

CFK TEAM COMPLETES FALL 2019 VISIT TO DPRK

A CFK team of 11 people, including members from Norway, Australia and the US visited DPRK from September 27 – October 16, 2019 to continue renovation work, hepatitis B and C diagnostics and treatment, delivery of 2,250 water filter buckets to TB and hepatitis care centers for further distribution to needy patients and their families, and confirming of multiple food and other shipments sent in 2019 to TB and hepatitis care centers.



CFK clinical staff & volunteers with North Korean colleagues.

Our mornings began before breakfast each day with study in the book of Hebrews – and our days in the DPRK were packed with activity from early morning until often late into the evenings. Our work this time included receiving and processing blood samples from 631 patients and seeing 533 patients in our treatment clinics in Pyongyang, Kaesong, Haeju, and Pyongsong; further renovation work on a hepatitis lab in South Hwanghae Province; opening cutting-edge molecular testing for hepatitis B in DPRK for the first time; opening dedicated diagnostics and a treatment program for sufferers of hepatitis C in DPRK; and visits to multiple TB and hepatitis care centers to deliver and train on the use of water filter buckets.

As noted in our prior newsletter, the unexpected disruptions to our planned fall travel schedule were very challenging to navigate, yet with helpful and sincere cooperation by local colleagues, we were able to make the most of our time in DPRK to make it a productive visit. We hope to return to a more normal travel schedule in 2020 so that our mutually-agreed programs can progress and planned work can be accomplished.

This work has, and continues to be a true journey of faith in the midst of great challenges and uncertainties. How fitting then that our morning time of devotion together was a study of the book of Hebrews – deepening our understanding of how worthy Jesus is of our faith, trust and worship. Hebrews 11 begins with the definition of faith:

"Now faith is confidence in what we hope for and assurance about what we do not see...without faith it is impossible to please God, because anyone who comes to him must believe that he exists and that he rewards those who earnestly seek him." (Hebrews 11: 1, 6, NIV) The 11th chapter is filled with examples of those throughout history who lived by faith – yet who did not receive what was promised, "since God had planned something better for us so that only together with us would they be made perfect." (Hebrews 11:40, NIV) What an amazing promise this is – faith enables us to see the current context, whatever our circumstances, as temporary – with assurance that God is actively working to redeem and transform it to completion in His time and way. This gives us patience to endure struggles, knowing that our God is faithfully working even within the most trying circumstances – for our good and His glory.

RENOVATIONS, TRAVEL AND DELIVERY OF WATER FILTER BUCKETS

While blood sample collection and processing was ongoing, other members of our team were working to install electrical conduit and wiring, solar panels, and doors at the South Hwanghae #2 Hepatitis Hospital. Local staff will continue working in our absence and assured us that the wall tile would be installed and the final floor poured prior to the end of October, and we hope to return in March to check on progress, do additional work, and prepare for finish work to be done on the lab in May. We hope that the South Hwanghae #2 Hepatitis Hospital lab can be equipped and operational by the end of next year.

We also traveled to 19 TB or hepatitis care centers to distribute 2,250 water filter buckets for further delivery to needy patients, to train on the use/care of the water filter buckets, and to talk with directors and check on shipments received since our last visit. As we met with patients and staff, we heard what a difference it makes in their lives to receive your gifts of love and support. We shared our donor list at



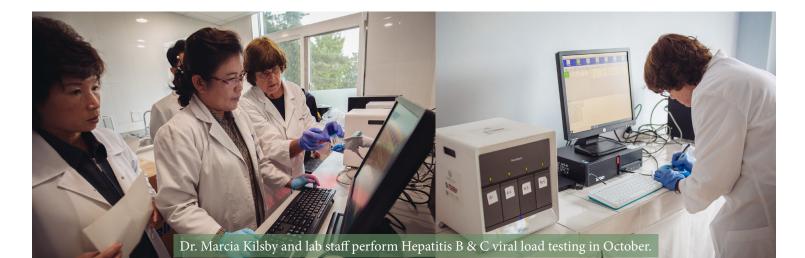
CFK volunteers continue renovation work on the South Hwanghae #2 Hepatitis Hospital Lab

each place and reminded the staff that so many people are praying for them, are grateful for their work on behalf of their people, and are reaching out with love and compassion to help as they can. We heard many sincere expressions of gratitude.



GROUNDBREAKING DIAGNOSTICS OPENED IN DPRK FOR HEPATITIS B & C AND NEW TREATMENT PROGRAM OPENED FOR HEPATITIS C

On the recent visit, we were able to open molecular viral load testing for hepatitis B and C patients with the delivery of a Cepheid GeneXpert instrument and test cartridges needed for B and C testing. These tests, while expensive, provide us with viral quantification to help determine who needs treatment. Our donor partner had provided 50 patients worth of hepatitis C medicine, and we were able to start 37 patients on treatment after doing the necessary diagnostic tests, bringing hope to many patients who otherwise had no means for treatment. The beauty of hepatitis C treatment is that in most cases it provides a full cure for the disease after just three months of treatment. We expect that as word gets out that treatment is available, many more patients will seek treatment.



TAKING CLINICAL DIAGNOSTICS TO THE NEXT LEVEL IN DPRK BY MARCIA A. KILSBY, PHD, MLS(ASCP)^{CM}SBB, CLS(NCA)

October 2019 marked an important milestone for the HOPE program's clinical diagnostics. For the first time our CFK team was able to provide molecular testing to assess patients' hepatitis B (HBV) or hepatitis C (HCV) viral loads (precise quantification of the number of virus in serum or plasma). Since the beginning of CFK's work treating hepatitis patients, we have dreamed and worked to include this type of cutting-edge diagnostics testing as part of our patient clinical assessment.

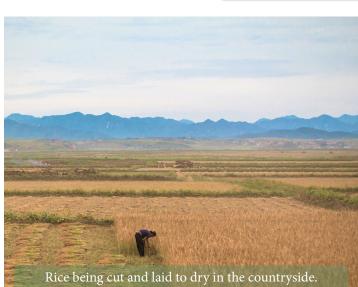
How excited my DPRK colleagues and I were as we eagerly received all of the shipping boxes containing the Cepheid GeneXpert System recently air freighted to the National Hepatitis Reference Laboratory in Pyongyang (a facility previously built by CFK volunteers). We soon discovered that customs officials had rigorously opened every instrument box, parts bag and reagent cartridge box. They had also removed and unrolled all of the connecting cables and power cords from their bags and boxes and all the instrument setup CDs. As we sorted out the jumbled parts and cables, we were relieved to find no loss or damage to the shipment and soon we had everything connected and were ready to start patient testing. With the instrument's four separate modules, four different patient samples can be tested simultaneously. In only 60 minutes HBV results would be ready, and in 105 minutes HCV results would come in.

Why is hepatitis viral load testing so important? The results provide physicians with critical information to make the best treatment decision when other diagnostic testing does not point to a clear cut clinical decision. In the case of HCV, the rapid test kits available for patient screening only detect the presence of HCV antibodies which only indicates that the person has been exposed at some point to the virus. The test cannot determine whether the person currently has active HCV infection. To establish actual presence of the virus requires HCV viral load testing. If the test result comes back as "HCV present," the patient has HCV and can be considered as a candidate for drug treatment. If no virus is present, happily the patient does not need treatment for HCV. Over the last couple of years, we have been identifying a number of patients who tested positive for HCV antibodies but we could not test them further to determine their current HCV infection status. Now we can.

We learned that the HBV tests were the first to ever be run in the Democratic People's Republic of Korea (DPRK) and also some of the very first to be done globally. Cepheid, Inc., the company that developed and produces the GeneXpert System, has only recently released their HBV cartridges for clinical use. Although we planned to do all of the viral load testing at the National Hepatitis Reference Laboratory (NHRL) in Pyongyang, we decided the ability to test while patients were still present at clinic was most important. Hence, my colleague, Dr. Kim, and I became very efficient at packing, unpacking, and setting up the instrument in various provincial cities. In addition to providing on-site testing, local DPRK lab doctors at Pyongsong, Haeju, and Kaesong were taught how to collect and prepare the samples for testing, learned about the science of viral load testing, and were instructed in how to interpret the test results.

When a patient arrived for clinic whose lab results indicated a need for viral load testing, a fresh blood sample was drawn. As the patient waited to see the clinic physicians, the requisite test was being performed. By the conclusion of the October visit, 67 HBV and 77 HCV viral load tests had been performed. Only four years ago, there was no modern laboratory in any hepatitis hospital in the country and now we are performing state-of-the-art molecular testing as needed, even in more rural areas! That we have come so far in such a short time in our efforts to provide the best care possible for suffering patients is truly a blessing from the Lord.

HARVEST WELL UNDERWAY



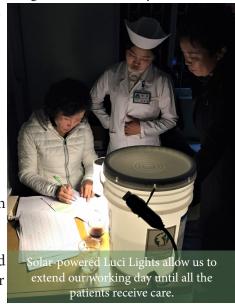
n our travels throughout the country the harvest was well underway – with the corn already gathered, and being shelled and dried in the sun, and the rice being cut, laid out to dry, bundled, stacked in the fields, and threshed into bags piled high onto trucks presumably headed to population centers. The roofs of many houses were covered with soybeans, red peppers, corn and other crops drying in the sun. Persimmons, sweet potatoes, and chestnuts were being harvested, and delicious apples and pears were served in several places. It is a time of relative abundance - soon the cabbage will be gathered and kimchee making will begin to put up vitamin-rich greens for winter. Yet, with the UN reporting that 43 percent of DPRK's population is undernourished, there is no doubt that the food needs remain significant for many, and that our support is lifegiving.

SUFFERING AND HOPE

Our clinic days are a combination of intense administrative work, set up of equipment, processing of patients through reception, diagnostics, physician consultation, and medicine dispensing. There is a steady hum and

stream of activity all day as patients receive care. As the daylight wanes, we pull out solar lanterns to light our work so we can wrap up care for the remaining patients. In the midst of the bustle there are moments that bring pause, like a grandmother who couldn't stop thanking us for caring for her, or the patient who asked with hope in his voice to a local staff member after receiving the results of his hepatitis C viral load test, "Is it good news?"... meaning – do I have hepatitis C (so I can receive medicine and be cured)? Many patients have felt very sick for a long time, and to have a clear diagnosis and medicine available that can cure them is indeed good news.

Another patient, a woman in her late 30's, was helped to the reception desk from her hospital bed by several staff and family members. Her belly was greatly swollen from ascites – one of the effects of advanced liver disease. She had waited weeks for our team to come, hoping for treatment, and her condition had worsened during our unexpected delay. Her elderly mother was there caring for her in the hospital, and she has two children still at home. Our doctors visited



her in the room she shared with other patients, and started her on treatment. Our hearts ache for her, and others like her, and we pray for a true miracle - that treatment will not be too late for her.

As our doctors met with patients, side by side with local doctors, they discussed each patient, and decided together on the best course of treatment based on WHO treatment guidelines and modern diagnostics. It is an opportunity for both sides to learn from each other, and to bring hope and healing into the lives of many people. We are now at the end of our fourth year of what was initiated as a 10-year pilot program. We have come a long way, having screened 3,262 patients in five clinical locations and having started 2,128 hepatitis B patients on treatment.



As of October 2019, we have expanded the HOPE program to include hepatitis C diagnostics and treatment, providing a true cure for hepatitis C. We have built a database from the ground up that tracks critical patient data and allows us to maintain extremely high standards of accountability and transparency. Two solarpowered labs have been completed and equipped, staff trained and a third lab is now being constructed. With the initiation of viral load testing, the level of care offered through our HOPE program rivals care offered nearly anywhere else in the world.

We marvel at how far the program has come in such a short time, yet are impatient for the huge amount of work that remains – the patients not yet reached, geographical areas not yet covered, training and prevention efforts that must be strengthened. The suffering is so great... and there is so much that needs to be done both for prevention and treatment.

This time we did many follow up visits (required by the program) to check on the ongoing health status of those already on treatment. In many cases, patients' diagnostic numbers have improved, and they are feeling and looking so much better. Others are just maintaining, and a few more have died. Hepatitis has taken so much from so many of these patients – their loved ones, their health, their future – what a privilege it is to bring hope and healing back into this otherwise devastating context.

We continue to hear just how important it is for patients to receive good nutrition as part of their healing process. One of



new diagnostics and medicine.

our in-kind donors has provided a protein powder called "Thrive Nourish" that continues to make a real difference especially in the lives of those who have liver cirrhosis. These patients especially need additional protein in a form that they can easily digest, and this product continues to be a true lifeline to many people. We are grateful for our partnership with Rise Against Hunger that continues to impact the welfare of very sick patients so significantly. The care centers we visited this time were very grateful to have a generous supply of water filter buckets to dispense to patients with persistent GI issues at home. We hope to send thousands more water filter buckets in the coming year for distribution to TB or hepatitis patients for home use.

A REFLECTION BY DR. DAVID HILMERS, MD, EE, MPH, MSEE, MEDICAL DIRECTOR, HEPATITIS B FREE

The young mother was clearly anxious when she entered through the curtain behind which I was testing patients with an instrument to help our team assess the stiffness of a patient's liver. It can noninvasively determine whether a patient has cirrhosis, and the results of this test are a major factor in our decision to start patients on medication. I greeted her in my very limited Korean and asked her to lie down on the examining table. I tried to reassure her with a big smile and a nod that this would be a quick and painless procedure. She demurely exposed her lower abdomen, and I would have been surprised at how thin she was if it were not that I had seen so many other patients that day who were similarly undernourished. I could not help but notice the numerous scars on her belly as I was placing the probe between her ribs. The disfigurations are the result of traditional medicine procedures that patients seek to treat abdominal pain, indigestion, and hepatitis. As the measurements were displayed on the screen, I was deeply saddened. They indicated advanced cirrhosis that had developed despite her young age. I knew that she would be started on medication that

day, but although treatment will certainly prove beneficial, eventually she will suffer the consequences of a severely damaged liver.

I mourn for patients like this young woman. If we could have intervened earlier before the hepatitis virus had so profoundly injured her liver, she might have lived a nearly normal life. If she

had been born a few years later when the hepatitis B vaccine became available in DPRK, she might have received the immunization that could have protected her from contracting hepatitis from her mother. If only, I thought... if only...

Dr. David Hilmers assesses the

stiffness of a patient's liver.

know that He called us to make the long journey to the DPRK to minister to these patients who need our help so desperately. It is certain that our efforts can only succeed if we make this work His and not ours.

> I am reminded of the words of Proverbs 19:21:"*Many are the plans in the mind of a man, but it is the purpose of the Lord that will stand*."

My heart is full of sorrow for this young woman and wonder what the future holds for her and her family. Yet, we give praise to our Father who brought her to our clinic and who allowed us to be the imperfect vessels through whom He carries out His perfect will.

However, we know that God is sovereign and that

He has a perfect plan for this young woman and for

everyone else who came to the clinic on this day. We

OUTLOOK FOR 2020

A swe look ahead to the new year, we hope to return to our normal schedule of visits, beginning in early March. In addition to our usual shipments of food, medicine, hygiene kits and blankets, we hope to send other goods like patient mats, many more water filter buckets, and also greenhouses again. Thanks to a new donation, we are preparing to send a container of first line TB drugs (14,000 patients) to help prevent a drug stockout while negotiations between Global Fund and the DPRK government proceed, and with your help, we hope to send a water filter bucket and anti-parasite medicine to go home with each patient receiving the TB medicine. We expanded our support to several new facilities this year, and were asked in October to take on another place, and each of these places needs a tractor, greenhouses, usually a newly drilled well, and baseline support of food, blankets and medicine in order to better care for their patients. In October, we delivered a drill bit and well casing now allowed under our licensing and new UN sanctions exemption and hope to restart well drilling activities very soon, including new solar/water installations in 2020. So there is much to be done in the coming year. What a privilege it is to be able to come alongside these grassroots facilities to help them care for patients in the name and love of Jesus.

Of course, the current regulatory context remains very challenging with a significantly increased workload, but we are learning how to navigate these challenges and trust that it will remain possible for our life-saving humanitarian work to continue. We greatly appreciate your continued prayers and support of this work and have faith that God will indeed produce good fruit in His time and way. We pray that He will give us strength to endure, and to follow His lead. Thank you for faithfully walking with us, step by step, in faith.



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