BRITISH COLUMBIA CENTRE ON SUBSTANCE USE
Networking researchers, educators & care providers

BCCSU Drug Checking
Shadowing Guide for Supervising Technicians

Shadowing, or the act of learning drug checking through on-the-job training, is the best way to quickly and effectively build the skills needed to successfully provide drug checking services. The classroom or online webinar training components provide information on the technological limitations and the basics of drug checking with FTIR and test strips, while shadowing allows trainees to see what drug checking is like on-site, learn how to operate the technologies, and how to interact with people accessing the service.

We have created a framework for how the shadowing component of technician training might be approached by supervising technicians when overseeing new trainees. The framework is broken out into 4 phases, each progressively more hands-on for the trainee. Everyone learns at their own pace and with their own style, so each trainee's shadowing (practicum period) will look slightly different. We have included a recommended number of hours for each phase to provide rough guide of how long it usually takes for trainees to move through that stage of learning. After a trainee has completed the recommended 30 hours of shadowing, they should have all the skills and knowledge they need to pass the practical test.

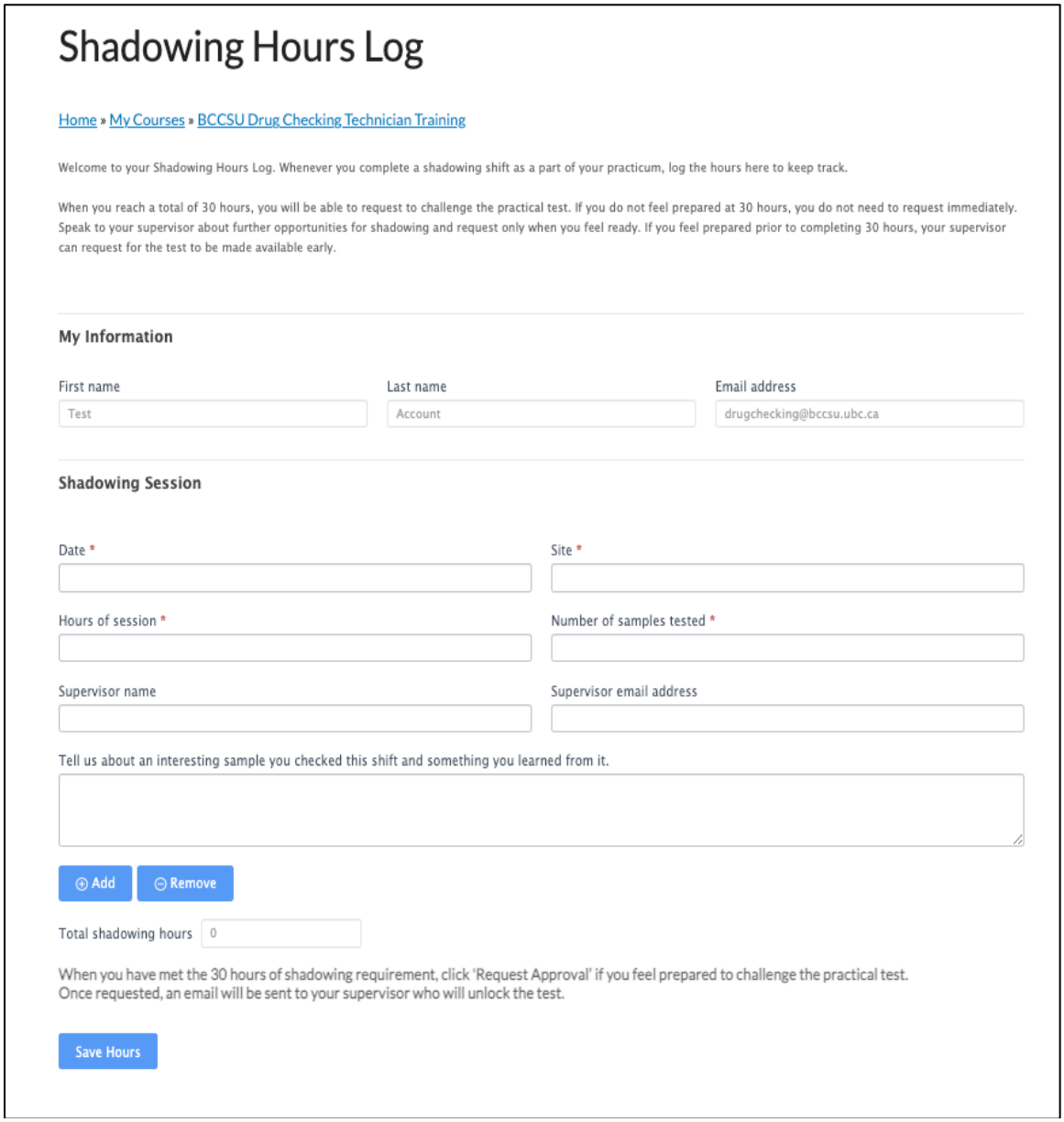
It is important to remember that we are always learning more about drug checking. Staying up to date with the BC Drug Checking Technician Working Group is an important part of ongoing technical skill development. The technician working group usually meets once a month. The group provides a forum for information sharing and problem-solving related to FTIR drug checking and expanding and improving the quality and integrity of FTIR drug checking across sites in BC. All technicians across the province are encouraged to attend and network with other working technicians.

Logging shadowing hours

As a trainee supervisor, please ensure that the trainees are registered with the BCCSU Online Learning Platform and logging their shadowing hours there. Trainees can track their training progress using this link: https://communityofsubstance.org.

How to log shadowing hours

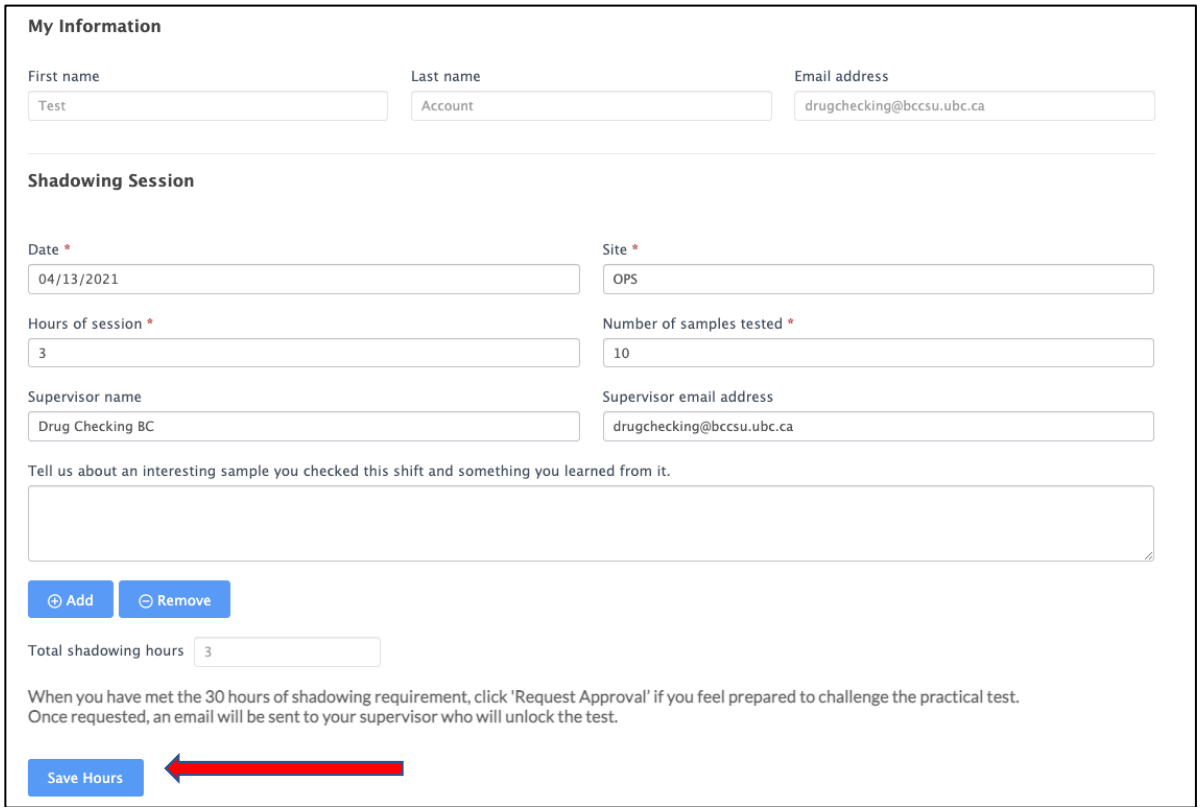
1. This is what the trainee can expect to see when they are ready to start logging their shadowing hours.



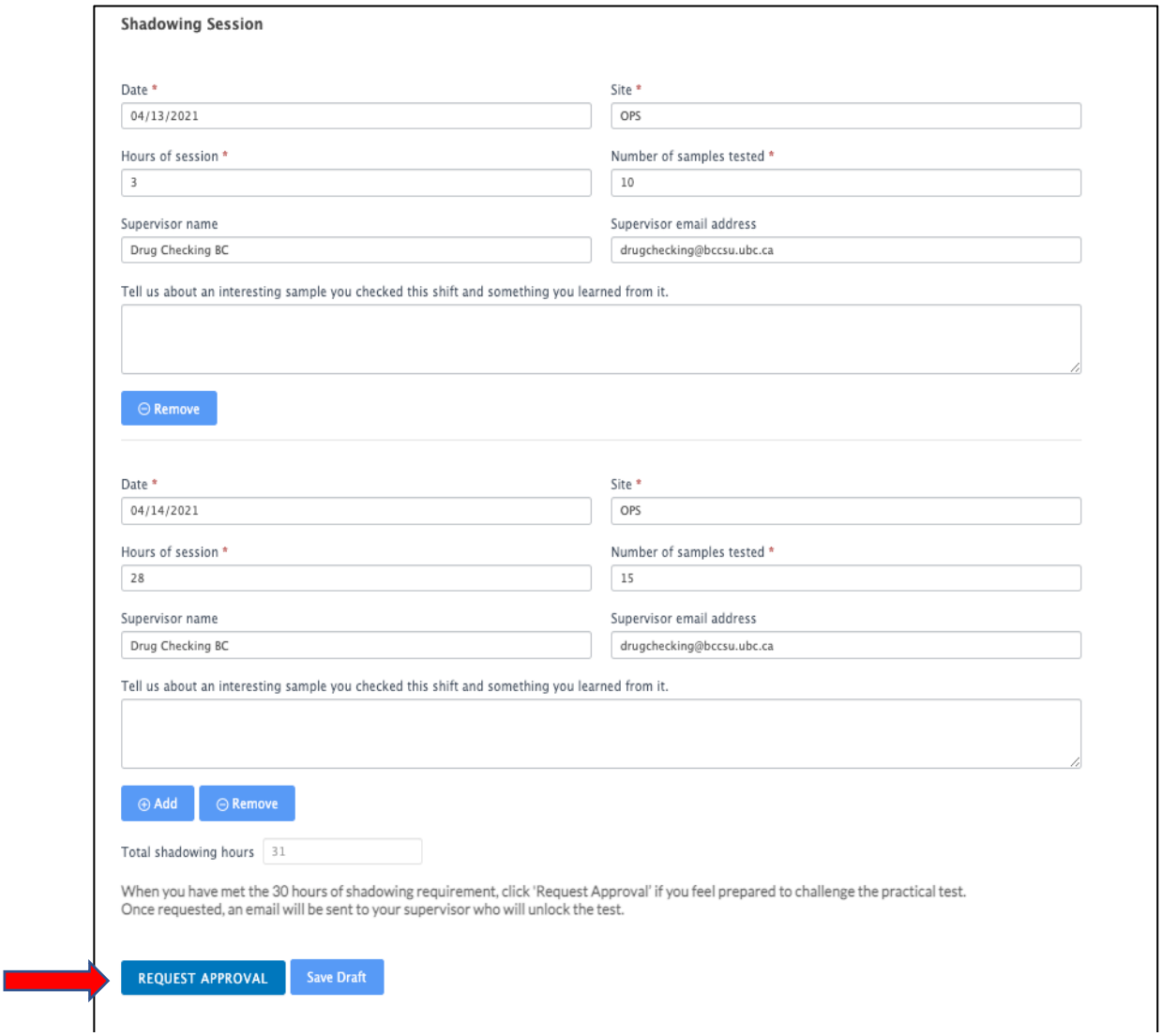
2. There are a number of items that the trainees are expected to complete for each shadowing shift.

   - Shift date
   - Where the shadowing shift took place
   - The number of hours for that shift
   - The supervisor's name and contact
   - A comments box for the trainee to provide details of their shift (optional but recommended)

   Once all of these components are entered, clicking "Save Hours" will complete the entry.



3. The trainee will need to complete a minimum of 30 hours of hands-on shadowing to be eligible for the practical test. The practical test is the final stage to become a drug checking technician. Once someone reaches a total of 30 hours of shadowing, a "request for approval" button will appear on the shadowing log screen, as shown in the picture below. When clicked, an email will get sent to the BCCSU for approval. To approve a trainee to write the practical, contact the BCCSU Drug Checking Team to unlock the practical test from the backend of the platform. When unlocked, the trainee can access the practical test on the Community of Substance platform. Trainees and supervisors can communicate with each other to schedule a time for write the test (30 minutes to one hour).



1. **Over the Shoulder: (approximately 3 hours)**

The first phase of shadowing is about giving the trainee an opportunity to observe how drug checking works at your site. When the trainee is first starting, it is helpful to let them watch 'over your shoulder' to see how you do the work. Some things you will want to ask the trainee to watch for during shadowing include:

- how the samples are received
- how you interact with service users
- how to use the equipment
- how to handle samples
- how to communicate results back to service users

At this stage, trainees may ask questions about your experience of being a technician at your site, as well as communicating results back to service users. Each technician will have different experiences in operating the machines at various locations. It is important for the supervising technician to give the trainee insight into their prospective site and what the trainee can expect from working there, including the regular service users at the site, the service traffic at various hours, and the support available at the site.

Conveying harm reduction messaging/results back to service users is an important part of being a technician, so it is essential for the trainee to learn this skill set from an experienced technician. As a supervising technician, you will want to ask the trainee to observe how you communicate the limitations of drug checking and the results back to the service users, what information is important to provide, and how to respond to questions from service users.

The supervising technician should show the trainee how to unpack the supplies and assemble the FTIR spectrometer correctly. During this training phase, the supervisor can show the trainee how to use the equipment by asking the trainee to observe how to handle samples and highlighting best practices for using the technologies:

- loading a sample onto the FTIR
- cleaning the spectrometer between samples to avoid cross-contamination
- using test strips (fentanyl and benzodiazepine) according to the recommended procedures
- how to pack up, including disassembling the FTIR spectrometer after a drug checking shift

In addition to the technical components to drug checking, it is equally important for the trainee to understand the site-specific culture and site safety and emergency procedures, including the site's COVID safety protocols. The atmosphere at a harm reduction site can be unpredictable so it's important to be prepared. The supervising technician should also share previous experiences on how they interact with service users on a busy day and de-escalate challenging situations if one arises.

By the end of this stage, the trainee should:

- know the site safety and emergency procedures
- know how to handle samples
- know how to unpack the supply kits properly
- begin to gain an understanding of how to interact with service users
- begin to gain an understanding of how to communicate the results back to service users*

*This can look slightly different for each trainee depending on the trainee's learning style/pace.

Further training resources for this stage

a. Harm Reduction 101: https://uphns-hub.ca/wp-content/uploads/2020/08/Harm-Reduction-WEB.pdf
b. Limitations of technologies/potential information: https://drugcheckingbc.ca/wp-content/uploads/sites/2/2020/05/BCCSU-Drug-Checking-Spectrometer-Disclaimer.pdf

2. Co-Pilot: (approximately 3 hours)

Once trainees complete the first stage of shadowing and when they feel ready, they can 'co-pilot' during a drug checking shift with an experienced technician. At this stage, the trainee is an assistant to the technician and is ready to interact with service users. Trainees can complete the first part of the drug checking visit, which would include:

- collecting expected substance information (probing for more details if required)
- collecting the sample and providing to the technician
- explaining some of the limitations of the drug checking technologies
- performing drug checks using test strips (fentanyl and benzodiazepine)

- at the supervising technician's discretion, the trainee can learn how to load samples onto the FTIR and clean the machine once the analysis completed

Point-of-care drug checking results provide valuable information to monitor the local drug supply. It is helpful if the supervising technician can explain why we enter data into the database and why it is important to enter it correctly and accurately. The supervising technician should also demonstrate how to enter the results into the database, as this is an integral part of a drug checking technician role.

By the end of this stage, the trainee should:

- know how to collect sample information from service users
- know how to explain the limitations of drug checking
- know how to perform drug checking using test strips
- know how to load samples onto the FTIR, unload and clean the FTIR
- understand the importance of entering drug checking results into the database

3. Backseat Driver: (approximately 14 hours)

At this stage, the supervisor will let the trainee operate the FTIR and laptop while providing guidance when needed. While operating the instrument, the trainee should be familiarizing themselves with the drug checking workflow with the technician's support. The drug checking workflow starts with interacting with service users to inquire information on the expected substances and explaining the limitation of the drug checking technologies. The trainee will then ask service users to provide a small sample of their drugs for testing using both the FTIR and the test strips. The trainee will load the sample onto the FTIR and perform analyses using the OPUS software. Depending on the site, the supervising technician may choose to plate the sample and do the strip tests for the trainee so the trainee can focus on the machine without getting too overwhelmed. High-traffic sites would benefit from this method during the shadowing process. Once completed, the trainee will enter the data into the DCBC database under their own account. If it is the practice at that site, the trainee will write the results down on a result slip (provided by the BCCSU) to give to service users. During this stage, an experienced technician will always be present to support and answer any questions along the way, as well as step in if there are any potential challenging situations, until the trainee is comfortable managing on their own.

Some people rely on the results to help them make informed decisions on how they choose to use their substances, so it is imperative as a technician to correctly communicate the results back to service users. The supervising technician should

teach the trainee on how to identify the key findings from the FTIR results, decide what to communicate back, and how best to communicate the findings to service users. Below is the standard harm reduction messaging that we recommend for the supervising technician to show the trainee:

- Encourage people to not use alone (sign up for additional tools such as the lifeguard app if available)
- Start with a small amount
- Carry and know how to use naloxone
- Avoid mixing substances which increases your risk of overdose
- Use where help is available whenever possible, like at an overdose prevention site

By the end of this stage, the trainee should:

- Know how to operate the FTIR instrument
- Know the drug checking workflow
- Know how to analyze samples using the OPUS software
- Know how to enter the point-of-care drug checking results into the database
- Know how to communicate findings back to service users, including the provision of relevant harm reduction information

4. Flying solo: (approximately 10 hours)

At this stage, the trainee will be operating the machine independently with minimum oversight from the supervising technician. The supervising technician and the BCCSU will monitor the quality of drug checking results during this stage of training to help identify any potential problems with a sample analysis or areas to improve. This step aims to ensure data accuracy and progress trainee's learning by giving direct feedback if required. During this training phase, the supervisor should be looking for the trainee's ability to independently:

- Interact with service users to collect samples for analysis
- Load and unload samples from the FTIR properly
- Perform drug checking using the FTIR spectrometer and the test strips
- Properly clean the FTIR machine after every test
- Conduct samples analyses on the OPUS software
- Enter point-of-care drug checking results into the database
- Communicate findings back to the service users

By the end of this stage, the site supervisor/the senior drug checking technician will determine if the trainee is ready to write the practical test to become a drug checking technician. This final step can only happen when the trainee meets the minimum 30 shadowing hours requirement or if the supervisor feels confident in the trainee's ability to provide drug checking services on their own.

Appendix A: Important Training Points

Sample loading and unloading

Loading sample onto FTIR

- Adequate sample size (matchstick head or less needed)
- Sample is not heated, denatured, or destroyed. Try to return as much sample as possible
- Signal preview – what is sufficient? Good contact vs. bad contact
- Different textures and difficulty obtaining a good signal
- Methods for increasing signal (e.g., tinfoil, centre pile)
- Raising and lowering the anvil gently
- Not using the anvil to crush or chip tablets
- Using the red dot as a guide for pressure
- Adjust pressure control knob only when the anvil is raised
- Don't crank on the pressure control knob when the anvil is lowered

Unloading the sample

- Proper cleaning (at least 2 alcohol pads, then dry with kimwipe) – any other contaminated surfaces (e.g., tool)

Sample analysis, OPUS basics

Functionality

- OPUS browser (loaded files)
- Drug ID function button (measure sample, measure background)
- Spectrum search
- Location of functions (taskbar, side panel)

Basic spectrum analysis (order of operations)

1. *Measuring background*
- Make sure the sensor (ATR crystal) is clean
- Rejected scan (what does this look like and how to abort)
- Frequency of background scans (every sample)

2. *Spectrum search*
- Last used parameters selected automatically
- Three tabs of window
- Spectrum correlation > Vector Normalization > 2nd derivative

3. *Subtractive analysis*
- Order of hits
- Multiple libraries turned on, repeated results in list

4. *Evaluate matches*
- Shift curve > Top
- Spectrum color change option
- Zoom functions
- Demonstrate good and poor matches
- Identifying false matches (missing peaks)

5. *Auto-subtract and new search*

Advance Spectrum Analysis

1. *Changing spectrum search settings*
- Restricting search window

- When to turn on expanded libraries (e.g., Pharma)

2. *Mixture analysis*
   - Selecting number of components
   - Restricting libraries
   - Evaluating the outcome (composite vs. query)
   - Unsuccessful results (components missing)

3. *Quantification*
   - Fentanyl QUANT2 modeling if available
   - Limitations and considerations