of the registered apprenticeship application (the entire application is called the Apprenticeship Standard and, in addition to the Work Process Schedule, includes the sponsor's plans for wage progression, for increasing diversity and specifies the number of apprentices that can be supervised by an expert worker or mentor). For a competency-based program, the Work Process Schedule includes all of the job functions and competencies an apprentice must demonstrate in order to complete the program. In a time-based apprenticeship program, the Work Process Schedule states how many hours that apprentice will spend on the job and in the classroom in order to complete the program. In a hybrid program, the employer may require the demonstration of

competencies to complete some elements of the program, and the completion of a certain number of hours in order to meet other requirements.

Because a National Occupational Framework describes an occupation rather than a specific job at a specific company, an individual employer or sponsor may need to customize the work they derive from the NOF in order to describe the actual job for which the apprentice is being trained. As a point of reference, an **occupation** refers to a category of employees in an industry and the general duties they perform, whereas a **job** describes the position held by a person and is both specific and aligned with the needs of the organization. Because programs aligned with the NOF receive expedited review by DOL, as a general rule, a WPS that is approximately 80% consistent with the Occupational Framework is eligible for expedited review. Said another way, approximately 20% of the WPS and program can depart from the NOF in order to meet the unique needs of the sponsor or employer.

Note that in developing some NOFs, employers and expert workers identified some job functions or competencies as core, meaning that any apprenticeship should include those elements and they should not be eliminated, even if doing so falls within the 20% allowance. Job functions and competencies fundamental to an occupation may not be eliminated. On the other hand, some job functions or competencies may have been identified as optional or advanced, meaning that some employers may consider them critical to a job while others would not. Eliminating optional or advanced job functions or competencies does not count against the 20% allowance for customization.

The Work Process Schedule must also provide information about how the sponsor will help apprentices develop competency in the occupation through both on-the-job training (OJT) and related technical instruction (RTI). Because the way in which a sponsor delivers RTI may vary widely – with some sponsors relying on partnerships with career and community colleges, others relying on trade associations and still others developing in house education programs – the National Occupational Frameworks do not specify how RTI must be delivered. Instead, the NOFs provide high-level recommendations regarding the knowledge, skills, tools and technologies that would likely be taught during the recommended 144 (or more) hours of RTI and it is up to the sponsor to explain how that RTI will be delivered.

Job Functions and Competencies

In a competency-based apprenticeship program, an individual's progress and completion is measured through his or her ability to demonstrate the competencies necessary to execute the required job functions. It is important to understand that being competent in a job function requires more than just the sum total of the skills an individual can demonstrate. A person could show an understanding of the theory behind a competency, and could demonstrate an ability to perform a skill; however, this person may not be "competent" in the job function if he or she can't figure out which of the skills she has mastered should be applied to execute a particular duty. Similarly, if the individual can execute the tasks flawlessly, but takes twice as long as the employer can afford in order to do the work, or doesn't select the least costly or most effective choice among a variety of options, he or she may not be considered by an employer to be competent. And if the employee can't perform the job in adherence to the culture, norms and policies of the company, he or she is not considered to be competent.

This is where there is a significant departure between competency-based education, which typically evaluates knowledge and skills in a one-by-one fashion or through a carefully contrived simulation, and a competency-based apprenticeship, which requires the individual to perform the function while also navigating the myriad complexities and demands of the work environment.

While the job functions and competencies are listed in the Work Process Schedule, the NOF also contains individual tabs for each job function where additional information is provided. In addition to the job function and related competencies, these tabs also summarize the Related Instruction that is associated with that function (in other words, the underlying knowledge, skills and tools required to develop competency) as well as the performance criteria (or performance objectives) that can be used to differentiate between a minimally, moderately or highly competent apprentice. Employers and sponsors are not required to adopt the performance criteria included in the frameworks as these are merely suggestions put forth by experts in the field. Note that not all frameworks include performance criteria.

Because employers may structure jobs differently based on the size of their organization, its unique business model or other factors, many NOFs will include job functions identified as being optional versus core or beginning, intermediate or advanced. When designing their own apprenticeship programs, employers may elect to omit optional, intermediate or advanced job functions or competencies if they are not relevant to the job for which the apprentice is being trained. Optional or intermediate and advanced functions and competencies that are omitted do not count against the 20% variance allowed.

Related Technical Instruction includes:
- Knowledge – the underlying concepts, theories, facts, guidelines or instructions that provide context for a job function and enable critical thinking and problem solving
- Skills – the actions, activities and processes that must be learned by the apprentice in order to be able to execute the job function
- Tools & Technologies – the specialized equipment that is necessary to perform the job function, to meet health and safety requirements, to achieve sustainability goals and to assess the work product.

In general, it is up to the employer to determine how the related technical instruction will be provided, including in what format, by whom and where. Related Technical Instruction can take place in a classroom or at the job site, can be delivered by a community college instructor or an in-house expert worker, and through real-time or online delivery modalities. We have not designed these NOFs to align with the course titles and descriptions typically offered by a postsecondary institution, although an employer could elect to partner with an accredited institution and meet the RTI requirements through apprentice enrollment in existing courses. However, the sponsor could also design mini-courses that ensure precise coordination between what the apprentice is learning in the classroom and performing on the job at any moment in time, in which case the RTI might be delivered in modules rather than complete courses. The goal of our work was to identify the key components of RTI, but leave it up to the sponsor and the RTI provider to determine how those components will be delivered.

The NOF does not aggregate the recommended knowledge and skills elements into a single list, but instead links the knowledge, skills, tools & technologies to the job function for which they are

needed. Not only will this enable sponsors to better align the RTI with the OJT, thereby ensuring that the apprentice has an opportunity to apply what she is learning in class immediately to her OJT activities, but it also enables the employer or apprentice to progress through the apprenticeship in the order that is best for the individual or organization. Because we have designed frameworks intended for use in competency-based programs, which allow apprentices to get credit for competencies that they may have developed during prior work experience or education, we linked RTI and OJT elements so that if an individual gets credit for the function, he or she may also be exempted from the correlating RTI. Linking RTI and OJT objectives also enables individual students or cohorts of students within a single organization to start their program and progress through it in different sequences, which may be necessary if there are limitations on how many apprentices can be in one part of the job site or working with a particular piece of equipment at any given time. For competency-based programs, the "just in time" learning model may be more practical than the traditional linear instruction model where everyone must learn the same things at the same pace.

Competencies and Performance Objectives

Because employers pay employees to fulfill job functions, it is critically important to emphasize to potential employers or sponsors that by supporting an apprenticeship, they aren't just enabling the individual to accumulate a laundry list of skills, but instead are preparing an individual to do the job needed, in the time and manner deemed acceptable to the employer, in accordance with the employer's organizational policies and priorities, using materials and at a cost appropriate to the job, and in accordance with workplace norms. Therefore, the NOFs are organized by job functions which are, in turn, supported by the individual competencies required to execute the job accurately and effectively. Doing a job well requires so much more than learning a list of facts or completing a list of tasks. Therefore, NOFs use nomenclature that focuses not on how competencies are learned or gained, but instead on how they are applied to perform a job activity.

In order to help bridge the gap between traditional nomenclature and the lexicon of competency-based learning, the following table illustrates the hierarchy of NOF components and identifies the term used in a time-based program to describe that component.

Job Function (Duties)
Competency (Task)
Perf. Objective (Sub-task)
Competency
Perf. Objective
Competency
Perf. Objective

There are no limits to the number of job functions associated with an occupation, the number of competencies associated with each job function, and the number of performance objectives associated with each competency. However, a general guideline for a 2000-3000 hour program would include 7 to 15 job functions, 5 to 8 competencies per job function, and 4 to 6 performance objectives per competency. Of course, this is just a guideline. Highly technical occupations using sophisticated

equipment or mechanical systems may include many more job functions, competencies and performance objectives, especially if the equipment used comes from multiple vendors or there are complex equipment maintenance and repair responsibilities involve.
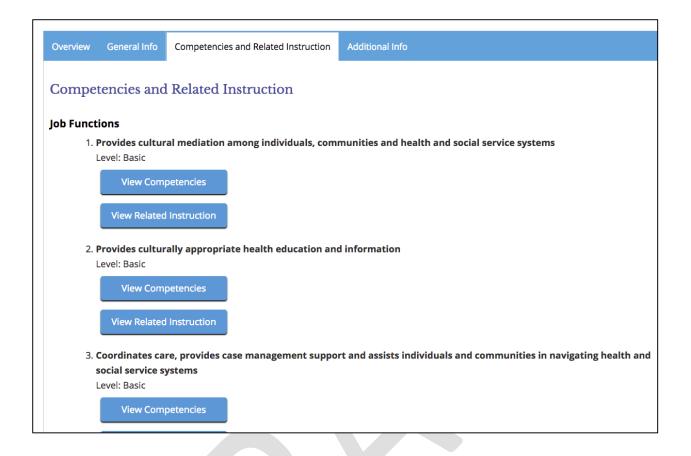
A note about competencies: competencies describe things that an apprentice should be able to do and therefore must be written in the form of:

- Active verb (e.g. *support*)
- Object (e.g. *medical professionals*)
- Sometimes, but not always, a condition is added (e.g. *during examinations and procedures*) for the purposes of clarity

Competency statements should not begin with the words *understands*, *describes*, or *explains,* except when the job function involves convey information to or teaching others. Statements that begin with one of these words are learning objectives rather than competencies.

Using the Medical Assistant NOF in Appendix A, the Job functions identified include:

1. Manage the 'front end' of the medical office
2. Support medical professionals and patients during examinations and procedures
3. Carry out basic medical procedures
4. Collect and prepare samples for analysis
5. Carry out basic maintenance of equipment
6. Communicate with others

Listed under each job function are the competencies associated with that function.

Listed under each competency are the performance criteria associated with each competency.

Associated with each job function are the RTI topics that provide the theoretical and technical foundation upon which the competencies are built.

USING AN OCCUPATIONAL FRAMEWORK

Occupational frameworks are intended to assist or guide apprenticeship sponsors, intermediaries and related instruction providers in developing apprenticeship programs and the related Work Process Schedules. Similarly, Occupational Frameworks can be utilized by state or federal apprenticeship officials to evaluate a sponsor's Work Process Schedule as part of the review of the sponsor's Apprenticeship Standards (the registration application). However, the use of Occupational Frameworks is voluntary. The benefit of the occupational frameworks is that they have already been reviewed and vetted by a group of industry representatives who agree that the job functions and competencies listed do, indeed, represent the work done by a person in a given occupation.   Therefore, when a sponsor submits a work process schedule that is derived from a National Occupational Framework, it need not be subjected to additional internal or external review, which can delay program approval by months or years.

Where do I find the National Occupational Frameworks?

Once approved by the US DOL, NOFs are posted on the American Institute for Innovative Apprenticeship (AIIA) website at innovativeapprenticeship.org. Click on the U.S. Apprenticeships tab to find the list of approved NOFs. (http://innovativeapprenticeship.org/us-apprenticeships). The information is digested from the excel spreadsheets described above and displayed in a more user friendly way with tabs for:

- Overview – Potential Job Titles, Pathways and Context
- General Info – ONET and RAPIDS codes, Workforce Data, Occupational Purpose, Attitudes and Behaviors associated with high performance in the occupation, and Cross-Cutting Competencies.
- Competencies and Related Instruction – Job functions, related instruction, competencies and performance criteria.
- Additional Information – Certifications and Licensure, Accrediting Organizations, Trade Associations and Labor Organizations and Regulatory Agencies.

Expedited Review, Safe Harbor and the 80/20 Rule

Since occupational frameworks are developed through a peer review process that includes employers, expert workers, subject matter experts, educators, trade associations, labor organizations and licensing bodies, they meet the requirements of 29 CFR Part 29 (which requires industry consensus that an occupation is, indeed, apprenticeable) prior to being made publicly available. As such, Work Process Schedules that align with the relevant National Occupational Frameworks receive a "safe harbor" expedited approval since the framework has already been reviewed and vetted.

It is important to note that the Occupational Frameworks have been designed to satisfy the requirements of the Federal Registered Apprenticeship program. Although the Occupational Frameworks serve as a valid guide to preparing individuals for a given occupation, regardless of whether they are prepared through an apprenticeship, a vocational training program or other means, they may not qualify a program sponsor for expedited review by a State Apprenticeship Agency.

Frequently Asked Questions:

Are all apprenticeship sponsors required to develop programs that are in complete alignment with the National Occupational Framework?

No – apprenticeship sponsors retain the ability to customize their program to meet their unique needs. National Occupational Frameworks should be considered as a foundation upon which a sponsor's apprenticeship program may be built, with each sponsor retaining the ability to customize the program to meet its unique needs.

How much flexibility does an apprenticeship sponsor have in developing a Work Process Schedule that meets its unique needs and yet still qualifies for safe harbor, expedited review?

A sponsor's individual Work Process Schedule should include approximately 80 percent of the job functions and competencies outlined in the National Occupational Framework in order to qualify for the safe-harbor, expedited review.   This means that the sponsor can customize the program by adding or

subtracting 20 percent of the content of the National Occupational Framework and still qualify for expedited review.

That said, if there are job functions and/or competencies identified by industry as essential to the occupation, the sponsor cannot eliminate those job functions or competencies and still qualify for expedited review. Those job functions and/or competencies are designated in the National Occupational Framework as "core" job functions and must be included in the Work Process Schedule.

Similarly, in some cases the industry representatives who participated in the development and vetting of National Occupational Frameworks identified some job functions or competencies as "optional" or "advanced" meaning that some but not all employers might include these in their Work Process Schedule. Any job function or competency identified as optional or advanced should not be included in the determination of the 80 percent alignment. In other words, an employer can eliminate all of the optional or advanced job functions or competencies and still be 100 percent in alignment with the National Occupational Framework.

How does a sponsor, intermediary or apprenticeship official use the National Occupational Framework to help an organization develop or design a program?

Ultimately, the job functions and competencies listed in the National Occupational Frameworks will populate pull-down menus in the U.S. Department of Labor's Standards Builder. This means that when designing their Work Process Schedule, a sponsor will be able to simply select among a list of job functions and competencies that display on a pull-down menu to build a program that meets the sponsor's needs.

Until the pull-down menus are constructed in Standards Builder, Work Process Schedules designed in alignment with National Occupational Frameworks can be uploaded from the Excel files posted on the innovativeapprenticeship.org website (http://innovativeapprenticeship.org/us-apprenticeships) and modified to meet the sponsor's needs.

Where can I find other DOL approved Work Process Schedules or international standards?

In addition to the National Occupational Framework, the AIIA website also contains all of the Work Process Schedules (WPS) that reside in the Department of Labor's "Drop Box," thus enabling a sponsor or intermediary to view any work process schedule that has been approved by the Department of Labor for a given occupation.   To access WPS that have been approved by DOL, click on the U.S. Apprenticeships tab, scroll down to U.S Civilian Standards, then click on the occupation of interest. (http://aiia.staging.wpengine.com/approved-us-apprenticeships/)

The AIIA website also includes an assortment of apprenticeships standards from Canada, the United Kingdom, Australia, Germany and Switzerland. Click on the International Standards tab, scroll down to the occupational field of interest, mouse over the flag of the country of interest, click on the occupation name.

How are Occupational Frameworks useful to Office of Apprenticeship and State Apprenticeship Agencies?

 As apprenticeship expands to new fields and occupations, it might be difficult for federal and state officials to evaluate the quality and adequacy of the related Work Process Schedules since doing so

requires a reasonable understanding of the occupation. The Occupational Framework serves as a useful reference because it is created and vetted by groups of employers, expert workers and subject matter experts who are deeply knowledgeable about the occupation.

The National Occupational Framework describes the job functions and competencies that an apprentice should be able to demonstrate by the end of the program. In addition, the NOF outlines the underlying knowledge and skills necessary to develop competency, thereby providing guidance for the related technical instruction component of the apprenticeship. While the framework does not specify how the related instruction should be provided, as this will vary substantially from one related instruction provider to the next, it does provide guidance about the learning objectives that should be met through the related instruction, thus enabling a careful evaluation of the proposed program.

Does the NOF also include time requirements?

The NOFs are outcomes-driven documents that delineate what an apprentice should be able to do, regardless of how long it takes the individual to learn how to do it. Therefore, the NOFs include time requirements only when those of relevant to the industry or the licensing process (such as motor coach operators who must complete a certain number of hours behind the wheel in order to be licensed to operate the bus).

That said, because of statutory requirements, competency-based programs must still meet the 2000 hour minimum in order to qualify as a registered apprenticeship program. According to DOL regulations, an individual with prior experience could complete a 2000 hour program in less than 2000 hours, but never in less than 1000 hours.

How does the sponsor develop a Related Technical Instruction (RTI) program using the NOF?

The NOFs include a tab under each job function that outlines the recommended elements of RTI associated with that job function. How an individual sponsor or RTI provider structures their courses remains their prerogative, but the Work Process Schedule should indicate which of the listed knowledge, skills, tools & technologies will be included in the RTI program and in what courses or learning modules provided.

Appendix A: Medical Assistant Framework

Occupation: Medical Assistant	ONET Code 31-9092.00
	RAPIDS Code 1085

OCCUPATIONAL OVERVIEW
Potential Job Titles: Certified Medical Assistant, Chiropractor Assistant, Clinical Assistant, Doctor's Assistant, Medical Assistant, Medical Office Assistant, Ophthalmic Technician, Registered Medical Assistant
Occupational Context: Medical Assistants work in medical offices and outpatient care centers, including urgent care centers and surgical centers. They work with a range of licensed health care and allied health care providers, including doctors, optometrists, podiatrists, chiropractors, nurse practitioners, physicians assistants, nurses, radiology technicians, respiratory therapists and office support staff (such as clerical office staff). Medical assistants can work in small medical practices that employ only the physician and a single medical assistant, or they can work in larger medical practices and outpatient care centers (including those affiliated with hospitals).
Occupational Purpose: Work with licensed medical care providers in medical offices or other outpatient centers to maintain office records and equipment, schedule and participate in the examination and treatment of patients, performing basic diagnostic tests or medical procedures as allowed by state and federal law, and providing patient education and follow-up support.
Occupational Pathways: Medical assistants who complete additional postsecondary education (in some cases including an associate or bachelor's degree and completing licensure or certification exams) can move into higher level health professions, such as practical nurse, registered nurse or other allied health professionals, such as radiology technician or ultrasound technician.
Attitudes & Behaviors Medical assistants must be patient, caring, non-judgmental, empathetic individuals who can build trust and maintain confidentiality. They must pay attention to details and be able to follow procedures with fidelity.

Certification or Licensure	Certified	Accrediting Organizations

Medical Assistant Registered Medical Assistant Certified Clinical Medical Assistant Certified Medical Office Assistant		
Large Employers	Trade Associations	Regulatory Agencies State Boards of Nursing (see National Council of State Boards of Nursing)

Size of Current Workforce: 591,300		
Number of additional job openings predicted (2014-2024): 26,210		
Median Salary (2014): $29,960		
Job Function 1: Communicate with others to collect, share, record and report information properly.		
Job Function 2: Manage "front end" of medical office.		
Job Function 3: Assist medical professional and patients during examinations and procedures.		
Job Function 4: Carry out basic medical procedures		
Job Function 5: Collect and prepare samples for analysis.		
Job Function 6:		
Job Function 7:		

Appendix B: Blank Framework

Job Function :	LEVEL	REQUIRED	OPTIONAL
RELATED INSTRUCTION			
Skills			
Knowledge & Understanding			
Tools & Technologies			

Core or Optional	Competency a:			
	Performance Objectives			
Core or Optional	Competency b:			
	Performance Objectives			
Core or	Competency c:			

Optional				
	Performance Objectives			
Core or Optional	Competency d:			
	Performance Objectives			
Core or Optional	Competency e:			
	Performance Objectives			

Core or Optional	Competency f:			
	Performance Objectives			
Core or Optional	Competency g:			
	Performance Objectives			

Core or Optional	Competency h:			
	Performance Objectives			
Core or Optional	Competency i:			
	Performance Objectives			
Core or Optional	Competency j:			
	Performance Objectives			