Libby Montana's Public Health Emergency, Asbestos Health Screening
Center for Asbestos Related Disease
Grant Number 6 NU61TS000295-01-01
Year 2, Quarter 1
(September 1, 2020 through November 30, 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 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 first quarter of year 2. Also included are year 1 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 total 9/1/19- 8/31/20	Yr. 2 Q. 1 9/1/20 - 11/3020	Cumulative totals
# ARD screenings	6,563	599	90	7,252
# CT diagnostic appointments	4,229	307	48	4,584
# ARD diagnosed	2,552	143	16	2,711
# ARD Medicare eligible	2,880	166	20	3,066
% diagnosed w/ environmental exposure only	not collected	85%	88%	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. The number of screenings this quarter were significantly reduced from past quarters due to the pandemic which is discussed in more detail under the challenges section of this report. Even after years of asbestos health screening programs in the Libby, Montana; new screening patients participating for the first time make up a significant portion of those seen (46% this quarter). 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 if they cannot travel to Libby. Due to the Coronavirus pandemic, CARD promoted more long distance screenings to limit travel and potential exposures. 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 modified our data collection for this grant to record the number of past screeners who have been diagnosed with ARD and who follow-up at CARD. During this quarter, with a new employee learning the IT role, we were unable to report this number but it will be reported in quarter 02.

TABLE 2: TYPES OF SCREENING APPOINTMENTS AND DIAGNOSIS RATES				
Appointment Type	**Before Current Grant 7/1/11-8/31/19**	**Yr. 1 total 9/1/19- 8/31/20**	**Yr. 2 Q. 1 9/1/20 - 11/3020**	**Cumulative totals**
# screenings	6,563	599	90	7,252
# new screening patients	4,806	252	41	5,099
# rescreenings	1,757	347	49	2,153
# Lincoln County, MT residents	3,366	310	43	3,719
# LDS eligible screenings done in clinic	2,679	114	24	2,817
# of LDS patients	519	125	15	659
# in clinic appointments (includes both visits)	9,445	680	103	10,228
#LDS appointments (includes both visits)	1,347	226	35	1,608
Consented for TAR registry	5,015	483	71	5,569
Consented to notify PCP of screening results	not collected	479	61	not collected
# past screeners diagosed with ARD seen for f/u	not collected	2550	will report next quarter	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 total 9/1/19- 8/31/20**	**Yr. 2 Q. 1 9/1/20 - 11/3020**	**Cumulative totals**
# screenings	6,563	599	90	7,252
# females	3,448	355	50	3,853
# males	3,115	244	40	3,399
# under age 35	351	27	5	383
# between 35-49	1,289	116	16	1,421
# between 50-64	3,279	294	44	3,617
# age 65+	1,644	162	25	1,831

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 test results, and for this grant, we've added the number with abnormal body mass

index (BMI) as well. This quarter, 39 of 90 (43%) of screening participants did not have a spirometry test due to pandemic precautions. Symptoms, spirometry results and BMI information are all used in conjunction with health and exposure histories for clinical decision making to determine whether a CT scan should be performed. A CXR is done on every screening participant but occasionally participants will refuse their chest x-ray and participate in screening anyway. This is usually because only a CT is medically warranted based on past medical care or referral, the individual is too young to be exposed to radiation for screening purposes, or she is concerned about possible pregnancy. The number of abnormalities identified on CXR is low because CARD's 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 total 9/1/19- 8/31/20	Yr. 2 Q. 1 9/1/20 - 11/3020	Cumulative totals
# screenings	6,563	599	90	7,252
# symptomatic	4,408	381	51	4,840
# abnormal spirometry	1,699	171	13	1,883
# abnormal BMI (≥30)	not collected	248	28	not collected
# CXRs completed	6,361	592	88	7,041
# no CXR done	202	7	2	211
# abnormal CXR (CARD)	394	17	1	412
pleural only	356	15	1	372
interstitial only	19	1	0	20
both	19	1	0	20
# CTs completed	4,229	307	48	4,584
# abnormal CT (CARD)	2,525	143	15	2,683
pleural only	1,988	122	13	2,123
interstitial only	12	5	0	17
both	525	16	2	543

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 and tracked by CARD 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 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 total 9/1/19- 8/31/20	Yr. 2 Q. 1 9/1/20 - 11/3020	Cumulative totals
# lung masses	57	6	0	63
# thyroid masses	22	0	0	22
# kidney masses	23	0	0	23
# breast masses	19	1	0	20
# other masses	52	1	0	53
Total # masses identified	173	8	0	181
# focal opacities	1,123	159	25	1307
# cancers verified possibly asbestos related	not collected	14	9	23
# participants w/ incidental findings	not collected	252	43	295
# specialist referrals	not collected	3	0	3
# depression follow-ups completed	not collected	190	49	239

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. Thirteen of 30 FOBTs given (43%) in quarter 1 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 total 9/1/19- 8/31/20	Yr. 2 Q. 1 9/1/20 - 11/3020	Cumulative totals
# FOBTs given	2,223	204	30	2,457
# FOBTs returned	846	102	13	961
# 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 will reflect 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 total 9/1/19- 8/31/20	Yr. 2 Q. 1 9/1/20 - 11/3020	Cumulative totals
# CXRs	6,361	592	88	7,041
# B reads	6,313	592	51	6,956
# B reads abnormal	551	32	3	586
Pleural	452	26	2	480
Interstitial	73	4	1	78
Both	26	2	0	28
# CTs	4,229	307	48	4,584
# Outside CT reads	4,163	307	31	4,501
# Outside CT reads abnormal	1,453	56	5	1,514
Pleural only	797	17	2	816
Interstitial only	370	33	2	405
Both	286	6	1	293

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. The first peer review session for year 02 will be held in quarter 2.

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. 23% of this quarter's lung cancer screening participants were active smokers and they were given brief cessation education and counselling, and offered free one-on-one counselling as well. Each active smoker participating in the program 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.

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 total 9/1/19- 8/31/20	Yr. 2 Q. 1 9/1/20 - 11/3020	Cumulative totals
# completed LDCTs	3,008	524	128	3,660
# new LCS participants	not collected	65	9	not collected
# of established participants	not collected	449	119	not collected
# less than annual f/u	not collected	52	19	not collected
# referrals	not collected	12	1	not collected
# confirmed cancers	29	3	3	35
# other findings	not collected	1	0	not collected
# current smokers	not collected	114	29	not collected
# no longer participating	not collected	33	5	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 total 9/1/19- 8/31/20	Yr. 2 Q. 1 9/1/20 - 11/3020	Cumulative totals
Established LDCT participants	478	445	119	1042
Participated 2-4 consecutive years	283	238	56	577
Participated 5-8 consecutive years	141	161	50	352
Rescreened but not consecutive years	54	46	13	113

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 total 9/1/19- 8/31/20	Yr. 2 Q. 1 9/1/20 - 11/3020	Cumulative totals
# ANA tests completed	not collected	424	71	not collected
# Abnormal ANA	not collected	93	16	not collected
# Abnormal ANA requiring f/u	not collected	23	5	not collected

ANA interpretation by Dr. Pfau:

This quarter's 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 seven reported cases of RA, only one case of lupus, no sarcoidosis, and no scleroderma, which were 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). There was no significant association between a positive ANA test with a positive CT scan. 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.

References

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Diegel, R., B. Black, J.C. Pfau, T. McNew, C. Noonan, R. Flores. 2019. Case series: Rheumatological manifestations attributed to exposure to Libby Asbestiform Amphiboles. Jrnl Tox Env Health, Part A 81(15):734-747.

Pfau, J.C., T. McNew, K. Hanley, L. Swan, B. Black. 2019. Autoimmune markers for progression of Libby amphibole lamellar pleural thickening. Inhal Tox 31(11-12):409-419.

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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 is 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. During this quarter 175 community members were educated at the Farmers Markets and also at the Harvest Festival.

TABLE 11: SMOKING CESSATION OUTCOMES AND OURTREACH ACTIVITIES

Smoking Cessation	Before Current Grant 7/1/11-8/31/19	Yr. 1 total 9/1/19- 8/31/20	Yr. 2 Q. 1 9/1/20 - 11/3020	Cumulative totals
# of screeners who smoked	706	98	19	823
# who quite since last screening appointment	50	8	1	59
# brief cessation ed by medical staff	395	77	9	481
# booklets mailed regionally/nationally	not collected	32	11	not collected
# booklets given in clinc/local	not collected	154	46	not collected
# individual follow up smoking cessation sessions	not collected	64	9	not collected
# engaged in ongoing counseling	47	17	4	68
community members educated re: smoking cessation/prevention	not collected	523	175	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 approve 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 total 9/1/19- 8/31/20	Yr. 2 Q. 1 9/1/20 - 11/3020	Cumulative totals
# of EHHs completed	3,263	118	18	3,399
# of EHHs for people over 65	1,101	39	7	1,147
# of EHHs for people under 65	2,162	71	11	2,244
# who have improved access to medical care for chronic conditions	716	34	5	755

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 included are rheumatoid arthritis, lupus, chronic obstructive pulmonary disease (COPD), congestive heart failure (CHF), pacemaker, intraventricular cardiac defibrillator (CD), hypertension, and diabetes. In addition to the numbers reported in the table below, during this quarter, 242 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 total 9/1/19- 8/31/20	Yr. 2 Q. 1 9/1/20 - 11/3020	Cumulative totals
# enrolled in Medicare Pilot	1,728	50	10	1,788
# **screening** participants enrolled in Pilot after diagnosis	672	5	0	677
# of paid Pilot claims	not collected	7,658	2,005	not collected
# Pilot related encounters (face to face, email, phone call, education)	not collected	1,007	137	not collected
# Pilot approved service authorizations processed	not collected	750	158	not collected
# community Pilot education	not collected	95	175	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 7/1/11-8/31/19	Yr. 1 total 9/1/19- 8/31/20	Yr. 2 Q. 1 9/1/20 - 11/3020	Cumulative totals
# answered the question	3,150	409	77	3,636
# LDS	643	97	23	763
# in clinic	2,507	369	54	2,930
Medical concerns	1,382	98	11	1,491
Family member diagnosed	739	91	9	839
Access to Benefits	268	19	2	289
Support research	316	20	2	338
Legal reasons	54	7	0	61
Screening purposes/multiple	280	170	51	501
Employer Requested Screening	111	1	2	114

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 table 15 with in-clinic and long distance identified 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 7/1/11-8/31/19	Yr. 1 total 9/1/19- 8/31/20	Yr. 2 Q. 1 9/1/20 - 11/3020	Cumulative totals
IC- # who answered	3,213	315	54	3,582
IC- traditional advertising (radio, TV, newspaper)	1,548	149	14	1,711
IC- website/social media	0	36	16	52
IC- Community networking (parades, local events)	1,329	123	24	1,476
LD- # who answered	600	97	23	720
LD- traditional advertising (radio, TV, newspaper)	244	27	2	273
LD- website/social media	44	29	4	77
LD- Community networking (events, word of mouth)	312	41	17	370

Screening Satisfaction:
To provide the best possible customer service, during this quarter, CARD implemented screening satisfaction surveys which were mailed out to all program participants and also made available

on our website. Twenty-two percent of the surveys sent were returned, and the vast majority provided very positive feedback. The surveys ask about program participants' experiences overall, and about their interactions with CARD's staff. Results can remain anonymous or respondents can choose to identify themselves. This quarter, one respondent complained of a long wait which was addressed with staff. Direct follow-up with the respondent was not possible because they returned the survey anonymously.

TABLE 16: SCREENING SATISFACTION SURVEY RESULTS

	Yr. 2 Q. 1 9/1/20 - 11/3020
# surveys sent	90
# surveys returned	20
overall: excellent	15
overall: good or very good	4
overall: fair or poor	1
staff: excellent	14
staff: good or very good	6
staff: fair or poor	0

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 17 details local outreach and education efforts which have been reduced significantly due to cancellations related to the pandemic. The four local events sponsored during quarter 1 included Our Kids Christmas toy giveaway, Kiwanis's Koats for Kids program, Libby Loggers booster club, and the Kootenai Harvest Festival. Community meetings attended included Rotary, Kiwanis, Lincoln County Health Alliance, Communities that Care, and a pilot program educational session at Cabinet Peaks Medical Center.

In addition, every other week a booth was setup at the local Farmer's Market until it ended for the season in mid-October. Each time, screening applications and outreach items were given away at the market and approximately 30-40 people visited the booth. All season entries for a drawing were accepted and the drawing was done live on Facebook after the market season ended to increase interest and attention to CARD's booth and important messages. The drawing winner received a pair of noise cancelling headphones.

Another local outreach and education effort not accounted for in the table is giving away masks and hand sanitizers with CARD's screening logo to local clubs, teams, businesses, motels and more. Included with all give away items was a pamphlet about CARD Screening.
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 17: TARGETED OUTREACH AND EDUCATION- LOCAL (Lincoln County)				
Method	**Before Current Grant 7/1/11-8/31/19**	**Yr. 1 total 9/1/19- 8/31/20**	**Yr. 2 Q. 1 9/1/20 - 11/3020**	**Cumulative totals**
Local newspaper ads	598	157	50	805
Education article in newspapers	47	12	3	62
Health Link and Health Resource Guide	10	2	0	12
Radio ads	9,500	4,661	262	
TV ads	8,236	422	0	8,658
Educational brochures given (screening, LCS, CARD)	443	298	146	887
Patient Education booklets	3,452	310	43	3,805
Parades	36	2	0	38
Community events sponsored	140	45	4	189
Commmunity meetings	218	77	22	317
Google AdWords Impressions	not collected	10,951	4,385	not collected
Google AdWords Clicks	not collected	771	588	not collected
Website visits	not collected	1,705	716	not collected
Website visits to patient education pages	not collected	624	142	not collected
community presentations/ events attended	76	17	7	100
website visits to provider education pages	not collected	207	87	not collected
newsletters sent locally	not collected	8,143	4,630	not collected

Table 18 details regional and national outreach and education efforts. YouTube channel numbers are a count of how many times our videos were viewed.

TABLE 18: TARGETED OUTREACH AND EDUCATION- REGIONAL & NATIONAL				
Method	Before Current Grant 7/1/11-8/31/19	Yr. 1 Total 9/1/19 - 8/31/20	Yr. 2 Q. 1 9/1/20 - 11/3020	Cumulative totals
Newspaper -outreach	76	68	22	166
Radio ads -outreach	10,242	755	0	10,997
TV ads -outreach	8,236	21,888	8,748	38,872
Website -outreach	not collected	17,299	5,533	not collected
Website -patient education	not collected	2,411	584	not collected
Website -provider education	not collected	744	243	not collected
Google AdWords Impressions-outreach	not collected	53,850	9,156	not collected
Google AdWords Clicks- outreach	not collected	3,165	1,662	not collected
Educational brochures given (screening, tobacco, LDS)	not collected	119	0	not collected
YouTube Channel	14,100	2,822	855	17,777
Patient Education booklets - education	3,298	277	47	3,622
Lung cancer screening brochures - education	180	64	32	276
Health promotion events sponsored -outreach	36	5	0	41
Newsletters sent	not collected	7,434	3,401	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 to healthcare professionals this quarter included letters sent to specific providers with shared patients regarding the patients' specific needs related to findings during their CARD appointments. Twelve new providers were added to CARD's mailing list this quarter, and in total, CARD newsletters were sent to 839 healthcare professionals. Tracy McNew presented virtually at American Public Health Association's annual conference, and also as a guest at University of Montana's Public Health Seminar Series in a session titled Libby, Montana: an environmental public health emergency. The session was held on Sept. 21 and approximate 35 people were in attendance via Zoom. CARD was also represented at the annual CHEST conference held virtually. Unfortunately, a presentation was planned for CHEST but it was not given due to the clinic's COVID closure and personal health issues. Montana Nonprofit Association's virtual conference, and the Quantitative Imaging Workshop XVII held virtually from October 28-30 hosted by the Prevent Cancer foundation were also attended by CARD representatives. Participating in these events allows for networking opportunities and discussions about the CARD Screening program as well as keeping staff members up to date. Healthcare professionals were also reached specifically by Dr. Black through patient referrals and through planning efforts for the upcoming Big Sky Pulmonary conference at which Dr. Lee will be presenting in the spring. Dr. Black was asked to write an Oxford Bibliography entry for vermiculite which was

submitted for peer review during this quarter. Once published, this will become an ongoing web-based reference available to healthcare professionals and others interested in learning more about the topic.

TABLE 19: TARGETED OUTREACH TO- HEALTHCARE PROFESSIONALS				
Method	**Before Current Grant**	**Yr. 1 Total 9/1/19 - 8/31/20**	**Yr. 2 Q. 1 9/1/20 - 11/3020**	**Cumulative totals**
Website -provider education	not collected	744	243	not collected
Mailings	not collected	121	20	not collected
CARD newsletter -education	27,948	1,056	839	29,843
provider education book mailed	1,351	271	30	1,652
Professional Conferences - education/outreach	45	3	4	52
Medical professionals -education	188	46	38	272
Press release pick ups	not collected	228	72	not collected
other targeted outreach efforts	not collected	301	1	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 1. 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 performing a monthly backup and plugin update site wide. Google AdWords is used to track website traffic.

TABLE 20: Website use				
Website Use	**Before Current Grant**	**Yr. 1 Total 9/1/19 - 8/31/20**	**Yr. 2 Q. 1 9/1/20 - 11/3020**	**Cumulative totals**
Screening applications submitted via website	202	105	20	327
Contact CARD emails via website	433	106	24	563
# of website sessions	103,871	9,441	3,564	116,876
# pages viewed	252,023	17,299	5,533	274,855
session length 30+ minutes	1,398	47	7	1,452
session length 10-30 minutes	13,642	363	58	14,063
session length 3-10 minutes	29,537	490	111	30,138
session length 1-3 minutes	21,664	567	168	22,399
session length 31-60 seconds	9,413	367	105	9,885
session length 11-30 seconds	12,448	370	137	12,955
session less than 10 seconds	bounce factor	7,237	2,978	10,215
Page depth: 1-9 Pages viewed in se	25,499	10,200	3,522	39,221
10-14 Pages viewed in session	1,709	348	29	2,086
15-19 Pages viewed in session	614	175	9	798
20+ Pages viewed in session	734	253	4	991
# of users	39,074	8,782	3,257	51,113
new users	not collected	not cumulative, reported as a percentage	99%	not cumulative, reported as a percentage
returning users	not collected		1%	
Male users	not collected		45%	
Female users	not collected		55%	
Age between 18-24	not collected		8%	
Age between 25-34	not collected		22%	
Age between 35-44	not collected		18%	
Age between 45-54	not collected		18%	
Age between 55-64	not collected		17%	
Age 65+	not collected		16%	

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 which reaches local, national, and international audiences has had 38 posts during this reporting period. These posts have reached 15,534 people. We have had 1,550 post engagements, and 558 reactions and comments. Our Facebook followers have increased by 76 people during this quarter and are now 2,696. Instagram followers have increased by 14 to 126 this quarter. Our Instagram page had a total of 15 posts during this reporting period. These posts reached 803 accounts, generating 69 likes.

Our goal is to promote more posts on our Instagram and we are currently doing some research on how to get more followers and work with hashtags to generate additional followers and get our messages out to a broader audience. Brand It also continues 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. In addition, CARD wrote outlines for short education and outreach videos that will be posted weekly on our YouTube channel in 2021.

Three new customized patient education handouts were implemented this quarter including a cost of smoking calculator, a what everyone should know about vaping and e-cigarettes pull tab tool, and a stop smoking kit.

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 transitioned 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.

CARD Annual Rally:

CARD's annual Rally was not held this fall as usual due to COVID precautions. The event is usually held in coordination with the public school, but schools have been taking significant precautions including the cancellation of all extra curricular activities, offering and sometimes mandating at-home learning, and when in person having smaller groups that stay together.
It is anticipated that the annual Rally event will be held in the spring when it is possible to do it outdoors. This year will be a Scooby Doo themed event, called Germ, Where are you? Attendees will learn how viruses and other harmful substances can be contained, and how to prevent them from harming us. Stations will include: 1. Identifying and avoiding vermiculite 2. Tobacco prevention 3. What are germs? 4. How germs spread 5. Hand washing 6. Safe food preparation
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 will be offered.

CHALLENGES:
REASON FOR DELAY AND ANTICIPATED CORRECTIVE ACTION OR DELETION

COVID-19 modifications:

During quarter 1, the screening programs continued to be 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 to patient cancellations due to concern over the virus. In addition, a surge of COVID-19 cases began in Lincoln County, MT in September and continues to date. This surge forced the closure of CARD's pulmonary function labs beginning on October 19 in order to protect our patients and staff. Our decision to close the labs was made based on the surge in local cases and taking into consideration recommendations of the American Thoracic Society and other leaders in the field of respiratory medicine. Spirometry in particular can be dangerous for spreading the virus because the maneuver requires patients to blow air out hard and fast, and this of course, cannot be done wearing a mask. The maneuver, by its nature, increases the likelihood of disease transmission and it takes 20 minutes or more for all of the potentially exhaled particles to settle so others in the area could be exposed afterwards. CARD has ordered equipment to convert our labs into negative pressure rooms which will much more

effectively prevent the spread of infectious contaminants such as COVID-19. These rooms, once completed will use lower air pressure to suck outside air in and trap potentially harmful particles in the room by preventing air from leaving the space. This protects people outside of the rooms from any potential exposure. Twelve air-flow changes per hour along with built in HEPA filtration and UV sanitization will protect our spirometry techs and respiratory therapists working in the labs. Airflow will be directly to the outdoors, and room pressure will be monitored by a system outside of the sealed doors. Although the equipment was ordered, we do not yet have a delivery or installation date.

Some facilities conducting spirometry for screening participants at a distance are requiring a COVID test prior to performing their breathing tests. Paying for the required COVID tests has been added to the grant's services with the approval of ATSDR this quarter, to ensure that patients do not have out of pocket expenses related to their grant-funded screenings.

Screening activities continue with encouragement to participate at a distance and with modifications for those seen at CARD 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 as usual we are continuing to encourage 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 are sent to a nurse to determine if they need to come in.

STATUS OF PROGRAM, SCREENING, INFRASTRUCTURE, AND STAFF

The grant's goals and objectives were implemented successfully even with COVID-19 restrictions during the first quarter of year 02, but unfortunately, they were done on a more limited basis as explained above. CARD's Business official also changed from Megan Beveridge who left CARD to Viktoriya Smith who took on our bookkeeper position. This request was submitted through Grant Solutions. Viktoriya brings experience with accounting through college courses as well as from previous businesses including her work with a local certified public accountant. David Miller also left CARD and his position as IT has been filled by Solomon Alcain Jr. who brings over 25 years of experience to the position. Two additional staff members, Tracy McNew and Serena Pape, received NIOSH certifications to perform spirometry at a training conducted onsite at CARD on September 24 and 25. This will allow for maximum use of equipment once negative pressure rooms are completed. One staff member, Mark Smith, a respiratory therapist was laid off because of the pulmonary lab closures. The duties of other staff members who were previously laid off due to the pandemic 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, Dr. Lee, and a physician assistant, who 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.

MEASURES OF EFFECTIVENESS

Measures of effectiveness were reported under each specific goal above. CARD added a new effective measure with patient satisfaction surveys this quarter as well. In addition to what was reported above, the following are some examples of specific feedback received from patients this quarter:

- "This appointment with Dr. Lee was great. She was very nice and seemed concerned with my health. I will come back now." 11/5/2020
- "Everyone was very helpful. I thank you all!" 11/5/2020
- "The scheduling was excellent. I had little to no wait time between appointments. The staff at all three spots were professional. I especially appreciated the time the staff and doctor spent explaining the process and results. An excellent experience." 9/29/2020
- "I was so impressed with the extensiveness of the screening and the explanations from the people." 10/4/2020

Left and middle photos: At the beginning of this quarter two of CARD's painted outreach rocks were found and returned to the clinic for prizes. These two local children received small gift baskets containing outreach items with CARD's screening logo and information when they

brought their painted CARD rocks back to the clinic. Our rock painting project was a successful outreach activity that was COVID friendly while still promoting CARD's screening program. Right photo: CARD's Case Manager, Stephanie, displays our new outreach and education items related to smoking and vaping prevention and cessation. These are used with patients in the clinic and they will be used at outreach events once they are happening again. She is also wearing one of CARD's masks that have been given away throughout the pandemic. Masks have also been a very successful outreach effort this quarter because of Montana's mandate to wear them in public. CARD's screening logo is displayed more prominently and frequently now than it ever has.

FINANCIAL RECAP OF GRANT EXPENDITURES

At the end of the first quarter of year 02, the grant was expended in the amount of $222,284.76 (9%) of the total grant award for year 02 which was $2,499,974.00. It is anticipated that more bills will come in expending additional funds from outside readers, but the amount spent will remain less than what was budgeted due to CARD's closure of pulmonary function labs and slowdown during the COVID-19 pandemic. With new pulmonary function lab equipment ordered and a vaccine that has already been approved, we anticipate improving numbers and increasing expenditures in the second half of this grant year.