

## **Appendix 1: Description of Durham VAHCS Centralized LCS**

**Program** The LCS Process at the Durham VAHCS is as follows:

- 1) Veterans are determined to be eligible for LCS based on their age and smoking history. Providers may elicit this history on their own or utilize clinical reminders which are part of the electronic medical record system.
- 2) A provider, most often the Veteran's primary care provider, places a lung cancer screening consult.
- 3) A lung cancer screening nurse receives the consult and confirms eligibility criteria. They then mail out an informational packet to the Veteran, stating that the patient should call the nurse if interested in learning more about lung cancer screening. Of note, early in screening implementation, the nurse would call the Veteran directly once a consult was placed, but given the increased volume of consults, mailers are now used as the first-reach effort.
- 4) Veterans who connect with the screening program have a shared-decision making conversation regarding screening with the nurse and receive smoking cessation counseling, if applicable.
- 5) Veterans who elect to be screened then have a low-dose computed tomography (CT) scan ordered through radiology
- 6) The Veteran is scheduled for and ideally, receives a low-dose CT scan for lung cancer screening.

**Table S1: Sample Interview Questions Mapped to Major Domains of Analyses**

<b>Knowledge and Skills</b>	<ul style="list-style-type: none"> <li>To get started, can you tell me a little bit about what you know about lung cancer screening?</li> <li>What is the purpose of LCS?</li> <li>Who needs to get screened?</li> </ul>
<b>Memory, Attention, and Decision Processes</b>	<ul style="list-style-type: none"> <li>What is the procedure to get screened?</li> <li>What suggestions do you have to improve the process for LCS?</li> <li>What role did your conversation with the screening nurse play in your decision to get screened?</li> </ul>
<b>Social/Professional Role, Identity &amp; Social Influences</b>	<ul style="list-style-type: none"> <li>Who are some of the people you talk to about your lung/pulmonary health and healthcare decisions?</li> <li>What conversations you have had with your primary care provider(s) about lung cancer screening?</li> <li>What conversations have you had with anyone else about lung cancer screening?</li> <li>What role did your conversation with the nurse play in your decision to get screened?</li> </ul>
<b>Emotion, Behavioral Regulation, Self-Efficacy, &amp; Intentions</b>	<ul style="list-style-type: none"> <li>Think back to the first moment you heard about LCS. Walk me through the process of learning about it through getting screened?</li> <li>What was it like waiting for the CT results?</li> </ul>
<b>Perceived Susceptibility, Threat, &amp; Consequences</b>	<ul style="list-style-type: none"> <li>Do you feel like you are a person who needs to be screened for lung cancer? Why or why not?</li> <li>What, if anything, about your military experience or Veteran status influences how you feel about needing to get screened for lung cancer?</li> </ul>
<b>Trust</b>	<ul style="list-style-type: none"> <li>What are some factors that might influence your decision to get a CT scan of your chest to look for cancer? What do you think some of the benefits are?</li> <li>Were there any factors that made it more accessible? Or made the decision to get screened easier?</li> </ul>
<b>Environmental Context and Resources</b>	<ul style="list-style-type: none"> <li>Tell me about why you think lung cancer screening might or might not be important?</li> <li>What, if anything, made lung cancer screening difficult?</li> <li>What, if anything, made the lung cancer screening easier?</li> </ul>
<b>Race &amp; Racism</b>	<ul style="list-style-type: none"> <li>We're interested in the experiences of Black Veterans. How has your experience as a Black man/woman in the medical system influenced your decision about lung cancer screening?</li> </ul>
<b>Veteran Recommendations</b>	<ul style="list-style-type: none"> <li>What changes would you make to the LCS process?</li> <li>What other information would you want?</li> </ul>

**Table S2: Selected Quotations on Barriers and Facilitators to LCS Uptake**

THEMES	SUMMARIZED FINDINGS	QUOTES		
		Received LDCT	Called Nurse, No CT	No Connection
Knowledge & Skills	Most Veterans across screening groups claimed to have little or no general knowledge of LCS or the LCS procedure at the beginning of interviews, even if they were previously screened for LC. <i>(Barrier)</i>	"Not a thing...I don't know anything about lung cancer screening. So, I'm in the dark, so to speak." - <i>Participant 5, Male</i>	"I don't know anything about lung cancer screening. Whether or not you smoke or not or something like that, that gives you lung cancer, that's the only thing I know about it." - <i>Participant 21, Male</i>	"...I've heard it mentioned on numerous occasions, but I am not sure what it is about." - <i>Participant 28, Female</i>
	However, female Veterans that participated in LCS shared general knowledge of LCS more readily than men. <i>(Facilitator)</i>	"I know that it's done every year and it's a low dose of radiation or X-ray. And it keeps track of what's in your lungs... it protects me from having cancer that can't be treated...if I do, it could be treated if it's caught in time." - <i>Participant 1, Female</i>	N/A	N/A
	When probed about the purpose of LCS, most Veterans associated LCS with early detection of lung cancer. <i>(Facilitator)</i>	"To detect early cancer or if there were some proper properties within your lungs that are looking a little suspicious, they can evaluate and treat if needed." - <i>Participant 13, Female</i>	"Maybe just to help out in projecting people with lung cancer...Get a diagnosis of it before it gets too bad." - <i>Participant 20, Male</i>	"I would imagine to detect it early, particularly in high risk patients, such as myself...and the earlier you catch it, the better chance you have of a cure." - <i>Participant 24, Male</i>
Memory, Attention, & Decision Processes	Most Veterans did not remember specifically discussing LCS with the program nurse. A few mentioned that any conversation they may have did not impact their decision to participate in LCS. <i>(Barrier)</i>	" I always listen to my doctors. I always listen to them when they make suggestions... Once my doctor suggested that we should do this [LCS], it was a done deal..." - <i>Participant 4, Male</i>		N/A

	<p><b>Veterans who contacted the program but did not get screened were often unsure or did not remember what prevented them from being screened. Veterans who did not connect with the program said they did not recall receiving a letter; a few remembered receiving the letter but lost it or couldn't recall what it said. (Barrier)</b></p>	<p>N/A</p>	<p>“Sometimes things kind of come up and life happens and stuff, and things get put off. Or in my case, I might even forget sometimes... It might have been something that I just didn't follow up on...I didn't decline, I don't think I would do that. I can see where it might have slipped my mind or I got distracted and got to doing something else and forgot to go back to it or something along those lines.” – Participant 19, Male</p>	<p>“I got a letter and I don't know what I did with it...She [Veteran's wife] picks up all the stuff she figured I don't need or don't want to bother with and I don't see it no more. It's probably in a folder somewhere...” – Participant 29, Male</p>
<p><b>Social/Professional Role and Identity &amp; Social Influences</b></p>	<p><b>Military and combat exposures heightened Veterans awareness of the need for LCS. (Facilitator)</b></p>	<p>“...I am a four-time combat Veteran. I've been in four different combat zones, so the smell of smoke, the gunpowder, the artillery rounds, the breathing of burning buildings, the breathing of diesel burning, burn pits, all that kind of stuff... that stuff is inhabited into my body, so I feel it's very important for me and all Veterans to get tested.” – Participant 7, Male</p>	<p>“I used to work on ships in the [location] shipyard... I did hazmat work with lead and asbestos, mold and mildew. I did asbestos removal when I was working on the ships in the [location] shipyard. So, me, myself, personally, I would like to go ahead and get myself screened, period.” – Participant 18, Male</p>	<p>“I was stationed in [location]. We had a couple of explosions or fires from a missile site. I breathed in some of that stuff...and when I got out it was from one warehouse to another warehouse, to another warehouse...and all of these places were pretty much dirty... When they told me I couldn't work no more, I always wondered if it really did have anything to do with my possibility of getting lung [cancer].” – Participant 29, Male</p>

	<p><b>Veterans who were screened had a wide variety of social influences involved in their LCS decisions and lung health, while Veterans who were not screened for LC often reported not utilizing social support for their health needs and relying more exclusively on input from their healthcare providers. (Facilitator)</b></p>	<p>"[I talked to] both my daughters, my ex-wife, and girlfriend...They were good conversations, I made sure that they understood this was strictly for early detection because of the length of time that I smoked... I didn't hold anything back from them, but they just wanted to be sure that there wasn't something going on that they needed to know about...One other friend, he's also a Veteran. He's the type of guy that's a little bit like myself. He likes the idea of early detection and prevention, so good conversations." - <i>Participant 10, Male</i></p>	<p>"Basically nobody, pretty much. I keep that to myself unless something is really wrong, and then, immediate family...My siblings, my older brothers, older sister, cousins..." - <i>Participant 19, Male</i></p>	<p>"I don't talk to people. I don't hang out with people...As far as social stuff, I pretty much cut that off unless I'm going shopping or going to get some gas or...that's it... [So, you don't talk to like family members or any friends or anything like that?] Nope. All that been eliminated... [In terms of your wife then, do you talk to her about your health and healthcare decisions?] No. She tells me a bunch of stuff that she don't know nothin' about, but that's just 'cause she's worried. And she tries not to get worried, and I think she gets scared that I might croak one day." - <i>Participant 29, Male</i></p>
<p><b>Emotion, Behavioral Regulation, Reinforcement, &amp; Intention</b></p>	<p><b>Many Veterans reported no having an emotional response to LCS. (Facilitator)</b></p>	<p>"I wasn't bothered by it. I'm kind of a realist, so... I wasn't on pins and needles waiting to hear... Once I made up my mind to do it, the results were going to be what they were anyway, so it didn't create a whole lot of anxiety for me." - <i>Participant 12, Male</i></p>	<p>"No [emotions]. I looked at it objectively. I was in the medical field, so I kind of understand the do's and don'ts of it, and I just made a decision off of that...I was a medic and I was a PT [physical therapy] tech." - <i>Participant 23, Male</i></p>	

	<p><b>Fear of LCS resulting in the discovery of a malignancy was a driver to avoid or delay LCS. (Barrier)</b></p>	<p>"I felt like if my mama and sister passed away with lung cancer, I probably have it too. And so, I didn't want to know if I had it, and that's why I did take a long [time to get] screening. After I had quit smoking for a year or so, I decided to go ahead and have it done so if there was something there, it could be treated." - <i>Participant 1, Female</i></p>	<p>"Sometimes Veterans might not want to get the care because they're scared of the results they might find...If I get screened I might find out something that'll scare me...I might be afraid of the results of the screening" - <i>Participant 19, Male</i></p>	<p>"If a got lung cancer, there ain't a whole lot they can do about it...I don't think there's a whole lot that can be done about it...It can be depressing if you find out that you've got lung cancer. That's the only emotional thing I can see...I might get a little nervous about it." - <i>Participant 29, Male</i></p>
<p><b>Perceived Susceptibility or Threat &amp; Intentions</b></p>	<p><b>Veterans made informed decisions when decided whether to participate in LCS. Veterans considered false-positive rates, radiation exposure, and smoking cessation benefits, challenges, and perceived requirements from their providers. (Facilitator)</b></p>	<p>"X-rays are good and they have their places and stuff, but I worked in some areas that I was around radiation sources, and we had to wear a coat, a little badge, that had to be sent in every month to get tested to see what your exposure level was. So, I was always kind of cautious of radiation. And then when Doctor [redacted] explained the low dose CT scan and how much better it was at detection than an X-ray I was really excited about it." - <i>Participant 10, Male</i></p>		<p>"I could have got a mailer a long time ago from the VA and I think what turned me off at that time, it could have been 3 or 4 years ago, was they said they said they had so many false positives and that's the reason I didn't go. There was a high rate of false positives." - <i>Participant 24, Male</i></p>

	<p>Several Veterans that did not connect with the program intend to participate in LCS, but describe it as being low priority (<i>Barrier</i>)</p>	<p>N/A</p>	<p>N/A</p>	<p>"He has mentioned about getting screens for lung cancer and I said it's something I'll think about... Eventually I will do it. But because, like I said, I've not smoked in...gosh, can't remember...I've always been around people that smoked and I don't seem to be having any breathing problems or-- I don't know what lung cancer appears, the effect it [lung cancer] would have on a person, but for the most part I would like to think I'm fairly good in that department. Not saying I'm going to decline any tests or exams, we've just not gotten around to it." - <i>Participant 28, Female</i></p>
	<p>Veterans largely believed that there were no risks or minimal risks; most Veterans felt the benefits of LCS outweighed the risks. (<i>Facilitator</i>)                  A few Veterans that opted out or did not connect with the LCS program were concerned about radiation risks and false-positives. (<i>Barrier</i>)</p>	<p>"I don't see any risks because it is a low dose, just like a chest x-ray or a mammogram. I don't see any risk of having it done. I guess the knowledge gained outweighs the risk." - <i>Participant 1, Female</i></p>	<p>"If you go and you have a prognosis that is wrong, and you're being treated or taking all these other tests that are not necessary, it may be harmful to you...the diagnosis being wrong, it could actually hurt you in the long run. So, that's why I said no." - <i>Participant 23, Male</i></p>	<p>"...I don't really have those kind of fears... No, I don't think there are [risks], but I'm sure the benefits outweigh the risks." - <i>Participant 24, Male</i></p>
<p>Trust</p>	<p>The vast majority of Black Veterans put a lot of trust in their PCP's judgement and recommendations and were interested in participating in LCS (<i>Facilitator</i>)</p>	<p>"I didn't have any concerns. It was a part of my treatment from the person that I held my trust in as far as taking care of my health." - <i>Participant 2, Female</i></p>	<p>"He [participant's doctor] asked if I would consider doing it [lung cancer screening] and I told him yeah because cancer is a big issue in my family and anything involving preventative measures, I'm all for that. It can't hurt me, all it can do is help me... I never refuse anything that the VA offers me because everything that they do is for my benefit..." - <i>Participant 20, Male</i></p>	

<p><b>Veterans across screening groups generally described positive relationships with their PCPs and indicated strong communication, understanding, and mutual trust between the provider and Veteran. (Facilitator)</b></p>	<p>"She asks questions and then if she happened to say something that I don't quite understand, I ask her and she answers it. She lets me know how important it would be to have a screening for certain things..." - <i>Participant 2, Female</i></p>	<p>"They've [PCPs] been fairly easy to understand. I'm fortunate that my doctors are able to kind of, well not dumb it down, but just explain it in a way that is understandable." - <i>Participant 19, Male</i></p>	<p>"She asks a bunch of questions. I answer the questions. She determines whether I'm telling her the truth or not. And she got the look in her eye like when she thinks I'm not being serious...And she's pretty good and I wouldn't trade her for all the money in the world. I don't get to see her enough..." - <i>Participant 29, Male</i></p>
<p><b>A few Veterans discussed navigating mistrust in VA surrounding their LCS results or a lack of connection with their provider. (Barrier)</b></p>	<p>"I was on the fence about even doing it [tissue removal] because there wasn't a concrete answer on whether it was cancerous or not because the biopsy didn't come back conclusive. So, I was on the fence... Like I said, it wasn't confirmed until after the lobectomy and they tested the tissue. ... Would the VA come back and say, 'Oh we're sorry, but it <i>wasn't</i> cancer.' Of course not, they wouldn't. ... So, I go through feelings with that, just based on the honesty part... Would you come back and tell me, 'Oh, it wasn't lung cancer' after you took two thirds of my lungs? So, I second guess that. - <i>Participant 15, Male, Diagnosed with LC</i></p>		<p>"I suppose he [the doctor] does the best he can for who he is, but I don't really feel connected to him. I don't feel there's a personal relationship and I think if you're gonna have a doctor all up in your personal business, it should be a very personal relationship. ... No, he's not a cruel man. ... but he's not a very concerned man...Basically, there wasn't a lot of information to be made easy, 'Have you ever considered getting screened for lung cancer,' I mean, it is simple, straight to the point... Now I imagine if I would have asked more questions he may have given me more information but like I said, I wasn't really that concerned. I think, in general, people do the minimum. They do what they have to do. They only go to the next level if they're engaged to go." - <i>Participant 28, Female</i></p>



**Table S3: Selected Quotations on Contextual Factors for LCS Uptake**

THEMES	SUMMARIZED FINDINGS	QUOTES		
		Received LDCT	Called Nurse, No CT	No Connection
<b>Environmental Context and Resources</b>	<p>Veterans who completed LCS often reported that LCS was scheduled directly by their providers and reported fewer environmental barriers. The main barriers cited were travel distance to VA, traffic, and parking, and were often illustrated as minor inconveniences.</p> <p>Veterans who did not receive LCS reported more significant socioeconomic barriers, however these were not cited as the major reasons for not completing LCS.</p>	<p>"Usually, my partner may ride with me sometimes. I have a drive that takes me about an hour and a half or so to get to the VA, so we just make like a day of it. And not that I need someone to drive me it's just that we're real rural. No McDonald's, no hospital. So, if we get a chance to go to the city, we take advantage of it." - <i>Participant 13, Female</i></p>	<p>"Scheduling would be the most important thing... Right now, I don't have any transportation...I'm 60 miles out... I try to put all of my appointments in one day." - <i>Participant 22, Male</i></p>	<p>"[Drive to Durham VA] About 45 minutes...It costs gas fare and I don't get reimbursed for my travel to go to the VA. They stopped that...Sometimes you have to scuffle to get the money up to go, sometimes. Things are so tight now. You're traveling back and forth...you have to budget yourself with your money to get there and back... it's a problem when you have to travel that far."- <i>Participant 27, Male</i></p>
<b>Race &amp; Racism</b>	<p><b>Race and racism were not reported as factors affecting LCS uptake</b></p>	<p>"All my doctors have been exceptionally professional... Everybody that's been assigned to me, I guess I've just been a lucky quarter because I've had no problems... I've always had good experiences with my doctors. I could call them to talk-- they give me their personal number where I could call them if I'm having an issue...I can't name one experience that I left the hospital feeling uncomfortable about the treatment that I had..." - <i>Participant 2, Female</i></p>	<p>To be perfectly honest with you it hasn't. I guess because I've been around so long. I've learned how to maneuver in the military and VA systems. Just being a Black person, being a woman of color, you have a little network of people, anywhere from green to purple that you can trust, that are reliable and real. I think it's just a thing of commitment. It boils down to principles and integrity. - <i>Participant 28, Female</i></p>	<p>"It's been pretty good so far. I haven't had any problems... [How has your experience as a Black man influenced your decisions about LCS screening, specifically?] It hasn't influenced it really, not at all." - <i>Participant 32, Female</i></p>

<p><b>Some Veterans shared experiences of racism or navigating their experiences of race in the medical system, however these experiences did not directly impact decisions regarding LCS</b></p>	<p>"White folks get a different treatment than I do. They just walk into the clinic and they don't even have an appointment or nothing, and they get waited on quickly. But when I walk into the clinic 'cause I have a serious problem... I have to sit down and wait my turn. And look, this guy walked in right behind me and he gets waited on about 4-5 minutes after he gets there." - <i>Participant 6, Male</i></p>	<p>"For one thing, some of the doctors act like if you're Black you don't hurt, you don't feel anything. Because the last surgery I had... I went from March to September with the hardware come loose in my knee, and she [my PCP] telling me it was all in my mind. And until they did an MRI or CT to see that the hardware had come apart in my knee...and I had to go to another doctor to get that done. I had to let her go. She was a [outside VA] doctor... When I did work in the VA for a short period of time... some of things I've seen there and some of the VA doctors, I've had an issue with them also, well the physician assistants... their attitudes towards some things, 'well, you don't have to pay for it, so why do you complain?' I don't feel comfortable going to the VA to get major work done where I have to have anesthesia." – <i>Participant 25, Male</i></p>
	<p>"It's reality. Black soldiers have a different spirit about themselves, a more pacifist spirit. And as a result of that, many times we've been misled, taken advantage of... and thereby increasing or enhancing the mistrust. ... we, for the most part, can't trust anybody but our own selves." - <i>Participant 8, Male</i></p>	

**Table S4: Veteran Recommendations and Suggestions**

THEMES	SUMMARIZED FINDINGS	QUOTES		
		Received LDCT	Called Nurse, No CT	No Connection
<p><b>Recommendations &amp; Suggestions</b></p>	<p><b>To increase LCS uptake, Veterans suggested providers put more emphasis on LCS, requested more flexible and assistive scheduling, which included reminders about next steps, prompts to stay on track, and the ability to do walk ins.</b></p> <p><b>Veteran recommendations for increasing awareness of LCS included: discussing LCS in the Stop Smoking Clinic; hosting classes; mailing information pamphlets and brochures via email and traditional mail; disseminating pamphlets in communities; and reaching out to Veterans via phone.</b></p>	<p>"I hope this is just not a one and done that we can continue the dialog some type of way. A recommendation would be to have a support group of Veterans, it wouldn't even have to be Black Veterans, Veterans who have gone through the same thing. Support groups work." - <i>Participant 15, Male, Diagnosed with LC</i></p> <p>"[Make it] just like a COVID test. I guess you can't make it mandatory, I don't know. But it's a requirement... when you go in the VA they want to make sure you got your tetanus shot; they want to make sure you check for diabetes; they want to make sure your blood pressure is good. Well okay, let's schedule a cancer screening. The same way you do everything else, let's put it as the main agenda." - <i>Participant 7, Male</i></p> <p>"I don't see any changes that I would institute right now... be more personal with their [VA] communication. Put a little bit more urgency in it." - <i>Participant 8, Male</i></p>	<p>"They should mail pamphlets to your home. To make you aware of it.... I think they should have, every now and then, have someone going around in communities with pamphlets, free pamphlets, to give away about lung cancer in their community...That's the only way you're gonna open someone's eyes, is that you give them information on it. The one's that deny it, that's their choice, again... But there are some people that will take those Pamphlets and read them. If you could get just one or 10 to read those pamphlets and put their eye on 'em, that's 10 lives you've saved..." - <i>Participant 21, Male</i></p> <p>"Maybe [LCS] should be a question at every meeting that you have with your VA doctor...it'll be on their minds, 'Maybe I need to go ahead and take it [LCS]' after so many times...It's just a simple question...It may get some positives or negatives, but it'll be out of the way." - <i>Participant 23, Male</i></p> <p>"Simplify the wording in the information...The medical terms [could be challenging] if they're not into it." - <i>Participant 23, Male</i></p>	<p>"It would be beneficial if the doctors or nurses would stress that [LCS] like they stress the blood tests, the blood work, the prostate, and the blood pressure. I think that should be part of the routine screening for Black Veterans." - <i>Participant 24, Male</i></p> <p>"Everybody got smart phones... Send out the texts or messages or whatever they do on these phones." - <i>Participant 26, Male</i></p> <p>"VA [should] give classes...if they had classes on cancers and screening and stuff, I think it would benefit a whole lot of people, they would get to understand and then I think they would start checking into it more. But see, when you go there, you just go in there, get checked up, and get your prescription filled, and then you out of there. And so, you still have no knowledge of what's going on." - <i>Participant 27, Male</i></p> <p>"Maybe more advertisement on it and put out there... or more frequent advertisement, should I say. Maybe make it part of your annual exam to ask if patients-- if they were interested, are they still interested if they haven't received it yet. Follow-ups on the original request... Just like we do colon tests or mammograms, as far as females, on certain intervals. I feel like lung cancer screening should be put out there as well for screenings." - <i>Participant 31, Female</i></p>