



11/5/2016

«pat\_first\_name» «pat\_last\_name»  
«addr1» «addr2»  
«city», TX «zip»

Dear «Eng\_prefix». «pat\_first\_name» «pat\_last\_name»,

There are two things your doctors at Parkland Health & Hospital System want you to know:

- 1) Your risk of getting liver cancer goes up if you have liver disease.
- 2) Screening tests can find many liver problems early, so problems can be treated before they get serious.

That's why we're inviting you to have a liver ultrasound and a simple blood test – two of the screening tests for liver cancer. Research has shown that these tests can have big benefits. If everyone with liver disease did these tests every 6 months, there would be many fewer deaths from liver cancer.

A liver ultrasound is quick and painless procedure. During a liver ultrasound, you lie on a table while the doctor puts some gel on the skin above your stomach. Then the doctor touches your skin with a wand to look at images of your liver on a computer screen. If the test is normal, you repeat the test in 6 months.

Parkland Financial Assistance (previously Parkland Health Plus) and private insurance usually covers part, if not all, of the cost of a liver ultrasound. You may want to check with Parkland Financial Services to see what your coverage will be.

Please call «projnum» to make an appointment for your liver ultrasound.

Sincerely,

Dr. Noel Santini  
Medical Director of Adult Medicine  
Community Oriented Primary Care  
Parkland Health & Hospital System

Amit Singal, MD  
Division of Digestive and Liver Diseases  
Department of Internal Medicine  
Parkland-UT Southwestern Patient  
Centered Outcomes Research Center

ARM 2 Invitation Call Scripts				
STEP	ENGLISH SCRIPT	BUTTON	NEXT	WORKFLOW
0	Select in the top portion of this window what number you will be dialing, then click Continue.	CONTINUE	to 1	
1	Dial «numdial» and wait for an answer. Then click the button below indicating how the call was answered...	No answer	NA	
		Busy	B	
		Answering machine	to 2	
		Person	to 3	
2	Hello, good «morningafternoonevening». This message is for «Eng_prefix» «pat_first_name» «pat_last_name». My name is «RA_first_name» and I am calling on behalf of Parkland Hospital about the letter you received in the mail inviting you to have a liver ultrasound and a simple blood test . Doctors recommend these screening tests for patients [with liver disease/who may have liver disease]. If you would like to call us back, you can do so at: «projnum». Thank you, good bye.	END CALL	AMM	
3	Hello, good «morningafternoonevening». My name is «RA_first_name» and I am calling on behalf of Parkland Hospital. Is «Eng_prefix» «pat_first_name» «pat_last_name» available?	Not at this number	to 4	
		Not available	to 5	
		Available	to 8	
4	Am I calling «numdial»?	Yes, wrong number	WN	
		No, misdiald	MD	
5	Is this the best phone number to reach «herhim»?	No	to 6	
		Yes	to 7	
6	What is the best phone number to reach «herhim»? [Record number.]	No update	to 7	
		Update info	to 7	RECORDNUMBER [tbl_callhistory.call_best.number]
7	When would be a convenient time to reach «herhim»? [Record time.]	CONTINUE	to 16	RECORDTIME [tbl_callhistory.call_best.time]
8	Hi «Eng_prefix» «pat_last_name», I work with Parkland Hospital and we are inviting patients to have two of the screening tests for liver cancer. Did you receive the invitation in the mail?	No	to 9	
		Yes	to 13	LETTERREC
9	Would you like me to resend the letter to your address?	No	to 11	
		Yes	to 10	LETTERRESEND
10	We have the following address on file: «pat_first_name» «pat_last_name» «addr1» «addr2» «city», TX «zip» Is this your correct address? [If no, record new address.]	No update	to 11	BESTAddressYN [tbl_addresses row]
		Update info	to 11	
11	The reason we are calling is to invite you to have a liver ultrasound. I would like to go ahead and read you the letter.	No, never interested	to 15	
		No, not interested now	to 15	PARTICIPATEYN
		Maybe later	to 15	
		Resend letter and call back	to 20	
		Yes, read letter	to 12	READLETTER
12	The letter says: <b>[LETTER]</b> That's it!	CONTINUE	to 14	

13	As you may have read, we're inviting you to have a liver ultrasound and a simple blood test – two of the screening tests for liver cancer. Research has shown that these tests can have big benefits. If everyone who has or may have liver disease did these tests every 6 months, there would be many fewer deaths from liver cancer.	CONTINUE	to 14	
14	Would you like to take advantage of this screening opportunity? <b>[If already scheduled, ask: Would you like to have the simple blood test?]</b> <b>If yes, select: AFP only.]</b>	No, never interested	to 15	
		No, not interested now	to 15	PARTICIPATEYN
		Maybe later	to 15	
		AFP only	to 23	
		Yes, interested	to 21	
15	People have different concerns when it comes to getting tested for cancer. Would you mind sharing the reason or reasons why you do not want to have a liver ultrasound? <b>[Check all that apply.]</b> <ul style="list-style-type: none"> <li>• Cost of the test</li> <li>• Prep involved</li> <li>• Pain during the test</li> <li>• Time it takes to do the test</li> <li>• Having to take a day off of work</li> <li>• Potential risks</li> <li>• Clothing during test</li> <li>• Chance that a test might find a problem</li> <li>• Liver cancer screening doesn't apply to me</li> <li>• Already had liver ultrasound (project or usual care)</li> <li>• Other reason</li> <li>• Don't want to share</li> </ul>	Cost	If OPT go to 17; If NI now go to 18; If ML go to 19	COST [0=No;1=Yes]
		Prep		PREP [0=No;1=Yes]
		Pain		PAIN [0=No;1=Yes]
		Time		TIME [0=No;1=Yes]
		Work		WORK [0=No;1=Yes]
		Risk		RISK [0=No;1=Yes]
		Clothing		CLOTH [0=No;1=Yes]
		Problem		PROB [0=No;1=Yes]
		Doesn't apply		DNA [0=No;1=Yes]
		Screen up-to-date		UTD [0=No;1=Yes]
		Other		OTH [0=No; 1=Yes] RECORD REASON(S)
Don't want to share	DNS [0=No;1=Yes]			
16	Thank you so much for your time. Have a good «dayevening».	END CALL	NH	
17	Thank you for speaking with me today. We will remove you from our contact list. Have a good «dayevening».	END CALL	OPT	CENSOR
18	Thank you for speaking with me today. We will make a note that you are not interested at this time. Have a good «dayevening».	END CALL	NI	INVITE IN 3 MO.
19	Thank you for speaking with me today. We will make a note that you may be interested in the future. If you would like to call us back, you can do so at: «projnum». Have a good «dayevening».	END CALL	ML	INVITE IN 3 MO.
20	Thank you so much for your time. We will resend the letter and call you back. Have a good <<dayevening>>.	END CALL	PC	
21	Parkland Financial Assistance (previously Parkland Health Plus) and private insurance usually covers part, if not all, of the cost of a liver ultrasound. Do you have Parkland Financial Assistance or private insurance?	No	to 18	[QualifyCriteriaMetYN,dte_consent]
		Don't know	to 18	
		Yes	to 19	
22	Okay. I can give you the number to Parkland's Financial Services so you can ask what your coverage will be. It is «finacialnum». We will make a note to contact you again in the future. If you would like to call us back, you can do so at: «projnum». Have a good «dayevening».	END CALL	PFS	INVITE IN 3 MO.

23	<p>Okay. We will submit a request. &lt;&lt;The Radiology department will contact you by phone in about a week to schedule the appointment for your liver ultrasound.&gt;&gt;The blood test will be scheduled for the same day as your ultrasound. It will be in the main Parkland lab after your ultrasound.</p> <p>If you become uninsured or lose your insurance coverage prior to this appointment, you may be required to pay for these services out of pocket. If you have any questions, I can give you the number to Parkland's Financial Services. It is «finacialnum».</p> <p>If you would like to call us back, you can do so at: «projnum». Have a good «dayevening».</p>	END CALL	C	REQUEST ORDER
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ARM 3 Invitation Call Scripts				
STEP	ENGLISH SCRIPT	BUTTON	NEXT	WORKFLOW
0	Select in the top portion of this window what number you will be dialing, then click Continue.	CONTINUE	to 1	
1	Dial «numdial» and wait for an answer. Then click the button below indicating how the call was answered...	No answer	NA	
		Busy	B	
		Answering machine	to 2	
		Person	to 3	
2	Hello, good «morningafternoonevening». This message is for «Eng_prefix» «pat_first_name» «pat_last_name». My name is «RA_first_name» and I am calling on behalf of Parkland Hospital about the letter you received in the mail inviting you to have a liver ultrasound and a simple blood test . Doctors recommend these screening tests for patients [with liver disease/who may have liver disease]. If you would like to call us back, you can do so at: «projnum». Thank you, good bye.	END CALL	AMM	
3	Hello, good «morningafternoonevening». My name is «RA_first_name» and I am calling on behalf of Parkland Hospital. Is «Eng_prefix» «pat_first_name» «pat_last_name» available?	Not at this number	to 4	
		Not available	to 5	
		Available	to 8	
4	Am I calling «numdial»?	Yes, not best number	to 6	
		Yes, wrong number	WN	
		No, misdialed	MD	
5	Is this the best phone number to reach «herhim»?	No	to 6	
		Yes	to 7	
6	What is the best phone number to reach «herhim»? [Record number.]	No update	to 7	
		Update info	to 7	RECORDNUMBER [tbl_callhistory.call_best.number]
7	When would be a convenient time to reach «herhim»? [Record time.]	CONTINUE	to 18	RECORDTIME [tbl_callhistory.call_best.time]
8	Hi «Eng_prefix» «pat_last_name», I work with Parkland Hospital and we are inviting patients to have two of the screening tests for liver cancer. Did you receive the invitation in the mail?	No	to 9	
		Yes	to 13	LETTERREC
9	Would you like me to resend the letter to your address?	No	to 11	
		Yes	to 10	LETTERRESEND

10	We have the following address on file: «pat_first_name» «pat_last_name» «addr1» «addr2» «city», TX «zip» Is this your correct address? <b>[If no, record new address.]</b>	No update	to 11	RECORDADDRESS [tbl_.....]
		Update info	to 11	
11	The reason we are calling is to invite you to have a liver ultrasound. I would like to go ahead and read you the letter.	No, never interested	to 15	
		No, not interested now	to 15	PARTICIPATEYN
		Maybe later	to 15	
		Resend letter and call back	to 22	
		Yes, read letter	to 12	READLETTER
12	The letter says: <b>[LETTER]</b> That's it!	CONTINUE	to 14	
13	As you may have read, we're inviting you to have a liver ultrasound and a simple blood test – two of the screening tests for liver cancer. Research has shown that these tests can have big benefits. If everyone who has or may have liver disease did these tests every 6 months, there would be many fewer deaths from liver cancer.	CONTINUE	to 14	
14	Would you like to take advantage of this screening opportunity? <b>[If already scheduled, ask: Would you like to have the simple blood test?]</b> <b>If yes, select: AFP only.]</b>	No, never interested	to 15	
		No, not interested now	to 15	PARTICIPATEYN
		Maybe later	to 15	
		AFP only	to 25	
		Yes, interested	to 23	
15	People have different concerns when it comes to getting tested for cancer. Would you mind sharing the reason or reasons why you do not want to have a liver ultrasound? <b>[Check all that apply.]</b> <ul style="list-style-type: none"> <li>• Cost of the test</li> <li>• Prep involved</li> <li>• Pain during the test</li> <li>• Time it takes to do the test</li> <li>• Having to take a day off of work</li> <li>• Potential risks</li> <li>• Clothing during test</li> <li>• Chance that a test might find a problem</li> <li>• Liver cancer screening doesn't apply to me</li> <li>• Already had liver ultrasound (project or usual care)</li> <li>• Other reason</li> <li>• Don't want to share</li> </ul>	Cost	to 28	COST [0=No;1=Yes]
		Prep	to 16	PREP [0=No;1=Yes]
		Pain	to 16	PAIN [0=No;1=Yes]
		Time	to 16	TIME [0=No;1=Yes]
		Work	to 16	WORK [0=No;1=Yes]
		Risk	to 16	RISK [0=No;1=Yes]
		Clothing	to 16	CLOTH [0=No;1=Yes]
		Problem	to 16	PROB [0=No;1=Yes]
		Doesn't apply	to 16	DNA [0=No;1=Yes]
		Screen up-to-date	to 16	UTD [0=No;1=Yes]
		Other	to 16	OTH [0=No; 1=Yes] RECORD REASON(S)
	Don't want to share	If OPT go to 19; If NI go to 20; If ML go to 21	DNS [0=No;1=Yes]	
16	There is no preparation required for a liver ultrasound. Fasting for 8 hours is recommended for best results but not required.			
	A liver ultrasound is a painless procedure. During a liver ultrasound, you lie on a table while the doctor puts some gel on the skin above your stomach. The gel won't stain your clothing or hurt your skin. Then the doctor touches your skin with a wand to look at images of your liver on a computer screen.	CONTINUE	to 24	

	<p>You will feel no pain but may be asked to change positions or hold your breath during the test.</p> <p>A liver ultrasound is a quick procedure. The ultrasound usually takes less than 30 minutes and the appointment should take around 1 hour from start to finish.</p> <p>Liver ultrasounds do not require you to take an entire day off work. With planning, most people are able to take the time to complete a test.</p> <p>A liver ultrasound is a safe procedure. An ultrasound takes pictures of organs inside the body. It does not use X-rays or other types of radiation.</p> <p>Your privacy is very important to us. You will be asked to wear comfortable, loose clothing. The doctor will have you lift up your shirt and possibly slide your pants down to expose only your stomach.</p> <p>Liver cancer testing is important. It could even save your life. That's why we mailed you an invitation to have a liver ultrasound – one of the screening tests for liver cancer. This screening test can actually find many liver problems early, so problems can be treated before they get serious. If ignored, these problems typically get worse without treatment.</p> <p>Your lab results suggest that you have or may have liver disease. This means you are possibly at increased risk for developing liver cancer in the future. Liver cancer often does not cause symptoms until it is in its later stages, so it is seldom found early without screening. That's why we mailed you an invitation to have a liver ultrasound – one of the screening tests for liver cancer. This screening test can find many liver problems early, so problems can be treated before they get serious.</p> <p>You should have a liver ultrasound every 6 months. We can submit a request now and the Radiology department will contact you to schedule your next liver ultrasound for 6 months after your last one.</p> <p>We're inviting you to have a liver ultrasound – one of the screening tests for liver cancer. This screening test can find many liver problems early, so problems can be treated before they get serious. Research has shown that this test can have big benefits. If everyone who may have liver disease did this test every 6 months, there would be many fewer deaths from liver cancer.</p>			
17	After receiving this additional information, are you interested in having a liver ultrasound?	<p>No, never interested</p> <p>No, not interested now</p> <p>Maybe later</p> <p>Yes, interested</p>	<p>to 19</p> <p>to 20</p> <p>to 21</p> <p>to 23</p>	
18	Thank you so much for your time. Have a good <<dayevening>>.	END CALL	NH	
19	Thank you for speaking with me today. We will remove you from our contact list, but please consider talking to your doctor about liver cancer testing. Don't hesitate to raise any concerns you may have. Have a good «dayevening».	END CALL	OPT	CENSOR
20	Thank you for speaking with me today. We will make a note that you are not interested at this time, but please consider talking to your doctor about liver cancer testing. Don't hesitate to raise any concerns you may have. Have a good «dayevening».	END CALL	NI	INVITE IN 3 MO.

21	Thank you for speaking with me today. We will make a note that you may be interested in the future. If you would like to call us back, you can do so at: «projnum». Have a good «dayevening».	END CALL	ML	INVITE IN 3 MO.
22	Thank you so much for your time. We will resend the letter and call you back. Have a good <<dayevening>>.	END CALL	PC	
23	Parkland Financial Assistance (previously Parkland Health Plus) and private insurance usually covers part, if not all, of the cost of a liver ultrasound. Do you have Parkland Financial Assistance or private insurance?	No	to 24	[QualifyCriteriaMetYN, dte_consented]
		Don't know	to 24	
		Yes	to 25	
24	Okay. I can give you the number to Parkland's Financial Services so you can ask what your coverage will be. It is «finacialnum». We will make a note to contact you again in the future. If you would like to call us back, you can do so at: «projnum». Have a good «dayevening».	END CALL	PFS	INVITE IN 3 MO.
25	Okay. We will submit a request. <<The Radiology department will contact you by phone in about a week to schedule the appointment for your liver ultrasound.>>The blood test will be scheduled for the same day as your ultrasound. It will be in the main Parkland lab after your ultrasound.	END CALL	C	REQUEST ORDER
	If you would like to call us back, you can do so at: «projnum». Have a good «dayevening».			

Supplemental Table. Criteria for inclusion of participants

Documented cirrhosis	Cirrhosis	ICD-9: 571.2 and/or 571.5	N/A
	Cirrhosis complication	ICD-9: 456.0, 456.1, 456.2, 456.21, 567.23, 572.2, 572.3	
Undiagnosed cirrhosis	Hepatitis B	ICD-9: 070.2, 070.3 Lab Values: Hepatitis B Surface Antigen, Hepatitis B Viral Load	Include if: APRI $\geq$ 1.5 Platelet count < 300 AST < 1,000
	Hepatitis C	ICD-9: 070.4, 070.5, 070.7 Lab Values: Positive Hepatitis C Genotype, Hepatitis C Viral Load	
	Alcohol abuse	ICD-9: 291.4, 291.89, 303.0, 303.00, 303.01, 303.02, 303.03, 303.9, 303.91, 303.92, 303.93, 305.0, 305.1, 305.2, 305.3	
	Metabolic syndrome	ICD-9: 277.7	
	Alcoholic fatty liver	ICD-9: 571.0, 571.1	
	Non-alcoholic fatty liver disease	ICD-9: 571.8, 571.9	
	Obesity	ICD-9: 278.00, 278.01, 278.02	
	Primary biliary cirrhosis (PBC)	ICD-9: 571.6	
	Primary sclerosing cholangitis (PSC)	ICD-9: 576.1	
	Hereditary hemochromatosis (HFE)	ICD-9: 275.01	
Autoimmune hepatitis (AIH)	ICD-9: 571.42		



**Supplemental Figure 1:** Study Outcomes Flow Diagram for Usual Care (Arm 1)

**Supplemental Figure 2:** Study Outcomes Flow Diagram for Outreach Alone (Arm 2)

**Supplemental Figure 3:** Study Outcomes Flow Diagram for Outreach and Patient Navigation (Arm 3)





