

FOLLOWING THE SUN

A TRANSFORMATION IN MIZORAM'S PUBLIC HEALTHCARE,
UPHOLDING SOCIAL EQUITY AND CLIMATE JUSTICE



स्वास्थ्य एवं
परिवार कल्याण मंत्रालय
MINISTRY OF
HEALTH AND
FAMILY WELFARE



Directorate of Health Services (DHS)
and
National Health Mission (NHM)
GOVERNMENT OF MIZORAM



SELCO Foundation



Following the Sun has been co-produced by
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From the Chief Minister's Desk



The Honourable Mr. Lalduhoma
Chief Minister of Mizoram

I am pleased to extend my heartfelt congratulations to SELCO Foundation on the launch of their coffee table book, **Following the Sun**. This remarkable publication beautifully captures the journey of harnessing solar energy to transform healthcare systems across Mizoram, ensuring reliable and climate-smart solutions for communities in need.

Following the Sun is more than just a collection of stories; it is a testament to resilience, innovation, and hope. By illuminating healthcare facilities with renewable energy, SELCO Foundation has empowered frontline health workers and enhanced patient care, paving the way for a more energy-secure and climate-resilient future.

I commend SELCO Foundation for its vision and dedication to sustainable development. May this book inspire many to follow the light of innovation and work together towards a healthier, more sustainable world.


(LALDUHOMA)



From the Health Minister's Desk



Honourable Shrimati Pi Lalrinpui
Minister of Health & Family Welfare, Tourism,
and Social Welfare Department

The Energy for Health (E4H) initiative, launched in partnership between the Government of Mizoram and the SELCO Foundation, is a landmark step in our mission to create effective and optimised healthcare delivery systems. E4H addresses various challenges, particularly by ensuring reliable and uninterrupted energy supply to healthcare facilities across Mizoram.

E4H is a bold and transformative initiative that envisions the solarisation of all healthcare facilities and bolsters infrastructure where it is most needed. Reliable energy access remains a persistent challenge for many sub-centres and primary health centres, especially in remote and underserved regions. By integrating sustainable energy solutions, we not only ensure continuous healthcare services but also enhance the quality of care available to our people. To date, all 443 primary health facilities have been solar-powered.

Through this initiative, we empower health facilities to deliver critical services more effectively, ensuring that even the most isolated villages receive timely medical attention. This is a crucial step in bridging the healthcare gap and fostering an inclusive health system that leaves no one behind.

As we build on the momentum, I envision that Mizoram will emerge as a model for other states in integrating renewable energy, not only in public health initiatives but also in education, livelihoods, and existing and emerging housing infrastructure. Our commitment to sustainability and healthcare excellence will serve as an inspiration for regions across the country striving to enhance their health infrastructure through clean energy solutions.

(LALRINPUI)



Directorate of Health Services (DHS)
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E4H would not be possible without the support of



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Preface

Sustainable energy practitioners have long established that lack of access to energy affects rural and urban populations' productivity and well-being, impacting their livelihood-generation capacity, education outcomes, health outcomes, and quality of life.

The Government of India, under its Community Development Programme, 1952, set up Primary Health Centres (PHC) and Sub-Centres (SC) at the village level. PHCs are the cornerstone of the last-mile healthcare delivery system. Their objective is to provide preventive, curative, promotional healthcare and family welfare services to the people. According to Indian Primary Health Standards, there shall be one PHC to serve a population of 20,000–30,000 (depending upon whether the terrain is hilly or plain). Staff at each PHC must include a medical officer, staff nurse, laboratory technician, pharmacist, male and female health workers, Accredited Social Health Activists (ASHA), and administrative staff.

Each PHC is further supported by a network of five to six SCs, which are the most peripheral healthcare units at the village level. SCs provide healthcare to a population of 3,000 in hilly / tribal areas and 5,000 in the plains. The services are related to maternal and child health, family welfare, nutrition, immunisation, diarrhoea control, and communicable diseases. Each SC is run by an Auxiliary Nurse Midwife (ANM) and a Male Health Worker (MHW).

While the efforts of the health sector have focussed on the need for expanded access to skilled care, essential medicines, and medical technologies for priority diseases and health conditions, comparatively less attention has been assigned to the value modern, affordable, and sustainable energy access can bring to the delivery of quality healthcare. Unreliable and unaffordable energy and the lack of energy-efficient appliances reduce the efficacy and impact of services.

In 2023, in a significant step towards transforming the public health infrastructure, SELCO Foundation and IKEA Foundation, in partnership with India's Ministry of Health and Family Welfare (MoHFW) and various state Health Missions, launched a groundbreaking programme — Energy for Health (E4H). By 2026, 100MW of solar energy systems will be installed, along with energy-efficient medical and electrical equipment, in 25,000 healthcare facilities across 12 states. A first-of-a-kind programme, the massive outreach of E4H is expected to touch 170,000,000 lives and improve the working conditions of over 160,000 frontline health workers.

E4H brings with it positive impact across the spectrum of stakeholders — for last-mile communities in their access to timely healthcare; for health staff in ensuring a conducive work environment; and for the health sector in reducing energy consumption, equipment-related costs, wastage of vaccines and critical resources. Overall, it reinforces climate resilience and positive health outcomes for all.

The 12 states under the programme throw up a rich diversity in terms of topography, socio-economic vulnerabilities, disease burden, and climate. As we innovate on approaches, models, and processes for this melange, they will emerge a global showcase and knowledge bank for similar contexts in any country.

In this report, **Following the Sun**, hear from the people who are creating the solutions as well as those who are accessing and using them. They are not networks enabled by solar panels and wires; they are a silent, ever evolving grid of hearts, stories, communities, and life itself in all its setbacks, complexities, and glories.



Energy for Health

Government of Mizoram and SELCO Foundation



Energy for Health (E4H) in Mizoram is a joint initiative by the Government of Mizoram and SELCO Foundation. As the state government focusses on decentralising healthcare services as a strategy to enhance healthcare access for the people who have to negotiate Mizoram’s gruelling terrains and weather conditions, E4H has ensured reliable energy for sub-centres, thereby enhancing maternal and child health and family welfare services and immunisation points. In fact, at the time of going to press, E4H had reinforced service delivery across all health facilities in the state, which includes primary health centres and community health centres.

Mizoram’s decision to achieve energy independence via E4H has not only benefitted the millions of people who rely on public healthcare but also improved the viability of the modernisation effort and generated savings for the health department. Additionally, the programme has provided engagements to solar energy service providers, which indirectly contributes to local economies and boosts adoption of solar energy across sectors.

E4H creates systems and processes that demonstrate ownership, management, and maintenance of the systems and appliances locally. It builds technical knowledge and capacity, as well as informs guidelines and policies that will enable health departments across the country, and beyond, to plan for sustainable public health infrastructure.

The programme is supported by the IKEA Foundation, the Waverly Street Foundation, the Ashraya Hastha Trust, and LIC Housing Finance. SELCO Foundation would specifically like to thank the innovative spirit and years of commitment contributed by the health practitioners of Mizoram.

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The Health Democracy

DR. HARISH HANDE

CEO, SELCO Foundation

2011 Ramon Magsaysay Awardee

SELCO Foundation must serve only as a catalyst for transformation, not as the focal point. We must move beyond seeing any one institution as the sole creator of solutions; rather, view the process of bringing about impactful, sustained change as an innovation — one that can be built upon and made open-source. Our goal is not for people to think about how outstanding our work is. Instead, we want them to look at the problem we are solving and think, ‘I can do better than that!’



The mission of SELCO Foundation is to use sustainable energy as a catalyst to democratise healthcare and livelihoods. When we speak about renewable energy, we often focus our conversations on the Decentralised Renewable Energy (DRE) technology and the equipment: solar panels, batteries, earthing cables, and charge controllers. However, the discourse must be about the delivery of health and livelihoods — it must become about the communities who use the solutions we build.

Health is a fundamental right. Without addressing the health crisis, we cannot solve poverty. From the micro point of view, it leads to better education for children, better livelihoods, and a better family life. On a macro level, healthy citizens contribute to the progress of the community, the region, and humanity as a whole.

For the poor, the transaction costs of receiving healthcare are enormous. Accessibility and affordability come in the way of their wellbeing. Medical expenses for a child, mother, or father often consume savings; many families remain trapped in poverty for generations.

SELCO Foundation uses decentralised energy solutions to alleviate this crisis; it enables healthcare to be accessible to the poor, near their homes, in the most affordable manner from their perspective. For the end-user, the focus is on accessibility and affordability. For the government, it is about building systems that are reliable and cost-effective. We deliver services that should reduce the burden on the state while boosting the number and quality of services available to the end-users over time.



Currently, healthcare services are pushed upwards to the overburdened district and city hospitals. We bring in innovations in technology and energy delivery systems to push affordable and efficient services back down to the last mile. Hence, our Energy for Health (E4H) programme is not just about solar powering health centres; It's about rethinking healthcare delivery itself.

Technology and DRE allows us to accept that not all services require a brick-and-mortar space. With advancements in healthcare teleservices and the growing sophistication of communication technologies, the only few physical needs are a space for the delivery of a child, for instance. Let us imagine a scenario in 2035. What if a high-quality pop-up tent, powered by solar energy, is set up in front of a house a few days before a delivery?

The tent includes everything from an incubator to a high-quality television, manned by a midwife. The television is connected to any specialist doctor in the world. Once the delivery is complete, the tent is dismantled and moved to the next location. Why should a woman have to walk even a kilometre to give birth?

SELCO Foundation takes the initial risk of piloting new models on the ground and showcasing their efficacy. This allows the governments to observe the interventions over a period of time and scale once they see impact. For instance, in Meghalaya, we redesigned maternal labour rooms, complete with energy efficient medical equipment and solar energy. Once we demonstrated its success, the state government embraced the idea for statewide adaptation.



Delivery of health services cannot take place in isolation. A high-quality baby warmer in a rural health centre is ineffective without trained personnel to operate it. Similarly, a trained healthcare worker cannot offer services if she/he/they does not have the necessary technology or infrastructure. Our role is that of an ecosystem builder that brings together all the stakeholders — the governments, the policymakers, the implementers, the technology providers, and the systems.

One of the barriers is the time it takes to understand the social nuances in any geography. For example, trust plays a significant role in rural healthcare. If someone has had a negative experience with the healthcare system, she/he/they may not return to it. Certain beliefs or customs may conflict with modern healthcare practices. Some communities may be reluctant to allow a male doctor to attend to childbirth. Designing an effective, culturally sensitive healthcare delivery system is complex.

Another deterrent is the perception that solar energy technology is complicated and difficult to maintain. In reality, it is far simpler than a mobile phone. Anyone interested in the technology in a village can easily repair it, just as many young people repair mobile phones. So, we bring the right local ownership into play. When we install a solar energy infrastructure, we involve different community members — from, say, community health workers to the school principals to the village committee members to the community leaders. Once they understand why the infrastructure is being installed and how it works, they develop a sense of responsibility, and the energy system becomes part of the fabric of the community. When we began our work in the Northeast, we encountered several complaints from the staff at the health centres who live on the premises and are in charge of the maintenance of the solar energy infrastructure. They said that the systems did not function as expected, and they didn't have the time to resolve the issues. It became clear to us that the systems were failing not because of faulty technology but because the people responsible for them were not adequately supported or incentivised.

We found that the staff quarters were poorly equipped, and the living conditions for the health workers were sub par. We solar powered the quarters. Once the staff had a reliable supply of electricity, their lives became a little less stressful; as a result both the quality of healthcare and maintenance of systems improved, and the entire ecosystem improved with it.

However, the biggest challenge we face today is not posed either by the end users or the government. It lies in the gaps within the systems we have inherited. Current models are designed with an assumption of abundant resources, which is simply not true of rural areas. In urban areas, innovative dental chairs have made it possible to provide dental care for free. The rural communities cannot access that technology because villagers have to travel for hours, sometimes days, to receive healthcare. Major global manufacturers have never considered adapting their products to resource-poor regions. Why can't we develop a foldable, solar-powered dental chair for difficult-to-reach areas like the forest hamlets in the Majuli islands in Assam? Its varied geography, rich cultural diversity, and complex challenges offer a perfect microcosm to test models for climate resilience.

Our journey thus far has been made possible through collaborations with health practitioners, philanthropies supporting equity and sustainability, enterprises working in far-flung geographies who install and maintain solar energy infrastructure at health facilities, and state governments without whose support no public health intervention can sustain and scale. The journey has also been inspired by the people we meet on the ground, like the Accredited Social Health Activists (ASHA). Many of them have been working for 20 to 25 years despite the challenges and frustrations that come with the job. Their work hours are long and unstructured. They almost never get vacations. They are from the communities they work for, so they have to be available for any and every health crisis and emergency. I have asked many ASHAs why they continue to do what they do. Most of them say, 'It's a calling.' Come floods or cyclones, they stay committed



because they believe in their work.

If we look at the history of technology, it is clear that tools and systems develop through iterations, with different players contributing their part. SELCO Foundation must serve only as a catalyst for transformation, not as the focal point. We must move beyond seeing any one institution as the sole creator of solutions; rather, view the process of bringing about impactful, sustained change as an innovation — one that can be built upon and made

open-source. Our goal is not for people to think about how outstanding our work is. Instead, we want them to look at the problem we are solving and think, 'I can do better than that!' The aim is to make India a model for the two billion people in the Global South who don't have access to affordable healthcare. The goal is to show the world that it is possible to democratise health — that it is not just a privilege for the wealthy, but a right for all.



The Future is Lit

HUDA JAFFER

Director, SELCO Foundation

“A compelling picture emerges in Mizoram, where the Planning Department put its faith in E4H. Mizoram was very clear about what it takes for the government and local health structures to own DRE systems; the rollout involved a lot of co-planning. We have already powered 100% health centres in the state. Despite the remoteness and the difficulties of the terrain, akin to Meghalaya, here too the maintenance of the DRE systems have become a part of the existing health support structure, like the cold chain servicing network.”



SELCO Foundation's Energy for Health (E4H) programme addresses the energy needs of India's last-mile health centres — Primary Health Centres (PHC), Sub-Centres (SC), and Health and Wellness Centres (HWC) — with a special emphasis on the remote and difficult-to-access regions. Deep-diving into the energy and systemic gaps, we provide health centres with Decentralised Renewable Energy (DRE) systems or distributed solar energy infrastructure that not only enables them to become energy-sufficient, but also energy-efficient, more productive in the human aspect of healthcare delivery, and climate-resilient. We believe, designing DRE into the healthcare delivery system has become a no-brainer from the climate disaster perspective. We cannot have a health centre failing any time a calamity hits; in fact that is exactly the time when we cannot have it fail.

To roll out E4H, we chose certain regions very deliberately — the South, the East and the Northeast. While we play the role of technical knowledge partners in the rest of the country, we chose the E4H states based on three criteria:

- The difficulty of terrain and remoteness;
- proneness to disasters such as floods and cyclones, droughts and earthquakes;
- and extremely rich cultural, linguistic, social, and ethnic diversity.

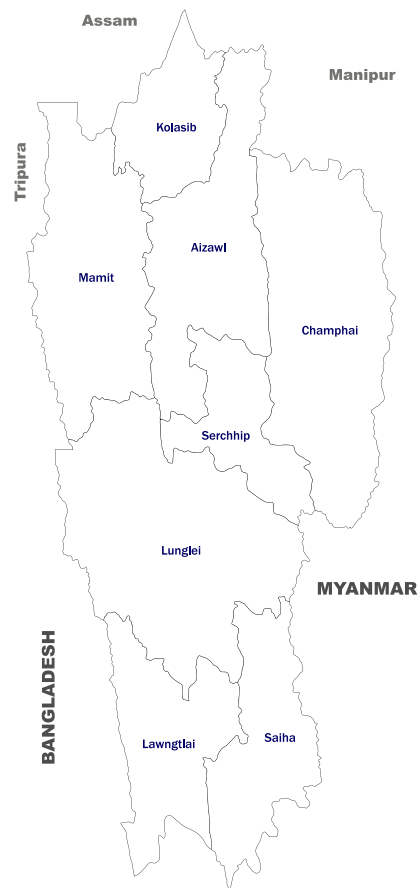
These regions perform poorly on the human development indices. The infant mortality rate and the maternal mortality rate is high and so is the disease load. They are developmentally backward areas. We felt we would really be able to develop processes and methodologies that can be a learning for people from anywhere in the world. It is in these areas that they can truly understand what it takes to successfully deploy a DRE system, to own it, and to run it under the most challenging conditions.

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100% health centres in the state. Despite the remoteness and the difficulties of the terrain, akin to Meghalaya, here too the maintenance of the DRE systems have become a part of the existing health support structure, like the cold chain servicing network.

The priority of E4H is not to power every single facility and every last health centre as quickly as possible. The priority is to build DRE into the existing healthcare delivery and maintenance systems so that governments are able to own the programme and expand the systems on a need basis. Before installing the systems, we ensure that the health centre staff members not only understands the entire concept and what it can do for them, they also run and maintain the systems and feel a sense of ownership. So, say, if a panel breaks or a charge controller stops working, decision makers and officials in the internal and local systems can decide how to fix it and how quickly. Only this kind of deeper engagement can ensure the sustenance of programmes such as E4H. However, we cannot depend on processes and systems alone. The investment in the local champions is critical. When a doctor, a teacher, a village elder, a farmer, a night nurse, a district health officer, or a health secretary, see the true merit of E4H, they become interested and invested in the programme, and turn into its natural influencers and guardian angels.

Our DRE system batteries come with a warranty of five years as mandated by the Ministry of New and Renewable Energy (MNRE); if maintained very well, they run for about eight to ten years. Panels also come with a similar warranty, but they typically last about 20–25 years. Hence, capacity building for maintenance is a core focus area. It includes pre-installation, installation, and post-installation training for local enterprises and technicians. We cannot expect anyone to provide this service for free. So, we prioritise local enterprises with a good service network to install the systems, and the payment comes, and this is a systemic innovation, from untied funds with local Rogi Kalyan Samitis. These are patient welfare committees enabled by the NHM that act



Mizoram

The Energy for Health (E4H) Journey

MARCH 2023

Initiation of partnership with the National Health Mission (NHM) to launch E4H statewide.

JUNE 2024

335 centres are covered in phase 1; assets are handed over to the government.

DEC 2024

100% of public health facilities, 443 in all, are solar powered.



as trustees for hospitals and health centres. They are free to prescribe, generate, and use their funds as per their judgment for the smooth functioning and maintenance of the services.

E4H DRE systems have a standard built-in autonomy of two to three days, but if we implement them in an area with very heavy rainfall or high cloud cover, we extend it to five to six days. If our systems can function well in Meghalaya's Cherrapunji (Sohra), one of the world's wettest places, then they can work anywhere. We have collaborated with the state governments to ensure that when they procure new equipment, like baby warmers, oxygen concentrators, and freezers, they acquire the most energy-efficient appliances available. This could potentially result in reduction in energy requirement by 60% to 80%. For newer health centres, we have been pushing for green building designs. When combined, these elements provide an energy-optimised, futuristic pathway for public health.

E4H will power 25,000 health centres in 12 states by 2026. To ensure that the best possible DRE systems and synergies emerge, we will work with public and private partners, while we play the role of a strong technical and knowledge advisory. The goal is to ensure that the learnings from this programme enrich and augment other programmes in India and also Africa because it has similar terrains and challenges. India has taken the global leadership in the 'energy for health' sector both in terms of depth and scale. In the long run, we will similarly strengthen 100,000 health centres, and many more across the African subcontinent and the world, which the first 25,000 can influence and inspire.





The Cause We Serve

REBECCA H. LALDUHAWMI

Health and Wellness Officer
Zokhawthar Sub-Centre
Champhai District,
Mizoram

“Working in a border area, where conflict is raging on the other side, and you are witness to its victims on a daily basis, you become tough and practical. You gain perspective. And seeing the hardships of the people, your capacity for empathy increases. You want to serve one and all, no matter what their identity is. This is also the government’s mandate for last-mile healthcare services: leave no one behind.”

HUMAN BHARAT
D WELLNESS CENTRE

HEALTH AND WELLNESS CENTRE



ZOKHAWTHAR
HEALTH & F.W DEPARTMENT
GOVERNMENT OF MIZORAM

HEALTH SUB-CENTRE AH HENG YE HI A THLAWN IN KAN IT THELE:-

1. Naupai Enkaw (ANC)
2. Hrel venna (Immunization) - Nu leh Naute
3. Chhoughhathuo (Family Planning)
4. Nan peih lawmman (JSS & NMBS)
5. First Aid
6. Naina tenau enkaw (Minor Ailments)

(TCP)

W & R/W "E" 1, IV-Grade 1

on out / Mipe 1566

Hmuckhlo 2546

Total 4112



In 2022, when I began to practice at this border posting, the sub-centre building, which was old, would get extremely congested with patients. The sub-centre is responsible for a population of 4,500 locals and villagers. However, we also serve a significant population of Chin refugees, who have fled to India due to their violent and relentless religious persecution in Myanmar. There is yet another population — the outsiders — who live here sporadically to be part of the border trade. The combined numbers translate to a high incidence of pregnancies. We add an average of 38 to 42 antenatal cases to our files every month. The density of communicable and non-communicable cases is high, and so are the cases of road accidents. Naturally, there were days we could barely function. Seeing our plight, the town council agreed to grant us rent-free use of their community hall. We set up a makeshift sub-centre.

Responding to the crisis, the government commissioned a green building to replace the old. In 2024, we moved into the new, airy sub-centre, full of sunlight. We were given solar power and green-energy-friendly equipment. I was allotted a staff quarter; my husband and son could finally join me. This year I gave birth to my second child here, a daughter. This was supposed to be a 24/7 sub-centre; forced to work around constant power cuts, we were anything but. The arrival of solar energy made us 24/7 in earnest.

Without solar power, there is no way we can cope with multiple deliveries or emergency cases that may arrive around the same time. Not to mention infant radiant warmers, suction pumps, and oxygen concentrators, at the very least we need autoclave sterilisation to clean the equipment quickly and thoroughly. We need a reliable internet connection to upload case reports. Our phones must remain charged for calls from the community, and our rooms should have working lights and fans for patients who come walking for miles.

An auxiliary nurse midwife by training, I run this sub-centre with a health worker, a chowkidar, and ten

Accredited Social Health Activists (ASHA). Working in a border area, where conflict is raging on the other side, and you are witness to its victims on a daily basis, you become tough and practical. You gain perspective. And seeing the hardships of the people, your capacity for empathy increases. You want to serve one and all, no matter what their identity is. This is also the government's mandate for last-mile healthcare services: leave no one behind.

To this effect, we collaborate with various NGOs, in particular Doctors Without Borders India (DWBI), to track down mothers and children in all locations for checkups, vaccinations, antenatal care, delivery requirements, and newborn care. DWBI not only helps us with manpower on such endeavours, it also actively refers cases to the centre. In the monthly vaccination schedule, we allocate a separate day for non-locals. The turnouts of mothers and babies are significantly higher on those days because a lot of people from either side of the border region and its remote corners turn up. We attend to each and every one in the queues. For us, they are all patients, and we have a call of duty.







Hope Against Hope

LALPEKMAUI

ASHA (Accredited Social Health Activist)

Zokhawthar Sub-Centre
Champhai District,
Mizoram

“Power cuts would put us at a disadvantage. Without internet connectivity, we could not upload case reports on time. We could not charge our phones for days, which meant none of our cases could contact us, even in emergencies. Vaccines would spoil as the ice melted in refrigerators. Most critically, we would have to manage a significant portion of the deliveries, manually. Given that we receive about 40 delivery cases every month, you can picture the relief solar energy has brought to us.”



I live in a poor border town, where people have a difficult life. The terrain is tough, too. A bit of a walk away is the bridge over the Tiau River that connects Zokhawthar in India to Khawmawi in Myanmar. People from both countries use it for business and travel. One might think that being a trade hub would make us a thriving town, but caught in uncertainty and conflict, most of us have remained marginal farmers and manual labourers. There are barely any jobs, only daily wage work.

I have been an ASHA worker since 2009. My husband is a commercial vehicle driver. We have five children, some of whom have already begun earning their own income.

My prime job is to visit expectant and new mothers and educate them about vaccination and childcare. I talk to pregnant women about the importance of institutional deliveries, which guards them against the risks of home births. From the first trimester itself, I support them with information, supplements, and guidance on budgeting for the future baby's needs. I bring mothers to the health centre for deliveries. I meet new mothers at least six times, at intervals as prescribed by the Home-Based Newborn Care (HBNC) guidelines, till their children are 15 months old. All these cases encompass both village settlements and refugee camps. I am aware that the presence of refugees creates some pressures on the local economy, but my service is equal for all, be it the villagers or the displaced.

At times, my colleagues and I find that new mothers hesitate to vaccinate their children because they are superstitious. We do our best to convince them. People have become open-minded about modern healthcare compared to when I started. They do not rebuff our visits or counsel outright. The facilities at our sub-centre are sufficient to manage most maternal and neonatal cases. We refer patients requiring complex procedures to the higher centres. Very few patients have to visit city hospitals for treatment.

This is possible because our sub-centre is operational 24/7. Lack of electric supply does not affect our work anymore; we have solar energy. It has greatly improved our capacity to serve the community. Power cuts would put us at a disadvantage. Without internet connectivity, we could not upload case reports on time. We could not charge our phones for days, which meant none of our cases could contact us, even in emergencies. Vaccines would spoil as the ice melted in refrigerators. Most critically, we would have to manually manage a significant portion of the deliveries. Given that we receive about 40 delivery cases every month, you can picture the relief solar energy has brought to us. For a tough town like ours, the sub-centre must keep running; it is the only place poor people can turn to.







In the Shadow of Light

MEDALTHANGA

Teacher

Secretary, Young Mizo Association (YMA)
Zokhawthar, Champhai District,
Mizoram

“The sub-centre is a very important part of everyday life; this is where people come for free treatments and medicines. Villagers already face numerous challenges, and a non-functional health centre can prove to be a heavy burden for them.”





I am a science teacher at the Zokhawthar Higher Secondary School. I live with my wife and our child not very far from the sub-centre. I am also an active leader of the Young Mizo Association, which is the largest social organisation for the Mizo people. Registered in 1977, it is run by a central committee in Aizawl. There are 805 branches, which cover all of Mizoram and some parts of Assam, Manipur, Meghalaya, Nagaland, and Tripura, where Mizo people live. YMA nurtures the Mizo indigenous identity and culture, develops social leadership, and works in the service of the people who are most disadvantaged. Between being a community leader and a teacher, I often come to the health centre with students or patients. The sub-centre staff regularly runs health checkups at the school too and distributes supplements and medicines for common infections like tapeworm.

We live in the India-Myanmar border area. Our economic and social challenges are unique. We have relatively decent roads and water supply, but public transport is as good as non-existent, and power supply is extremely unreliable because the electric lines laid along thick forests don't hold up to the natural elements. We have, on occasion, lived without any power supply for a week. The weather can be very rough and landslides can cut us off for days. Being in a border trade town means our people can get some work from traders, but they are all menial in nature. Poor villagers and transit camp residents are mostly used as loaders. We lack access to higher education and stable jobs. Most people live as small farmers and daily wagers.

The sub-centre is a very important part of everyday life; this is where people come for free treatments and medicines. They already face numerous challenges, and a non-functional health centre can prove to be a heavy burden for them. The solar powering of the sub-centre has made it possible for the staff to offer health services 24/7. The outpatient department is busy during the day; vaccination drives are conducted once a month, and emergency and delivery cases are common at night.



We live in the shadow of conflict; the place is fraught with socio-political complications. The YMA, with the help of the sub-centre, works extensively toward building peace and health, including mental health. Sometimes, looking at the solar panels on the roof, I wonder if it

might be feasible to give solar energy to each and every household and public facility. It will take care of so many health issues and hardships. It could turn the lives of the people around.



The Land of My Child

MONICA TINNI

Resident at Theiba Camp
Zokhawthar,
Champhai District,
Mizoram

“Theiba Camp is the only shelter we have. I live in one of its tenements with my mother, husband, and four children. The youngest was born at the Zokhawthar sub-centre two months ago.”





I am from Sekan, a border village in the Chin state of Myanmar. We are the Chin people, an indigenous group living in tiny hamlets in the mountain forests of the Arakan and the Chin Hills. We were forced to flee in 2021, leaving our homes and belongings behind because of the revolution. The Indian and the Mizoram governments have given us refuge. In 2023, we saw in the newspapers that our village was completely burnt down; only ashes remain. Theiba Camp is the only shelter we have. I live in one of its tenements with my mother, husband, and four children. The youngest was born at the Zokhawthar sub-centre two months ago.

We owned some land back home; it would give us enough to live on. At Theiba, India generously gives us a place to stay. We have access to free healthcare. The NGOs bring us food and supplies from time to time. Our

children go to the government school. My husband takes up daily-wage work whenever he gets the opportunity. I am unable to find employment because I lack the necessary skills. It's important to note that our lives in Sekan were far from easy. The only solace we had was that we were surrounded by friends and family. We know we will not be able to return anytime soon, so we make the best of our circumstances and try to bring some stability to our lives.

I have come a long way to speak with you. I don't know anything about power. I only know that when I delivered my youngest, the lights were on and the machines were working. It meant a lot to me. The care I received made me feel good and supported. In the many struggles of my life, I remember that day as special.





Off the Beaten Path

DR. VANLALPEKA P. L. PACHUAU

Medical Officer

Hnahlan Primary Health Centre (PHC)
Champhai District,
Mizoram

“ Since most systems in a health centre rely on electricity, in 2021 an attempt was made by someone to solar power the centre, but the system stopped working because no one looked after it. Till 2023, the centre relied on diesel-powered generators for a few hours of backup power. That too failed when fuel prices skyrocketed. So, when the government, the National Health Mission, and SELCO Foundation solar powered the centre, and provided a process for use and maintenance, it came as a blessing like no other. ”

I came to this extraordinarily scenic town of Hnahlan in 2023; beyond the rolling greens are the majestic Arakan mountains. On the other side lies Myanmar. Life in border areas across the world has layers upon layers of narratives because geographical boundaries and geopolitics run their course differently from human interactions; there are people in Hnahlan who once had farmlands in Myanmar; there are people across the border whose grandparents once lived here; in some places in the deep forest mountains, hamlet-dwellers may not even know where the border is. The ongoing political turmoil and religious persecution in Myanmar have forced the Chin people, who are Christians, into refugee camps. In an unprecedented display of goodwill and kindness, the government, the people, and the civil society of Mizoram have welcomed them with open arms. We have no refugee camps in Hnahlan, but we have a few refugees living with their relatives here. We are a health centre for four villages and many scattered hamlets all around the border. Anyone who walks into the Hnahlan PHC is our patient, and it is our duty to serve them.

My work life is extremely high-pressure and busy. My personal life is lonely sometimes because my wife and children live in Aizawl. But spending days in the service of the people, who are some of the poorest and most forgotten, fills me with joy and energy; it motivates me to stay on the path of humanitarian work. Last year, we received 4,833 outpatient cases and 458 inpatients. The numbers would be much higher for the current year. The average daily outpatient load ranges from 25 to 30, with some days seeing even 50–60 patients.

Our major services include vaccinations for pregnant women, newborns, and young children; home visits by the healthcare staff and Accredited Social Health Activists (ASHA), and home-based newborn care. In addition to this, we attend to three to six deliveries each month and perform approximately ten lab tests daily. We also provide all the services under the Ayushman Bharat Pradhan Mantri Jan Arogya Yojana (AB-PMJAY) scheme.



The packages include cashless treatments along with free advanced tests and investigations.

Most people in this area are subsistence farmers and manual workers. Some grow grapes to sell to wineries and oranges to the mainland. Cases of respiratory tract infections in young children and the elderly are common; these arise mainly due to ingestion of woodsmoke from fireplaces during the long and harsh winters. The health centre routinely organises interventions to raise awareness against this practice. Changes in seasons can sometimes cause diarrhoea outbreaks. Most children study up to high school locally, but their parents are too poor to send them to college; even the nearest one is 50 kilometres away. This is further complicated by the fact that the weather is treacherous, and landslides can crush and block roadways anytime. This can cause grid power lines to go down for days, sometimes even weeks.

Since most systems in a health centre rely on electricity, in 2021 an attempt was made by someone to solar power the centre, but the system stopped working because no one looked after it. Till 2023, the centre relied on diesel-powered generators for a few hours of backup power. That too failed when fuel prices skyrocketed. What we routinely struggled with were maintenance of cold chains for vaccines, managing cases of respiratory infections, deliveries, emergencies, and patients needing urgent lab tests. These require the usage of equipment, light, oxygen, radiant warmers, suction machines, autoanalysers, centrifuge machines, ice-lined refrigerators, and sometimes even teleconsultations; in the absence of power, our services suffered. It's not just patient care, a power cut impacts efficient cleaning and drying of the wards, internet connectivity, and administrative work as well.

So, when the government, the National Health Mission, and SELCO Foundation solar powered the centre, and provided a process for use and maintenance, it came as a blessing like no other. Just the other day, during an extended power cut, we delivered a healthy baby. The

mother Thanglianmawii and the father Lalruatpuia, who run a restaurant, have brought us sweets to express their gratitude.

I have been a strong proponent of solar energy since I was a child. My late father, Mr. Lalchharliana Pachuau used to work in the power and electricity department. He was always experimenting with new things. At one point, he installed solar panels on our rooftop that not only gave us enough supply but also redirected the excess to the local grid. Alternative, green energy is the way forward. He knew it then. As a doctor and a citizen of this century, I am experiencing firsthand the potential for social justice it holds.







Running a Full House

MALSAWMDAWNGLIANI

Nursing Officer

Hnahlan Primary Health Centre (PHC)
Champhai District,
Mizoram

“I recall a case from 2012, where we were unable to provide oxygen to a small baby with pneumonia. We watched helplessly as her condition deteriorated and she eventually passed away. I cannot forget the pain.”

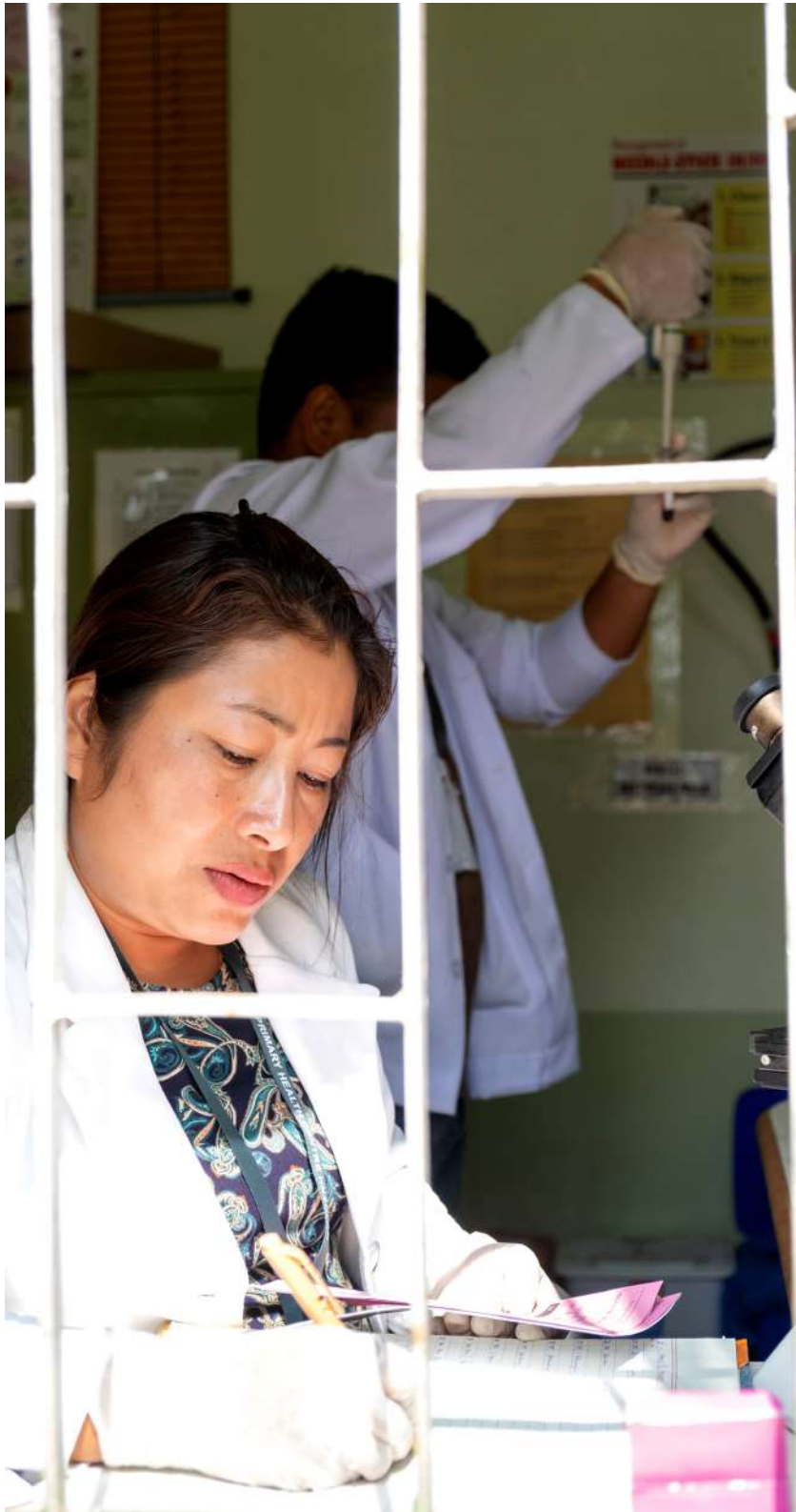


LABOUR ROOM
NAU' NEIHNA

Chinthee

PROGRAM'S
PHILIP TUN

EXIT



I have been a nurse at this PHC since 2004. Aizawl is my home, where my parents and siblings live. I got married in 2018, however my husband and I don't have any children. I have spent a greater part of the last twenty years at this health centre, taking care of all kinds of cases every day, from common colds to childbirths.

We serve 3,500 people living in villages around this small township. Many people have government or private jobs or own small businesses. They may sometimes go to private hospitals. Majority of our patients are poor, and they entirely rely on the PHC. Whatever one's background is, we all suffer from landslides, poor network connectivity, lack of public transport, and power cuts. The monsoons are the worst.

The centre has only ten beds; two are reserved for childbirth cases. Even with our modest capacity, we are one of the largest health centres in this area. On any given day, we have patients in excess of the number we can handle comfortably. People come from adjacent villages and border villages far away in the mountains — from infants to elderly folks to women in labour.

The centre has been created to treat common ailments and simple cases, but given the reality of life here, we even provide long-term care to critical patients who are poor. This creates a lot of work for the entire staff; we make creative use of all the available space. Even today, we have set up beds in the corridors to accommodate 25 additional patients.

Before the centre was solar powered, we had to deliver babies using candles and lanterns during power cuts. We had to deal with cases of accidents and injuries in darkness. We had to watch patients struggling for oxygen because oxygen concentrators can only run on power.

I recall a case from 2012, where we were unable to provide oxygen to a small baby with pneumonia. We watched helplessly as her condition deteriorated and she eventually passed away. I cannot forget the pain.



Today, there are two patients in the ward that I want you to visit, in particular. One is a mother, who delivered last night during a power cut, but since all the equipment was running on solar, neither she nor we faced any

inconvenience. The other patient is an elderly gentleman with a severe respiratory infection. He is comfortably hooked on to the oxygen; we are not worried about any disruption.



The Patient Factor

LALENGLIANI KHAWLHRING (MAENGI)

Pharmacist

Hlimen Urban Health Centre
Aizawl,
Mizoram

“For years, during power cuts, we had to refer emergency cases to higher-level government facilities, the closest of which is ten kilometres away and takes at least an hour to reach. Families would understandably get upset because they had to spend extra money on transportation, food, and even some medicines they could ill afford. Some of them felt so deeply disappointed that they never came back to the centre.”





We are the go-to clinic for 12,300 people in five villages around our ward and many tiny hamlets. Even though there are many private hospitals in the capital city of Aizawl, seven kilometres from here, most of our patients do not have the resources to afford healthcare anywhere else.

We are situated in the hills. During the monsoons, landslides and mudslides snag power lines, disrupting supply for longer periods than usual. This caused many difficulties for us. For years, during power cuts, we had to refer emergency cases to higher-level government facilities, the closest of which is ten kilometres away and takes at least an hour to reach. Families would understandably get upset because they had to spend extra money on transportation, food, and even some medicines they

could ill afford. Some of them felt so deeply disappointed that they never came back to the centre.

Finally, there is a resolution. The centre has been solar powered in early 2024. When there is a power cut, the new system automatically takes over. At the pharmacy, where I sit to dispense free medicines to patients, I no longer have to use torches and candles to locate medicines in the stockroom or read prescriptions. I don't even notice when the grid power goes out. The medicines we stock here are largely antibiotics, vitamins, supplements, cough syrups, anti-allergens, and pain medications. The demand for medicines increase as the seasons change and cases of common infections rise.

In the days we faced long spells of power cuts, medicines



and vaccines that needed to be stored at specific temperatures would lose their potency and go to waste. Dispensing medicines may look like a straightforward and quick job; but actually it involves explaining the prescribed medicines to the patients, counselling them to take the doses on time, writing them diet charts if needed, and giving them guidelines to follow. Sitting at the window of a dark pharmacy, talking to patients who can barely see your face, and squinting to write in the light of a mobile torch is as ludicrous and ineffective as it sounds. When there was daylight, at least one could step out on the small porch or work in the waiting room. Nights were particularly difficult. Sometimes, water would run out in the workstations sinks and the toilets, and our cell phones would run completely out of charge. It was harder than it had to be.

We have been using solar power at the centre for about seven to eight months now, and we cannot imagine working without it. It is much more economical and reliable than grid electricity. Our patients can stay in the wards in comfort and use fans and lights as needed. Our laboratory and emergency room are always operational. The internet and the phones work. Most importantly, the staff is not worried about having to turn away patients.

In rural areas, electricity plays a crucial role in people's lives, particularly because most of them don't have generators or inverters. During a power cut, public facilities and activities come to a halt. I wish, like us, the villages would receive solar power one day.



A Perfect Roll Call

LIANCHHINGPUII

Hostel Warden

Tlangnuam, Aizawl
Mizoram

“Too many students are ill with multiple infections at the same time. This is common during seasonal changes. The school nurse and I have brought them to the Hlimen health centre with complaints of skin rashes, eye infections, and varying degrees of colds and coughs. This is not the closest health centre to us. In fact, it is about 12 kilometres away. However, it has a larger setup with all the necessary amenities. The staff is very efficient. The lab runs like clockwork.”

THISEN / ZUN
TEST-NA

MALE

FEMALE

LABORATORY TESTS

1. Urine pH	80-100
2. Urine Glucose	80-100
3. Urine Protein	80-100
4. Urine Bilirubin	80-100
5. Urine Urobilinogen	80-100
6. Urine Hemoglobin	80-100
7. Urine Erythrocytes	80-100
8. Urine Leukocytes	80-100
9. Urine Epithelial Cells	80-100
10. Urine Crystals	80-100
11. Urine Casts	80-100
12. Urine Bacteria	80-100
13. Urine Fungi	80-100
14. Urine Parasites	80-100
15. Urine Trichomonads	80-100
16. Urine Nematodes	80-100
17. Urine Protozoa	80-100
18. Urine Helminths	80-100
19. Urine Arthropods	80-100
20. Urine Mollusks	80-100
21. Urine Platyhelminths	80-100
22. Urine Trematodes	80-100
23. Urine Cestodes	80-100
24. Urine Nematodes	80-100
25. Urine Protozoa	80-100
26. Urine Helminths	80-100
27. Urine Arthropods	80-100
28. Urine Mollusks	80-100
29. Urine Platyhelminths	80-100
30. Urine Trematodes	80-100
31. Urine Cestodes	80-100
32. Urine Nematodes	80-100
33. Urine Protozoa	80-100
34. Urine Helminths	80-100
35. Urine Arthropods	80-100
36. Urine Mollusks	80-100
37. Urine Platyhelminths	80-100
38. Urine Trematodes	80-100
39. Urine Cestodes	80-100
40. Urine Nematodes	80-100
41. Urine Protozoa	80-100
42. Urine Helminths	80-100
43. Urine Arthropods	80-100
44. Urine Mollusks	80-100
45. Urine Platyhelminths	80-100
46. Urine Trematodes	80-100
47. Urine Cestodes	80-100
48. Urine Nematodes	80-100
49. Urine Protozoa	80-100
50. Urine Helminths	80-100





I am a city girl, but my job has taken me to Tlangnauam, about six kilometres into the outskirts of Aizawl. I live in the residential quarters of a school and take care of the girls who live on campus. Our school is meant for children who live in hard-to-reach areas or face other social barriers that come in the way of quality education. We offer them free schooling from standard VI to standard XII. Many students come from villages that have no electricity connections even today. They belong to poor farming families who are keen that they get a decent education and do well in life.

Every school has a nurse who takes care of basic ailments. Starting this year, the government has started screening students for certain diseases and also introduced holistic preventive care as part of their lifestyle in school. I have also learned that urban health centres organise bi-annual checkups for aided schools. We don't have that facility yet as we are situated in the far suburbs.

Too many students are ill with multiple infections at the same time. This is common during seasonal changes. The school nurse and I have brought them to the Hlimen health centre with complaints of skin rashes, eye infections, and varying degrees of colds and coughs. This is not the closest health centre to us. In fact, it is

about 12 kilometres away. However, it has a larger setup with all the necessary amenities. The staff is very efficient. The lab runs like clockwork. All the medicines, vitamins, and supplements are easily available. Our students have received free tests, medicines, and consultation.

But for this centre, we would have to enter the city limits to consult a doctor, which would cost a lot of time and money. Ferrying sick children through the long traffic jams of Aizawl would be an ordeal too. As an aside, many people don't know that in Mizoram we don't honk, overtake, or break queues, even though just a kilometre can take up to 15 minutes to travel. We get jammed because the terrain is full of sharp hills and the roads are narrow.

It was a revelation when we found out that the health centre is solar powered and hence has an electricity supply 24x7. I can now understand why it runs so efficiently. This must be a true blessing for the community, as rural residents require a 24-hour facility. So do we. As a teacher, a warden, and a guardian for the young students who have come from a faraway place, it is good to know that if we ever come to this centre in an emergency, we will receive immediate help.





Nursing the System

HELEN LALTHIANGHLIMI SAILO

Assistant Professor

Mizoram College of Nursing
Falkawn, Aizawl
Mizoram

“In the event of a power cut, some things can switch to manual mode; rest stops. Think of it from the point of view of patients who come here from faraway villages, sometimes on foot. A power cut in a centre is a great disappointment to them, especially because they don’t have the wherewithal to turn elsewhere.”





I am a regular at the Hlimen sub-centre because I teach the four-year flagship programme at the Mizoram College of Nursing. In the third and the fourth year, community health nursing is an important subject for students. It requires them to perform nursing duties in the local community. Our go-to places for these hands-on training sessions are the urban health centres in Aizawl and this one, in the peri-urban centre of Hlimen; both are extremely busy and have a broad patient typology. The trainee nurses work through the outpatient hours, performing clinical duties. They also visit the community to participate in the mobile clinics and preventive healthcare awareness programmes run by the sub-centre.

Community health management is a matter of utmost

importance because 60 to 70 percent of people in our country still live in rural or peri-urban areas, where healthcare services are limited in scope. Consider Mizoram as an example, where there has been an improvement in antenatal care awareness, but awareness about non-communicable diseases such as hypertension and diabetes is limited. In the Hlimen area itself, we observe that most adults above 40 years of age are ailing from lifestyle-related diseases. In addition, communicable infections rise when seasons change. The sub-centre caters to 20,000 people from five villages, most of whom are from lower socio-economic backgrounds; they make a basic living through farming or quarrying. About 50–70 patients come into the outpatient department every day. Unfavourable weather conditions lead to an increase in that number. None of them can afford private healthcare.



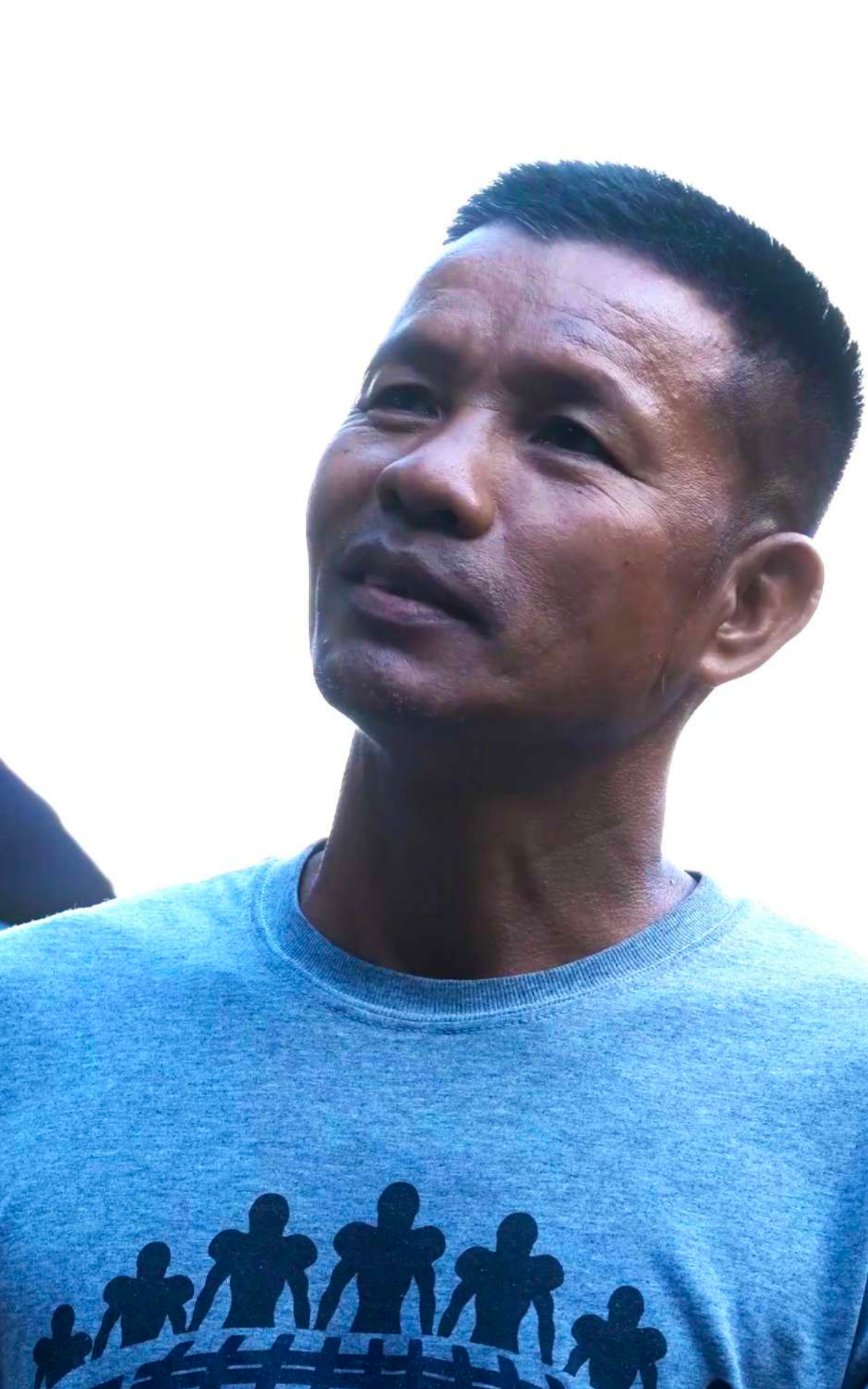
If the centre's free and subsidised services are not available, it will cause them immense distress.

The majority of Mizoram's terrain is hilly and remote, and people struggle with power cuts. Rainy weather exacerbates the situation. The cost of the state-provided electric power is also high. It is difficult for not only people but also health facilities to cover it in their budgets. This poses significant challenges to surgeries and patient care in hospitals and health centres throughout the state.

The roads are difficult to navigate and accidents are common. The number of delivery cases is also high. The emergency room is always busy. It needs, at the very least, lights, baby warmers, oxygen concentrators, and suction machines to work. The laboratory must

release test results on time. The centre also requires water supply not just in treatment areas but also in the toilets. The staff members require internet connectivity and their phones need to be charged. In the event of a power cut, some things can switch to manual mode; rest stops. Think of it from the point of view of patients who come here from faraway villages, sometimes on foot. A power cut in a centre is a great disappointment to them, especially because they don't have the wherewithal to turn elsewhere.

The government decision to solar power Mizoram's health centres is extremely beneficial, to say the least. The availability of electricity 24/7 directly upgrades patient care. It adds quality to the lives of healthcare workers and thereby the public healthcare system itself.



Bless the Centre

TLUANG HCNIN

Resident of Theida Camp
Zokhawthar
Champhai District,
Mizoram

“One positive aspect of our lives is the local health centre. It takes excellent care of expectant mothers, newborns, and children at the camps. The health workers visit regularly. They give vaccinations and supplements to the children at the right time. The sub-centre staff always make us feel welcome.”



MAU, DAP, RUA,
THINGTUA!
LÊ TÂN KIM KANG, HENG E
Ph. 1988
Hàng hóa nhập khẩu

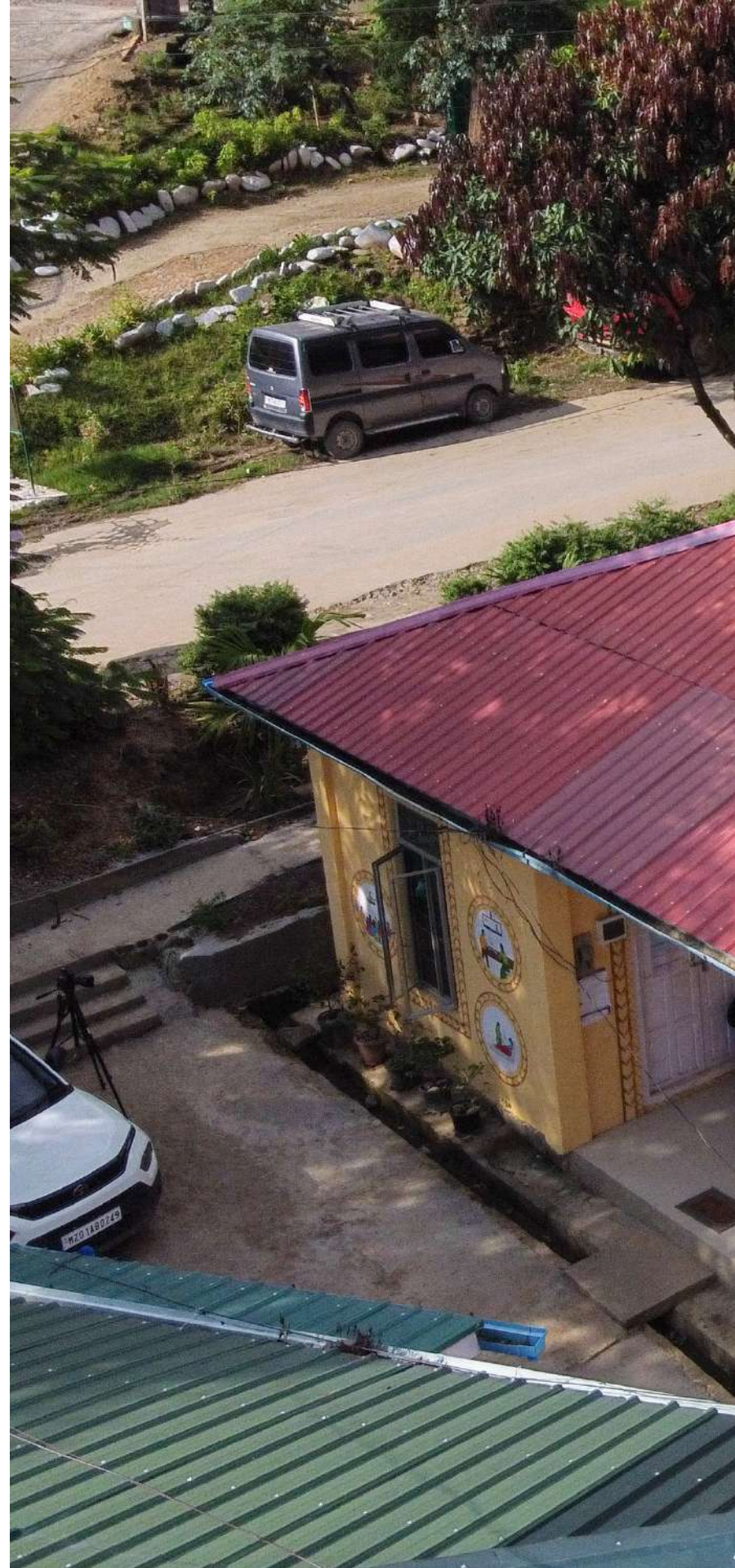
I live in a transit camp of 390 people, along with my family and fellow villagers from Myanmar. We are the people of Kalaymyo, where the conflict has been fiercest. Our houses were set on fire.

In our village, Sekan, we were marginal farmers and farm labourers. We used to grow rice, vegetables, fruits, and oilseeds for oil presses. We were a tightly knit community. We had a church where we gathered for births, deaths, and festivities. A military coup threw the country into turmoil on February 1, 2021, disrupting our simple lives. When people first protested, and then resisted, a civil war broke out. By the time that winter set in, the situation became so bad that we had to leave everything and escape. India has given us refuge in transit camps. What you see here is the sum of our home and belongings.

We practice Christianity, but by origin we are the Chin people, a Sino-Tibetan indigenous group. The forest and mountains you see from the camp have been our homes for hundreds of years. Despite the assistance provided by the Mizoram government and civil society organisations, we live in a poor region where even menial jobs are scarce. Sometimes, life becomes very difficult.

One positive aspect of our lives is the local health centre. It takes excellent care of expectant mothers, newborns, and children at the camps. The health workers visit regularly. They give vaccinations and supplements to the children at the right time. The sub-centre staff always make us feel welcome.

I knew that the centre is open for emergencies 24/7, but I didn't know the difference. Earlier, during power cuts, the services would not be available sometimes. Now, the solar panels supply electricity even during power cuts, so in a crisis we don't have to wait. I am truly thankful for this initiative. It is such a blessing. The area we are in has a power deficit. Nights without electricity are particularly challenging in the camps. I wonder if we could get solar panels under some programme too; it will be so beneficial for the children and the elderly.











FOLLOWING THE SUN

A TRANSFORMATION IN MIZORAM'S PUBLIC HEALTHCARE,
UPHOLDING SOCIAL EQUITY AND CLIMATE JUSTICE