Libby Montana's Public Health Emergency, Asbestos Health Screening
Center for Asbestos Related Disease
Grant Number 6 NU61TS000295-01-01
Year 1, Quarter 4
(June 1, 2020 through August 31, 2020)

MAJOR FINDINGS

The goal of the funding opportunity is "early detection of certain medical conditions related to environmental health hazards." The Center for Asbestos Related Disease (CARD or CARD Clinic) screening program has been successful in early detection of asbestos related disease (ARD) and lung cancer resulting from the Libby asbestos exposure public health emergency. Outreach and education locally, regionally, and nationally are also being conducted to support the screening programs. These efforts contribute significantly to the success of the grant. The clinical data in this report includes both the ARD and lung cancer screening (LCS) programs. Outcomes reported in the tables below are for the fourth quarter of year 1. Also included are year 1 to date numbers, and cumulative totals, if collected, include screening activities since 7/1/2011, the beginning of the first four-year screening grant.

Table 1 reports the number of ARD screenings, the number of patients who needed CT evaluations to determine diagnostic status, the number of patients diagnosed with ARD, and the number of individuals who were eligible for ARD Medicare. Individuals can be eligible for Medicare through the Environmental Health Hazard designation criteria, but not be clinically diagnosed with ARD. This situation occurs in three different ways: (1) A positive chest x-ray B-read. (2) A positive CT read by an outside radiologist. (3) A documented diagnosis of an asbestos related cancer (mesothelioma, lung, colon, rectum, larynx, stomach, esophagus, pharynx and ovarian). It is noteworthy that most screening participants did not have occupational or household exposures to Libby Amphibole asbestos, but reported environmental exposure only.

TABLE 1: SCREENING OUTCOMES				
Screening Outcomes	Before Current Grant 7/1/11-8/31/19	Yr. 1 Q4 6/1/20-8/31/20	Yr. 1 Total 9/1/19 - 8/31/20	Cumulative totals
# ARD screenings	6,563	143	599	7,162
# CT diagnostic appointments	4,229	81	308	4,537
# ARD diagnosed	2,552	41	143	2,695
# ARD Medicare eligible	2,880	44	166	3,046
% diagnosed w/ environmental exposure only	not collected	80%	79%	not collected

GOALS/OBJECTIVES

Goal 1: Provide medical screening in the Libby area and across the nation

Asbestos Related Disease screening in Libby and across the nation:

Table 2 details types of screening appointments. Even after years of asbestos health screening programs in the Libby, Montana; during year one, 42% of screening patients were participating for the first time. Approximately half of all screening participants live outside of Lincoln County and this has remained true for the past nine years of the program. It is estimated that over 80,000

people could have spent significant time in the Libby, Montana area while the mine was in full operation, so there is likely a large number of potential screening patients that have not yet been through the program. For those who qualify, asbestos health screening is offered either in Libby at the CARD Clinic or at a distance for those who cannot travel to Libby. Due to the Coronavirus pandemic, for the final two quarters of year 1, CARD promoted more long distance screenings for those who were being encouraged not to leave their local areas. Successful completion of long distance screening (LDS) occurs when the participant completes all screening related activities (questionnaires, phone interview, spirometry, chest x-ray, and CARD medical provider visit by phone, plus a CT and second medical provider visit by phone if appropriate). The total number of appointments reported exceeds the number of patients because many screenings include two appointments; an initial appointment and then a CT follow-up appointment. Each participant is asked if they would like to share their health information and screening results with ATSDR's Tremolite Asbestos Registry (TAR), and with their primary care provider (PCP). Most say yes to both consents. To better understand the positive impacts of early diagnosis and treatment, we have modified our data collection for this grant to record the number of past screeners who have been diagnosed with ARD and follow-up at CARD. During the fourth quarter, 812 patients who were prior screening participants were seen for follow-up at CARD.

TABLE 2: TYPES OF SCREENING APPOINTMENTS AND DIAGNOSIS RATES				
Appointment Type	**Before Current Grant 7/1/11-8/31/19**	**Yr. 1 Q4 6/1/20-8/31/20**	**Yr. 1 Total 9/1/19 - 8/31/20**	**Cumulative totals**
# screenings	6,563	143	599	7,162
# new screening patients	4,806	72	252	5,058
# rescreenings	1,757	71	347	2,104
# Lincoln County, MT residents	3,366	72	310	3,676
# LDS eligible screenings done in clinic	2,679	44	114	2,793
# of LDS patients	519	14	125	644
# in clinic appointments (includes both visits)	9,445	183	681	10,126
#LDS appointments (includes both visits)	1,347	41	226	1,573
Consented for TAR registry	5,015	115	482	5,497
Consented to notify PCP of screening results	not collected	111	481	not collected
# past screeners diagosed with ARD seen for f/u	not collected	812	2550	not collected

Table 3 details demographic data related to age and gender of the screening population.

TABLE 3: DEMOGRAPHICS OF SCREENING PARTICIPANTS				
Demographics	**Before Current Grant 7/1/11-8/31/19**	**Yr. 1 Q4 6/1/20-8/31/20**	**Yr. 1 Total 9/1/19 - 8/31/20**	**Cumulative totals**
# screenings	6,563	143	599	7,162
# females	3,448	90	355	3,803
# males	3,115	53	244	3,359
# under age 35	351	13	27	378
# between 35-49	1,289	28	116	1,405
# between 50-64	3,279	73	294	3,573
# age 65+	1,644	29	162	1,806

Table 4 summarizes important clinical findings including the number of participants who report respiratory symptoms that may be asbestos related, the number with abnormal spirometry breathing tests, and for this grant, we've added the number with abnormal body mass index (BMI). This information is used in clinical decision making to determine whether a CT scan should be performed. Occasionally, participants will not have a chest x-ray but request

screening anyway. This is usually because only a CT is medically warranted, the individual is too young, he/she refused the chest x-ray, or she is concerned about possible pregnancy. The number of abnormalities identified on CXR is low because CARD medical providers do not typically diagnose ARD from x-rays. If ARD is suspected, based on ATS criteria, a CT scan is ordered. CT scans are considered the gold standard for ARD imaging.

TABLE 4: CARD CLINICAL FINDINGS ASSOCIATED WITH ASBESTOS RELATED DISEASE				
CARD Clinical Findings	Before Current Grant 7/1/11-8/31/19	Yr. 1 Q4 6/1/20-8/31/20	Yr. 1 Total 9/1/19 - 8/31/20	Cumulative totals
# screenings	6,563	143	599	7,162
# symptomatic	4,408	99	381	4,789
# abnormal spirometry	1,699	39	171	1,870
# abnormal BMI (≥30)	not collected	59	248	248
# CXRs completed	6,361	141	592	6,953
# no CXR done	202	2	7	209
# abnormal CXR (CARD)	394	3	17	411
pleural only	356	3	15	371
interstitial only	19	0	1	20
both	19	0	1	20
# CTs completed	4,229	81	308	4,537
# abnormal CT (CARD)	2,525	41	143	2,668
pleural only	1,988	36	122	2,110
interstitial only	12	1	5	17
both	525	4	16	541

Table 5 describes significant findings of ARD screening. These findings include focal opacities, masses, and confirmed cancers. In addition, data is now being collected to track incidental findings, specialist referrals, and depression follow-ups completed as part of screening. Confirmed cancers that are possibly asbestos related include lung, colon, rectum, larynx, stomach, esophagus, pharynx and ovary. These are based on Medicare's Environmental Health Hazards checklist. Only cancers for which CARD has medical record confirmation are reported. Patients with significant findings are referred for appropriate follow-up, but many are referred to primary care rather than specialists for initial evaluation. Not all patients share the results of their follow-ups with CARD. Focal opacities are common in screening studies, and their prevalence is well documented in literature. Only a small percentage of focal opacities turn out to be cancers, however they are all tracked to be followed in future screenings. They are also tracked because individuals between the ages of 55 and 84 with at least 20 pack years of smoking history and documented exposure to asbestos with a nodule greater than 6mm (this was increased from 4mm previously per updated Fleischner Society Guidelines released in 2018) can enroll in the lung cancer screening program. Lung masses reported in this table do not include those identified through the lung cancer screening program. One part of the questionnaires completed by screening patients includes a depression assessment. If participants' scores are abnormally high, they are referred to the Case Manager for follow-up assessment and possible referral to other community support services.

TABLE 5: SIGNIFICANT FINDINGS IDENTIFIED THROUGH ARD SCREENING				
Significant Findings	Before Current Grant 7/1/11-8/31/19	Yr. 1 Q4 6/1/20-8/31/20	Yr. 1 Total 9/1/19 - 8/31/20	Cumulative totals
# lung masses	57	0	6	63
# thyroid masses	22	0	0	22
# kidney masses	23	0	0	23
# breast masses	19	0	1	20
# other masses	52	0	1	53
Total # masses identified	173	0	8	181
# focal opacities	1,123	40	160	1283
# cancers verified possibly asbestos related	not collected	2	14	not collected
# participants w/ incidental findings	not collected	52	185	not collected
# specialist referrals	not collected	0	3	not collected
# depression follow-ups completed	not collected	50	190	not collected

Fecal Occult Blood Testing:

Fecal occult blood testing (FOBT) is offered to all screening participants between the ages of 50-75 since asbestos exposure can increase risk of developing colon cancer. If a participant had regularly scheduled colonoscopies or refused participation for another reason, they were not given an FOBT test kit. Eight of 31 FOBTs given (26%) in quarter 4 were returned and more completed FOBT tests will likely be returned after the end of the quarter. For those who are given an FOBT but do not return it, a follow-up letter is mailed as a reminder. For those with positive results, a repeat FOBT is offered as well as a referral for further follow-up.

TABLE 6: FECAL OCCULT BLOOD TESTING FOR EARLY DETECTION OF COLON CANCER				
Fecal Occult Blood Tests	Before Current Grant 7/1/11-8/31/19	Yr. 1 Q4 6/1/20-8/31/20	Yr. 1 Total 9/1/19 - 8/31/20	Cumulative totals
# FOBTs given	2,223	31	204	2,427
# FOBTs returned	846	8	97	943
# FOBTs abnormal	4	0	0	4

Outside Radiology Reads:

A reader from a panel of five certified B-readers, including three radiologists, read every image taken through the screening program. Screening CT scans are only distributed to the three radiologists; chest x-rays are distributed to all five B-readers on the panel. Images are distributed by mail to readers in a systematic cyclic process to ensure even workloads. Outside reads typically take 4-7 weeks to be returned, so the number of returned reads reported for each new quarter is usually low. Cumulative end of the grant year totals of reads received will reflects all of them, even though they were not received during the grant quarter that the participant was screened in.

TABLE 7: SINGLE OUTSIDE READ RESULTS BY B-READER (CXR) OR RADIOLOGIST (CT)				
Outside Read Findings	Before Current Grant 7/1/11-8/31/19	Yr. 1 Q4 6/1/20-8/31/20	Yr. 1 Total 9/1/19 - 8/31/20	Cumulative totals
# CXRs	6,361	141	592	6,953
# B reads	6,313	97	535	6,848
# B reads abnormal	551	7	31	582
Pleural	452	5	24	476
Interstitial	73	1	4	77
Both	26	1	3	29
# CTs	4,229	81	308	4,537
# Outside CT reads	4,163	49	258	4,421
# Outside CT reads abnormal	1,453	10	50	1,503
Pleural only	797	2	15	812
Interstitial only	370	7	29	399
Both	286	1	6	292

Quality control panel readings of radiographs and HRCT scans:
Twice annually, peer review sessions are held as a quality control measure. During each session, all readers on the panel attend a telephone conference to review image reads with their peers. Prior to each conference call the B-readers each read the same set of 54 chest x-rays, and the radiologists each read the same set of 24 CT scans. Their read results are provided to the panel and any dissention in how the images were read by the groups of readers is discussed. Both peer review sessions for year 01 were held simultaneously in August of this year due closings with coronavirus taking read sending and returning take longer. Dr. Noonan has not yet evaluated the results of peer reviews but the outside reader panel was able to meet and review both sets of images. Dr. Noonan's evaluation will be included in the final annual report.

Lung Cancer Screening for High Risk Individuals:
Early detection of possible asbestos-related cancers through participation in Lung Cancer Screening (LCS) is available to high risk individuals. Participants eligible for the LCS program are between the age of 55-84, have at least 20 pack years of smoking history, and were diagnosed with ARD **or** had Libby asbestos exposure and a nodule greater than 6 mm. A thoracic radiologist experienced in lung cancer detection reads all low-dose CT scans (LDCTs). Lung cancers reported in Table 8 do not include lung cancers identified through the asbestos related disease screening program. 18% of this quarter's lung cancer screening participants were smokers and they were given brief cessation education and counselling and offered free one-on-one counselling as well. Each smoker participating in the program also received smoking cessation materials with their lung cancer screening results. For those with normal lung cancer screening results, the participant is typically contacted by CARD staff with results after a medical provider reviews them. A provider visit is scheduled to discuss results if requested by the participant and/or by the CARD medical provider when results warrant it. Every participant is educated about the option of having a provider visit and about the benefits and risks of LDCT screening in a pre-engagement pamphlet sent prior to participation. Results letters are sent to each participant after screening to keep for their records. CARD Clinic staff also continue to participate in a quality assurance project with Montana Department of Public Health and Human Services and Mountain-Pacific Quality Health to improve rate and number of patients included in lung cancer screening as well as improve workflow and data management of the program.

TABLE 8: LUNG CANCER SCREENING OUTCOMES SPECIFICALLY FROM LUNG CANCER SCREENING PROGRAM				
Lung Cancer Screening	**Before Current Grant 7/1/11-8/31/19**	**Yr. 1 Q4 6/1/20-8/31/20**	**Yr. 1 Total 9/1/19 - 8/31/20**	**Cumulative totals**
# completed LDCTs	3,008	192	524	3,532
# new LCS participants	not collected	14	65	not collected
# of established participants	not collected	178	449	not collected
# less than annual f/u	not collected	16	52	not collected
# referrals	not collected	3	12	not collected
# confirmed cancers	29	1	3	32
# other findings	not collected	0	1	not collected
# current smokers	not collected	34	114	not collected
# no longer participating	not collected	8	33	not collected

Lung cancer screening is considered most effective when conducted annually so that cancers can be found at the earliest stages and be treated quickly. Table 9 shows the number of lung cancer screening participants using the program over consecutive years. Participants join the program whenever they become eligible and interested, but some drop out due to being diagnosed with lung cancer, dying, moving out of the area, aging out of the program, or being lost to follow-up for some other reason. For those who remain local and eligible to participate in the program, three recall attempts are made annually to encourage ongoing participation.

TABLE 9: CONSECUTIVE YEARS LUNG CANCER SCREENING				
Consecutive years	**Before Current Grant 7/1/11-8/31/19**	**Yr. 1 Q4 6/1/20-8/31/20**	**Yr. 1 Total 9/1/19 - 8/31/20**	**Cumulative totals**
Established LDCT participants	478	178	518	not cumulative
Participated 2-4 consecutive years	283	85	236	not cumulative
Participated 5-8 consecutive years	141	66	162	not cumulative
Rescreened but not consecutive years	54	23	78	not cumulative

ANA screening:

A screening blood test for antinuclear antibodies (ANA) has been added to the ARD screening program for this grant. The test is offered to all ARD screening participants based on research that has shown a relationship between Libby asbestos exposure and autoimmune disease. Table 10 summarizes ANA test results. Those with positive results are educated and if medically warranted brought in for an additional provider visit and/or referred for follow-up. Results are also sent to Dr. Jean Pfau quarterly for review and interpretation.

TABLE 10: ANA Results	**Before Current Grant 7/1/11-8/31/19**	**Yr. 1 Q4 6/1/20-8/31/20**	**Yr. 1 Total 9/1/19 - 8/31/20**	**Cumulative totals**
# ANA tests completed	not collected	126	424	not collected
# Abnormal ANA	not collected	28	93	not collected
# Abnormal ANA requiring f/u	not collected	5	23	not collected

ANA interpretation by Dr. Pfau:

This fourth quarter screening group continues with trends reported previously for Libby, by presenting with a high frequency of positive ANA tests and of autoimmune diagnoses. However, this group had four reported cases of lupus, three sarcoidosis, and no scleroderma, which were three of the diseases with significant increases in prevalence in Libby compared to expected

(Diegel, R., 2018). There were more cases of autoimmune diseases that are not characterized by having positive ANA tests, so ANA testing would not assist with screening for those diseases. This screening group has a very high frequency of autoimmune symptoms (58%), suggesting a continuing concern about undiagnosed autoimmune conditions that do not meet diagnostic criteria, but that fit the diffuse characteristics of the autoimmune conditions seen in populations exposed to Libby Asbestiform Amphiboles (LAA) (Diegel R., 2018).
In this group, a negative ANA test was not significantly associated with likelihood of a negative CT test, contrary to what we hypothesized from our previous work (Pfau, J., et al., 2019). Consistent with our previous publication, there was a higher frequency of positive CT scans with pleural findings among those patients who are ANA positive this quarter, although this was not statistically significant. However, these data are preliminary, with very small numbers of patients. The data will be further evaluated in the future when more of the CT scans are completed.

Smoking Cessation:
Smoking cessation continues to be extremely important for patient health maintenance and the screening program goals. Respiratory therapists and spirometry techs provide brief counseling to all identified smokers upon review of their tobacco use history questionnaire. Past quit attempts and current interest in quitting are explored. If interested, educational material is given and referral is made to CARD's Case Manager who was recently trained as a tobacco treatment specialist. Medical providers also educate about the importance of smoking cessation and refer to the Case Manager for free cessation counseling when patients express genuine interest in pursuing cessation. The Case Manager provides education and resources such as CARD's smoking cessation booklet and Montana Quit Line information (counseling, follow up calls and cessation medications at low or no cost). Smoking cessation information is placed in the waiting room and all patient care rooms as well. Community education about smoking prevention and cessation has been added to this table for this grant.

TABLE 11: SMOKING CESSATION OUTCOMES AND OURTREACH ACTIVITIES

Smoking Cessation	Before Current Grant 7/1/11-8/31/19	Yr.1 Q4 6/1/20-8/31/20	Yr. 1 Total 9/1/19 - 8/31/20	Cumulative totals
# of screeners who smoked	706	30	98	804
# who quite since last screening appointment	50	1	8	58
# brief cessation ed by medical staff	395	24	77	472
# booklets mailed regionally/nationally	not collected	15	20	not collected
# booklets given in clinc/local	not collected	36	120	not collected
# individual follow up smoking cessation sessions	not collected	10	64	not collected
# engaged in ongoing counseling	47	3	17	64
community members educated re: smoking cessation/prevention	not collected	55	523	not collected

Goal 2: Conduct Nationwide Outreach to Raise Awareness (of screening and certain Medicare benefits) **and Goal 3: Provide Nationwide Health Education (**to detect, prevent, and treat environmental health conditions)

Outreach and education go hand in hand. The goals of providing outreach and education, about asbestos health and lung cancer screening, risk factors, asbestos related disease, health management, and certain Medicare benefits are often approached as one combined goal. Quality control processes are in place as all CARD employees involved in outreach and education work very closely with the screening Project Director and, as appropriate, the Medical Providers, to develop and conduct screening outreach and educational activities. All final printed materials and community engagement activities are approved by the Project Director. CARD's physicians review and approves all technical and medical educational materials for professional audiences. Three main outreach and education target audiences include current and potential screening participants, members of the general public who could encounter Zonolite attic insulation or other environmental health hazards, and medical professionals. Each screening participant receives a patient education book along with in-person education by CARD staff, and all smokers are offered free smoking cessation services by CARD's Case Manager. In addition, anyone diagnosed with ARD receives benefits education about Medicare benefits and the Medicare Pilot Program for Asbestos Related Disease (MPPARD).

Outreach Efficacy for Enrollment in Certain Medicare Benefits for ARD:
A detailed goal of the grant is to increase awareness about Medicare benefits available for individuals diagnosed with ARD resulting from Libby asbestos exposure. Traditional Medicare becomes available after ARD diagnosis as a result of Libby asbestos exposure regardless of the individual's age or disability status. Receipt of Medicare is facilitated by placing an EHH (Environmental Health Hazard) designation on an individual's Medicare status if they are diagnosed with Libby ARD. The MPPARD is also available for EHH Medicare patients who live in the program's designated geographic area (The counties of Lincoln, Flathead, Glacier, Lake, Sanders, Mineral, and Missoula in Montana; Benewah, Bonner, Boundary, Clearwater, Kootenai, Latah, and Shoshone in Idaho; and Ferry, Lincoln, Ponderay, Spokane, Stevens and Whitman in Washington.)
The numbers reported below in Table 12 are not all screening participants as some had a diagnosis of ARD resulting from Libby asbestos exposure prior to implementation of the current and prior screening grants. The number of people over 65 is low because they already have Medicare and only need an EHH if they are eligible for and interested in the MPPARD.

TABLE 12: ENVIRONMENTAL HEALTH HAZARD (EHH) DESIGNATION AND ELIGIBILITY FOR BENEFITS

Certain Medicare Benefits	Before Current Grant 7/1/11-8/31/19	Yr.1 Q4 6/1/20-8/31/20	Yr. 1 Total 9/1/19 - 8/31/20	Cumulative totals
# of EHHs completed	3,263	37	118	3,381
# of EHHs for people over 65	1,101	10	39	1,140
# of EHHs for people under 65	2,162	27	71	2,233
# who have improved access to medical care for chronic conditions	716	15	34	750

Table 13 reports use of MPPARD benefits. The categories reported in the table were updated during the last year of the prior grant to reflect the most accurate numbers available to CARD. After an individual is diagnosed through the screening program, the process to get on the MPPARD takes two months. Table 13 also includes the number of individuals who have improved access to medical care for chronic conditions. This means they are under age 65, have signed up for Medicare via EHH, and they have a chronic condition that needs ongoing medical monitoring. The chronic conditions include: rheumatoid arthritis, lupus, chronic obstructive pulmonary disease (COPD), congestive heart failure (CHF), pacemaker, intraventricular cardiac defibrillator (CD), hypertension, or diabetes. In addition to the numbers reported in the table below, during quarter 4, 375 MPPARD beneficiaries completed health exams related to annual and ongoing disease monitoring.

Table 13: UTILIZATION OF PILOT BENEFITS

Pilot Benefit Utilization	Before Current Grant 7/1/11-8/31/19	Yr.1 Q4 6/1/20-8/31/20	Yr. 1 Total 9/1/19 - 8/31/20	Cumulative totals
# enrolled in Medicare Pilot	1,728	7	50	1,778
# **screening** participants enrolled in Pilot after diagnosis	672	0	5	677
# of paid Pilot claims	not collected	1,678	7,658	not collected
# Pilot related encounters (face to face, email, phone call, education)	not collected	361	788	not collected
# Pilot approved service authorizations processed	not collected	228	750	not collected
# community Pilot education	not collected	60	95	not collected

Why Are Individuals Being Screened?

CARD tracks why individuals are being screened to better understand and meet the needs of new and potential screening participants. This facilitates our efforts to continue reaching potential participants who aren't aware of the free screening program. The information also helps CARD develop effective outreach materials and to focus educational efforts on areas of interest to potential and current screening participants.

TABLE 14: WHY ARE YOU BEING SCREENED?

	Before Current Grant	Yr.1 Q4 6/1/20-8/31/20	Yr. 1 Total 9/1/19 - 8/31/20	Cumulative totals
# answered the question	3,150	91	409	3,559
# LDS	643	22	97	740
# in clinic	2,507	126	369	2,876
Medical concerns	1,382	18	98	1,480
Family member diagnosed	739	20	91	830
Access to Benefits	268	0	19	287
Support research	316	2	20	336
Legal reasons	54	0	7	61
Screening purposes/multiple	280	50	170	450
Employer Requested Screening	111	1	1	112

Outreach Effectiveness Measure:
When individuals engage in screening, they are asked the multiple choice question, "How did you hear about the CARD screening program?" to help CARD measure the effectiveness of outreach activities. Answers are reported in the table 15 with in-clinic and long distance reported separately as outreach efforts for those two populations are different. Results are reviewed by the Project Director, and our contracted marketing firm, Brand It, to determine most effective methods and where to focus efforts moving forward.

TABLE 15: HOW DID YOU HEAR ABOUT THE CARD SCREENING PROGRAM?

How did you hear about screening? (IC= in clinic, LD= long distance)	Before Current Grant	Yr.1 Q4 6/1/20-8/31/20	Yr. 1 Total 9/1/19 - 8/31/20	Cumulative totals
IC- # who answered	3,213	75	315	3,528
IC- traditional advertising (radio, TV, newspaper)	1,548	27	149	1,697
IC- website/social media	0	9	36	36
IC- Community networking (parades, local events)	1,329	39	123	1,452
LD- # who answered	600	18	97	794
LD- traditional advertising (radio, TV, newspaper)	244	1	27	271
LD- website/social media	44	4	29	73
LD- Community networking (events, word of mouth)	312	13	41	353

Targeted Outreach and education- Local and regional/national:
Many residents of the local area have still not participated in screening, and others have only been screened once a number of years ago. For this reason, recruitment continues locally, and education as well as community outreach are extremely important. Ongoing education to locals helps remind them about the free screening program, reinforces the importance of rescreening, and corrects any misinformation that takes hold through social media or community conversations. Maintaining and improving relationships with local businesses and tourism efforts are also very important to counter a deep-rooted community concern that Libby's asbestos legacy hurts the local economy and deters tourism. CARD works to be a positive force in the community supporting local causes and participating in community events as much as possible, especially educationally. The local area is considered the communities of Libby, Troy, Eureka, Yaak, Kila, Marion, Bull Lake, Trout Creek, Thompson Falls and Noxon.

Table 16 details local outreach and education efforts. The parade that CARD participated in was for the 4th of July. Numerous give away items were distributed during the parade along with information about CARD Screening. The eight local events sponsored during quarter 4 included Kiwanis's free school supplies event, called the Student Stand Down, where hand sanitizers with the CARD Screening logo were donated, Ignite the Nites car show where 400 goodie bags given out included information about CARD screening, the Milpond MotoX event, our VFW's flag program, Kootenai Country Montana's Chainsaw Carving Championship, the Ben Graham

Junior Golf Team Sponsorship and a club golf equipment fundraiser, and lastly a kids' fishing day hosted by the Rotary Club. Community meetings attended included Rotary, Kiwanis, a mental health coalition meeting, and numerous COIVD-19 community task force meetings.
In addition, every other week a booth was setup at the local Farmer's Market. Each time, screening applications and outreach items were given away at the market and approximately 30-40 people visited the booth.
In addition to the local outreach and education efforts in the table, masks were given away to local clubs, teams, business owners, motels and more, and face shields were donated to the local museum. Included with all masks and face shields given away, a pamphlet about CARD Screening was included. CARD also participated in a vocational rehabilitation program with Flathead Industries helping to train and assess a developmentally disabled volunteer's job skills. The volunteer worked for two hours on Tuesdays and helped put together questionnaire packets and stuff newsletter envelopes during quarter 4.
Google AdWords was used to provide outreach and education electronically. An impression is counted each time our ad is shown on a search result page. Clicks are counted when our ad is clicked on. Website visits include all traffic that is coming into the website. Patient education website visits are the total web visits to all web pages that contain patient education information. Provider education is the same but with provider education information.

TABLE 16: TARGETED OUTREACH AND EDUCATION- LOCAL (Lincoln County)

Method	Before Current Grant 7/1/11-8/31/19	Yr.1 Q4 6/1/20-8/31/20	Yr. 1 Total 9/1/19 - 8/31/20	Cumulative totals
Local newspaper ads	598	28	157	755
Education article in newspapers	47	3	12	59
Health Link and Health Resource Guide	10	0	2	12
Radio ads	9,500	264	4,661	14,161
TV ads	8,236	0	422	8,658
Educational brochures given (screening, LCS, LDS)	443	215	298	741
Patient Education booklets	3,452	72	310	3,762
Parades	36	1	2	38
Community events sponsored	140	8	45	185
Commmunity meetings	218	19	77	295
Google AdWords Impressions	not collected	2,345	10,951	10,951
Google AdWords Clicks	not collected	238	771	771
Website visits	not collected	535	1,705	1,705
Website visits to patient education pages	not collected	185	624	624
community presentations/ events attended	76	7	17	93
website visits to provider education pages	not collected	73	207	207
newsletters sent locally	not collected	4,457	8,143	8,143

Table 17 details regional and national outreach and education efforts. YouTube channel numbers are a count of how many times our videos were watched.

TABLE 17: TARGETED OUTREACH AND EDUCATION- REGIONAL & NATIONAL				
Method	**Before Current Grant 7/1/11-8/31/19**	**Yr.1 Q4 6/1/20-8/31/20**	**Yr. 1 Total 9/1/19 - 8/31/20**	**Cumulative totals**
Newspaper -outreach	76	37	68	144
Radio ads -outreach	10,242	0	755	10,997
TV ads -outreach	8,236	10,176	21,888	30,124
Website -outreach	not collected	4,580	17,299	17,299
Website -patient education	not collected	629	2,411	2,411
Website -provider education	not collected	239	744	744
Google AdWords Impressions- outreach	not collected	4,726	53,850	53,850
Google AdWords Clicks- outreach	not collected	633	3,165	3,165
Educational brochures given (screening, LCS, LDS)	not collected	47	119	119
YouTube Channel	14,100	675	2,822	16,922
Patient Education booklets - education	3,298	58	277	3,575
Lung cancer screening brochures - education	180	12	64	244
Health promotion events sponsored -outreach	36	1	5	41
Newsletters sent	not collected	3648	7,434	not collected

Targeted Outreach/Education to healthcare professionals

Raising awareness about Libby asbestos within the medical community is important to help facilitate referrals and coordinate care. Provider education packets are sent to primary care providers of screening participants with their screening results. Mailings included information about asbestos related disease and exposures as well as CARD's screening program that were sent to occupational health clinics around the country specifically focused on areas where Dr. Black presented with Dr. Albert Miller at the Project ECHO Miners' Wellness TeleECHO Clinica, a virtual educational platform for professionals involved in the care of coal, uranium and nuclear weapons' workers in the United States, sponsored by the University of New Mexico and the Miners' Colfax Medical Center. Their session was held on Wednesday, June 22 titled, "Asbestos exposure in miners and nuclear weapons workers." Dr. Lee and Penny, CARD's COVID testing coordinator presented to the Rotary Club of Kootenai Valley on Monday, Aug. 3 describing CARD's processes put in place due to the pandemic in order to protect patients. Donated face shields were distributed to healthcare facilities in need including dental clinics, group homes, senior citizens' centers, mental health, and more.

TABLE 18: TARGETED OUTREACH TO- HEALTHCARE PROFESSIONALS				
Method	**Before Current Grant**	**Yr.1 Q4 6/1/20-8/31/20**	**Yr. 1 Total 9/1/19 - 8/31/20**	**Cumulative totals**
Website -provider education	not collected	239	744	not collected
Mailings	not collected	74	121	not collected
CARD newsletter -education	27,948	602	1,056	2,407
provider education book mailed	1,351	49	271	316
Professional Conferences - education/outreach	45	1	3	191
Medical professionals -education	188	22	46	46
Press release pick ups	not collected	0	228	not collected
other targeted outreach efforts	not collected	1- masks	301	not collected

Website Use:

CARD's website is an important tool for outreach, education, and communication with target populations. Table 19 summarizes use of CARD's website during quarter 4. Website materials are regularly updated and use is tracked to help improve content for users. Website updates this quarter included updating staff and board members as well as updating verbiage throughout the website including the following pages: Asbestos Health Screening, Understanding Asbestos, Disease Management, Health Care Benefits, Prevention, Helpful Resources, About CARD, CARD History, Community Outreach, Community Involvement, Who is CARD? In addition,

monthly web backups and plugin updates were performed.

TABLE 19: Website use

Website Use	Before Current Grant	Yr.1 Q4 6/1/20-8/31/20	Yr. 1 Total 9/1/19 - 8/31/20	Cumulative totals
Screening applications submitted via website	202	25	105	307
Contact CARD emails via website	433	34	106	539
# of website sessions	103,871	2,390	9,441	113,312
# pages viewed	252,023	4,580	17,299	269,322
session length 30+ minutes	1,398	11	47	1,445
session length 10-30 minutes	13,642	77	363	14,005
session length 3-10 minutes	29,537	121	490	30,027
session length 1-3 minutes	21,664	163	567	22,231
session length 31-60 seconds	9,413	109	367	9,780
session length 11-30 seconds	12,448	109	370	12,818
session less than 10 seconds	bounce factor	1,800	7,237	7,237
Page depth: 1-9 Pages viewed in se	25,499	2,345	10,200	35,699
10-14 Pages viewed in session	1,709	24	348	2,057
15-19 Pages viewed in session	614	4	175	789
20+ Pages viewed in session	734	10	253	987
# of users	39,074	2,014	8,782	47,856
new users	not collected	1,988	not cumulative, reported as a percentage	not cumulative, reported as a percentage
returning users	not collected	26		
Male users	not collected	295		
Female users	not collected	347		
Age between 18-24	not collected	62		
Age between 25-34	not collected	141		
Age between 35-44	not collected	96		
Age between 45-54	not collected	113		
Age between 55-64	not collected	97		
Age 65+	not collected	94		

Social Media and other outreach efforts:

In addition to the above outreach and education, CARD had been working to increase our social media presence on both Facebook and Instagram. Our Facebook page reaches, local, national, and even international audiences. We had 39 posts during the fourth quarter that generated 20,793 total people reahed, 2,832 post enagements, 605 reactions, 167 comments, and 120 total shares. CARD has 2,620 followers on our Facebook page and 112 followers on Instagram. Nine Instagram posts were made during the reporting period which reached 451 accounts generating 53 likes and 12 comments.

Other outreach efforts this quarter included the redesign and update of CARD's overview flyer, a general screening brochure, our provider education booklet, and our patient education booklet. Brand It is also working to develop an accredited continuing education course for providers in asbestos related disease. The classes, when created, will be available on CARD's website.

CARD Annual Rally:

CARD's annual Rally was held on November 7, 2019 during quarter 1. The event was staffed by over 12 CARD employees and 10 community health education partners who volunteered to help host the free, two-hour, fun, educational, and family-friendly afterschool event in the Libby elementary school gymnasium. The annual theme was *Navigating your way to better health*. Six

interactive stations that engaged and educated participants included the following topics: (1) asbestos (2) smoking and vaping (3) alcohol and drugs (4) resources for ages 0-5 (4) resources for teens and adults (5) resources for seniors.
The annual Rally event is an excellent way to engage local youth and their families in education about asbestos related disease and other important health topics. Upon completion of all booths, prizes or other useful items such as mini first aid kits with CARD Screening information were offered. Due to COIVD-19 concerns, the CARD Rally for 2020-2021 has been postponed from fall to spring for the upcoming grant year.

CHALLENGES:
REASON FOR DELAY AND ANTICIPATED CORRECTIVE ACTION OR DELETION

COVID-19 modifications:
During quarter 4, the screening programs were impacted by COVID-19 with a decrease in the number of patient that could be seen. This decrease was related to both restrictions such as social distancing and patient cancellations due to concern over the virus. Screening activities resumed after the CARD Clinic was closed down in April and May. Reopening included many modifications to ensure patient and staff safety during the pandemic. Precautions put in place for COVID-19 have included; requiring everyone in the building to wear a mask or face shield, monitoring symptoms and temperatures of staff and patients coming into the clinic, sending information about COIVD-19 precautions to patients prior to their visits including a request that patients do not bring extra people to their appointments. We've also implemented the use of a specific sick room for anyone who is symptomatic but needs to be seen, we perform hourly cleaning of surfaces in public areas and in between every patient in offices/patient rooms, we are limiting the number of people allowed in our waiting rooms and separating seating to be six feet, we are encouraging long distance participation in screening for anyone not from the local area, and of course we are encouraging hand washing and flu shots. CARD is also conducting pre-screening of patients planning to come into the clinic as part of our appointment reminder phone calls. Those with COVID-19 symptoms are asked to reschedule or sent to a nurse for evaluation of their need to come in.
In addition to clinical modifications, changes to outreach related to the pandemic have also impacted the grant. Many events, both locally and nationally have been cancelled and others have changed to an online format limiting outreach and education opportunities. CARD has been able to get creative with some local activities including hiding painted rocks around our community that were decorated by our staff members. When found, the rocks are turned in at CARD for giveaways with CARD's logo and screening information on them. We also ordered face masks with the CARD Screening logo that have been given to businesses throughout the community. Use of facial coverings is mandated in Montana, so the masks are well used and seen throughout the local community on a daily basis providing a nearly constant reminder of CARD's screening program. In addition, CARD is working with our county health department to offer free community COVID-19 testing. Tests are being done outdoors at a drive through test site to ensure safety of patients and staff in the clinic.

Pulmonary function testing:

Many pulmonary function labs have been closed since COVID-19 started while others are implementing safety measures and continuing operations. One safety measure that has been implemented by some facilities is requiring a negative COVID-19 test prior to appointments. CARD has received bills for COVID-19 tests from patients participating in long distance screenings. We are working with ATSDR to allow grant funding to cover these tests. CARD has been unable to implement a similar requirement for a negative COVID-19 test prior to breathing tests being done because there has been a long turnaround time for COVID tests in our area and rapid tests have been unavailable. We have however implemented the following precautions when performing breathing tests for screening: tests are conducted in rooms with medical grade HEPA filters, techs performing tests wear PPE including a face mask and shield, patients wear facemasks in the rooms when not performing the tests, following the testing, rooms are left alone for 20 minutes so that airborne particles/pathogens can settle and surfaces are then disinfected afterwards and prior to the room's next use. As always, disposable bacterial/viral filters are used for each patient, and nose clips and pneumotachs are sanitized using bleach between uses. CARD is also pricing negative pressure HVAC systems for areas of the clinic where breathing test are conducted and we continue to request rapid test kits when they become available to us.

STATUS OF PROGRAM, SCREENING, INFRASTRUCTURE, AND STAFF

The grant goals and objectives were implemented successfully even with COVID-19 restrictions during the fourth quarter of year 01. Unfortunately, the clinic was forced to close for over six weeks during quarter three of this year because of the COVID-19 pandemic and grant activities, for the most part, ceased during that time. CARD laid off staff during our closure and brought back all but three of those staff when we reopened. The staff members laid off permanently were Outreach Coordinator, Dusti Thompson, Recall Coordinator, Seth Brookshire, and Imaging Coordinator, Cheryl Fox. Their duties have been absorbed by other staff members who have more time due to our decreased patient volume. CARD's infrastructure remains solid with a strong administrative and implementation team, our Medical Director, a second physician, and a physician assistant all contribute to the success of the grant. Quality assurance processes remain successfully in place for delivery of ARD and LCS screening activities, data management, outreach and educational activities. Completeness and accuracy of the database is evident by consistency of data reported across multiple tables. All data is quality controlled for accuracy before reports and table outcomes are generated. All screening CT scans are read by a qualified physician, so CARD's physicians read all CT images ordered by our physician assistant. Screening participants often offer praise and share their satisfaction. A specific screening patient who visited CARD in June complemented our Physician Assistant, Miles Miller, saying that he was very impressed with the care he received and how Miles explained everything to him in an understandable and personable manner. An improvement planned for year 2 of the grant is mailing patient satisfaction surveys after visits and reporting those results.

MEASURES OF EFFECTIVENESS

Measures of effectiveness were reported under each specific goal above.

FINANCIAL RECAP OF GRANT EXPENDITURES

At the end of the fourth quarter of year 01, the grant was expended in the amount of $1,967,828.82 (79%) of the total grant award for year 01 which was $2,499,969.00. It is anticipated that more bills will come in expending additional funds prior to our final annual report's submission, but the entire budget will not be spent due to CARD's closure and slowdown during this grant year which was due to the COVID-19 pandemic.