FOLLOWING THE SUN

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

स्वास्थ्य एवं
परिवार कल्याण मंत्रालय
MINISTRY OF
HEALTH AND
FAMILY WELFARE
सत्यमेव जयते

Department of Health and Family Welfare

SELCO Foundation

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From the Health Minister's Desk

Honourable Shri Dinesh Gundu Rao
Minister of Health and Family Welfare, Karnataka

As the cornerstone of the Government of Karnataka's Gruha Arogya Yojana that strives to provide healthcare to the doorsteps of the rural and tribal people, the Saura Swasthya initiative underscores our commitment to address the unique challenges communities face in accessing healthcare.

The supply of reliable energy is fundamental to the success of healthcare systems. The delivery of critical medical services, such as the operation of life-saving equipment, the preservation of vaccines, and the 24/7 operations of health centres, suffers severely without it. Saura Swasthya addresses this challenge head-on by integrating renewable energy into healthcare delivery systems.

Launched in collaboration with the SELCO Foundation, the programme envisions the powering of 5,000 health facilities with solar energy by 2026, touching the lives of over 3,00,000 people across Karnataka. This ambitious vision is not only about providing healthcare; it's about making healthcare sustainable, resilient, inclusive, and futuristic.

The impact of the initiative is already profound. With over 1,152 health facilities powered by solar energy and 3 MW of solar power installed to date, we are witnessing transformations on the ground. Raichur, which is one of our aspirational districts, has set a precedent as the first district in Karnataka where all health facilities operate entirely on solar energy and deliver healthcare 24/7. The financial and operational benefits of this transition are equally remarkable. Health centres are cutting their electricity bills by up to 70%, thereby saving the state government over ₹1,000,000 crore annually. The replacement of diesel generators with solar power has not only cut costs but also reduced Karnataka's carbon footprint, reaffirming its leadership in green energy initiatives.

Saura Swasthya is about empowering people. Reliable energy enables health workers, many of whom are women, to take better care of their communities with greater safety. It also enables patients; since they don't have to travel long distances for care, they can save on transport costs and avoid loss of wages.

Saura e-Mitra, a digital platform developed in collaboration with the SELCO Foundation and the eGov Foundation, is another milestone. By enabling real-time monitoring of solar energy infrastructure in health centres, it ensures accountability in implementation, efficiency in operation, and the creation of long-term resilience for our health systems.

As we look ahead, the Saura Swasthya Initiative stands as a model and testament to Karnataka's dedication to innovation and inclusive growth. It demonstrates how energy and healthcare can come together to create a brighter, healthier future for all, driving social equity and progress. By incorporating the critical lessons emerging from the programme, Karnataka can further enhance the impact of its policies, ensuring that initiatives across sectors are efficient, sustainable, and scalable. The processes and frameworks developed under Saura Swasthya, such as effective operations and maintenance models and innovative system design approaches, also offer valuable insights to other state-led programmes.

It is a privilege to present the Saura Swasthya programme through the pages of 'Following the Sun'. This book captures stories of frontline workers and communities who are at the heart of this initiative. Let their work and their stories motivate us to amplify the impact of the programme so that every person in Karnataka, however remote an area they live in, has access to quality healthcare.

(Dinesh Gundu Rao)

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IKEA Foundation

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We would also like to thank

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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.

Starting in 1952, the Government of India, under its Community Development Programme, 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 should 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, complete 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.


WATER EXAMINATION CHART
Integrated Disease Surveillance Programme

Saurya Swasthya

Karnataka Department of Health and Family Welfare and SELCO Foundation

Saura Swasthya or Energy for Health is a joint initiative by the Karnataka Department of Health and Family Welfare and SELCO Foundation. It endeavours to strengthen service delivery across 5,000 public health facilities by 2026. To achieve this, decentralised solar energy is being incorporated as a foundational infrastructure in health facilities. Sub-centres are being powered with off-grid standalone DC solar systems (~1 kWp), and primary health centres are being powered with off-grid or hybrid systems (~5 kWp). The programme also includes pilots with rooftop grid-tie system installations for community health centres, block-level hospitals, and district hospitals (~10 kWp). Systems for sub-centres and primary health centres are designed as 'solar primary' systems; they use the grid minimally. Keeping in mind local needs and weather conditions, they offer a two-day autonomy.

Given the various stresses on India's electricity supply systems, Karnataka'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.

Saura Swasthya 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, Blockchain for Impact, the HT Parekh Foundation, 3M, Amadeus Software Labs, Autodesk, Maersk, Robosoft, the Rotary Club Bangalore, the Rotary Club Udupi, Sony India, Signify, Wells Fargo and Zayed Sustainability Prize. It is a result of the innovative spirit and years of commitment demonstrated by health practitioners of Karnataka. SELCO Foundation would specifically like to thank Karuna Trust and the Swami Vivekananda Youth Movement for their dedication to the cause.

Contents

The Health Democracy

DR. HARISH HANDE

CEO, SELCO Foundation
2011 Ramon Magsaysay Awardee

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, SELCO Foundation and Karuna Trust worked together in the forested B. R. Hills in Chamarajanagar. This is a biological hotspot where man and animal have

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!'

lived side by side for millennia. Green energy is a perfect fit not only because of the fragility of the terrain and the remoteness of villages, but also because it reduces the villagers' dependence on forest forage for fuel. Here, we showcased how DRE could be used not just to improve service delivery but also to deliver specialised services for dental health and eyecare. The partnership also innovated on processes to improve ownership and accountability. Patient Welfare Committees were co-opted via awareness workshops and trained to respond to operations and maintenance challenges the same way they would for a falling compound wall, a dead diesel generator, or broken chairs in the patient waiting area. The model is now being scaled by the Karnataka government.

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.

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 a foldable, solar-powered dental chair be developed to be deployed in difficult-to-reach areas such as the forest hamlets in the Western Ghats?

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's possible to democratise health — that it is not just a privilege for the wealthy, but a right for all.

The Future is Lit

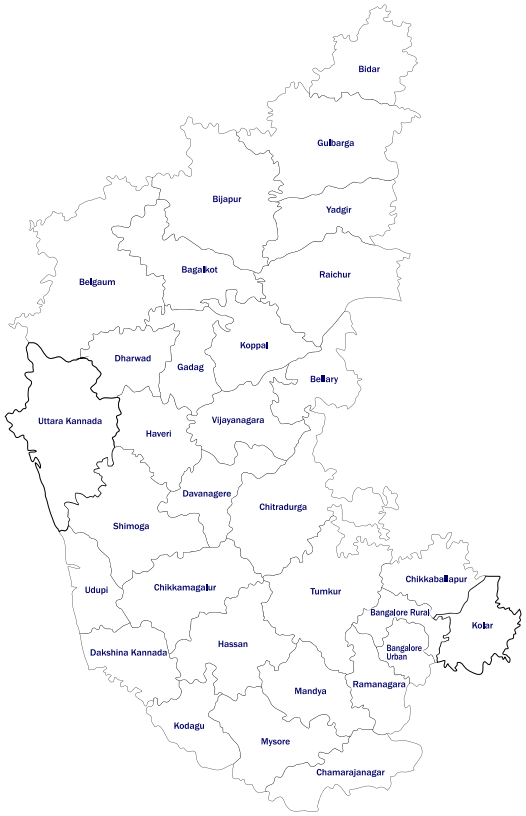
HUDA JAFFER

Director, SELCO Foundation

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.



Karnataka

The Energy for Health (E4H) Journey

2017

In partnership with Karuna Trust, SELCO Foundation establishes Gumballi Public Health Centre in Chamarajanagar district as an innovation centre to explore the role DRE can play to improve health services in resource-poor regions.

2019

- Karuna Trust and SELCO Foundation work across 30+ health facilities and solar power them in partnership with local governments.
- The government's Arogya Raksha Samithi (Patient Welfare Committee) funds are unlocked for maintenance of systems.

2020

SELCO Foundation works with local governments to decentralise health services during the pandemic, specifically by providing portable solar energy solutions for testing and immunisation.

2022

100% health facilities are strengthened with solar energy in Raichur District, in partnership with the district government and the collectorate.

2023

Operations and maintenance coordination centre model set up in Raichur in partnership with SELCO Solar Light Private Limited.

2024

Solar powering of 1,522 health facilities across Karnataka is complete. All primary health centres in North Karnataka are solar powered.

100% of the primary health centres in North Karnataka have already been covered. All the sub-centres in the region will be blanketed by the next phase. Additionally, we are solar powering large block and district hospitals with rooftop grid tie systems, which have higher capacities. Karnataka government's commitment to powering its health infrastructure with solar energy makes Saurya Swasthya one of the largest commitments in the country.

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.

In the state of Karnataka, where the programme marquees as Saurya Swasthya, we started working on a smaller scale with the state government and local partners in 2017. In 2022, we officially partnered with the National Health Mission (NHM) and began to roll out the programme statewide. We have powered close to 1,500 systems. 100% of the PHCs in North Karnataka have already been covered. All the SCs in the region will be blanketed in the next phase. Additionally, we are solar powering large block and district hospitals with rooftop grid-tie systems, which have higher capacities. Karnataka government's commitment to powering its health infrastructure with solar energy makes Saurya Swasthya one of the largest commitments in the country. The rate at which Karnataka has adopted the programme and the level of engagement that the NHM has offered in terms of the nuts and bolts of execution makes it an extremely successful case for consideration.

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 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, 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.

Green Foot Forward

DR. GYANESHWAR

Administrative Medical Officer
Yelhari, Konkal Primary Health Centre (PHC)
Yadgir District,
Karnataka

What could be better than seeing patients, who walk miles from villages experiencing power outages, enter a health centre, and sit under a running fan? It builds their trust in the system.

My work spans two PHCs that are six kilometres apart: Yelhari and Konkal. They are staffed with nurses, pharmacists, lab technicians, Auxiliary Nurse Midwives (ANMs), Accredited Social Health Activists (ASHA), and support personnel fully staff each of these PHCs. The facilities take care of 29 villages and eight hamlets with a combined population of 45,000. This translates to 100-150 outpatients a day and about 35 deliveries a month. In short, we are always busy.

Most of our patients are small and marginal farmers and wage labourers. They mostly come to us with fevers, coughs, headaches, upper respiratory infections, and injuries. Of course, there is also a significant demand for maternal and child care. While the terrain is not a 'difficult-to-reach' category, lack of transportation is a huge issue. Most patients cannot afford to rent private vehicles; they avail of it only in emergencies. I see them arrive on foot, sometimes alone, mostly in pairs. Sometimes, if lucky,

they are able to hitch a ride. For years, in emergencies, we have had to use inverters. However, the capacity of these systems is limited. You can at best use three or four pieces of equipment, but you cannot power the entire facility.

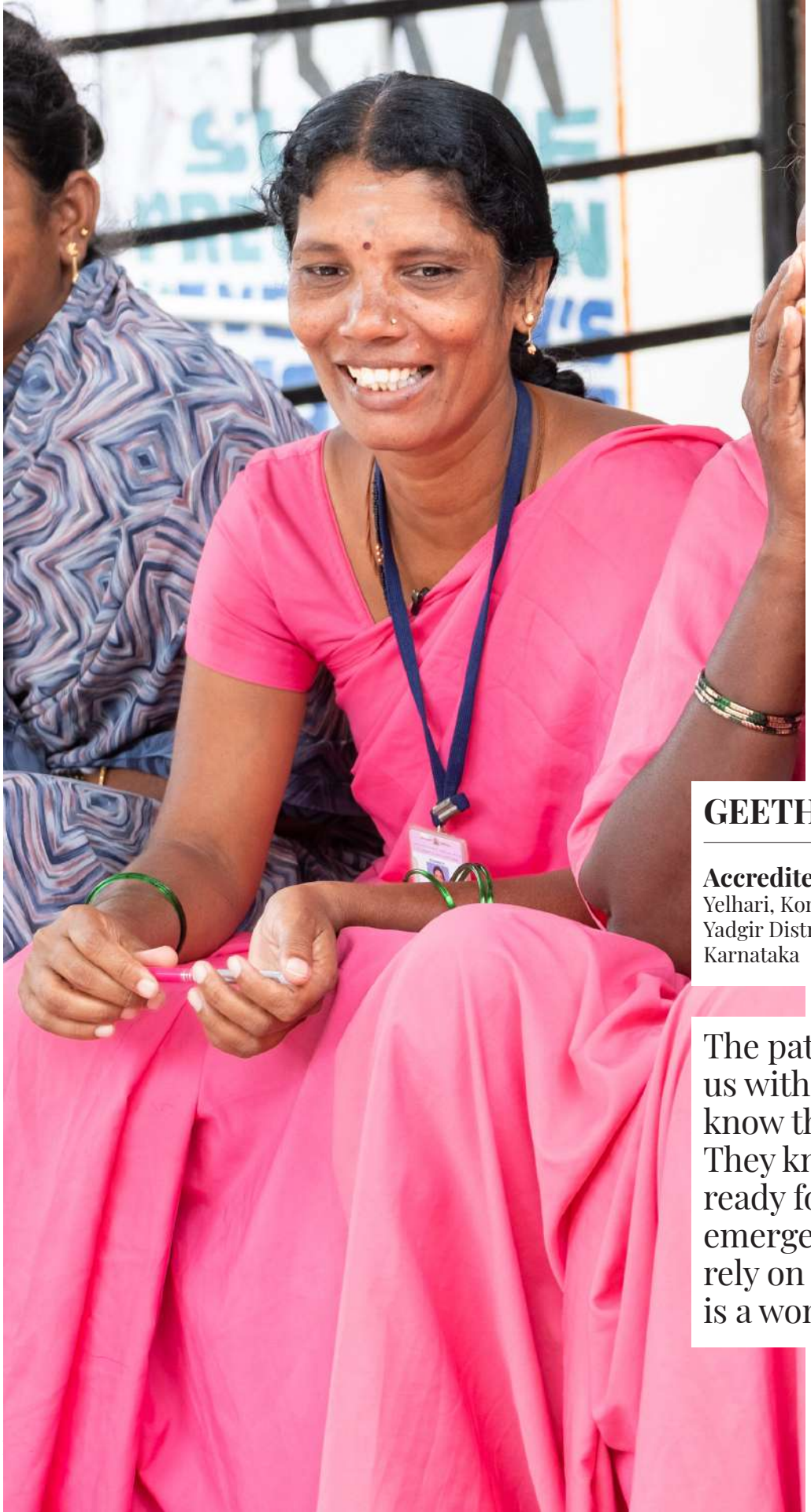
The installation of solar systems in health centres has transformed the way we operate. The systems cover the wards, labour rooms, labs, outpatient departments, common areas, and even the toilets. The refrigerators and freezers work; we don't worry about the maintenance of cold chains for vaccines and medicines. The staff, and occasionally even the villagers in need, are able to charge their phones. The water filtration systems, another basic necessity that would lie idle and gather dust, run smoothly. We need to monitor the premises for the safety and security of the inpatients and guard against false complaints. When troublemakers and vandals notice a brightly lit environment with active security cameras, they stay away. ASHA workers and ANMs don't worry about power outages at home; they file all reports online at the centres.

Solar energy is green energy. It is free. It is futuristic. It does not require any expensive fuel to run on. It only requires sunlight. In India, we have an abundance of it. What can be better than using solar energy for the delivery of public healthcare? What could be better than seeing patients, who walk miles from villages experiencing power outages, enter a health centre, and sit under a running fan? It builds their trust in the system.

Night Deliveries Are On

I am a ASHA didi. I am a part of India's primary healthcare sisterhood that forms the first point of contact, especially for women and children, in village communities. The communities we serve select us, so they are familiar with us and trust us. We are the smallest and yet the most essential building blocks of the National Health Mission.

This PHC serves as my reporting desk, and I regularly provide updates, with a particular emphasis on antenatal and postnatal care. Most of my work is concentrated in my village, Ashapur Tanda, situated six kilometres away. I live with my husband, two children, and mother-in-law. Most people here are uneducated and poor. I go for home visits to tend to the sick. I collect pap smears, prepare malaria slides, and conduct larvae surveys. I maintain a strict checkup schedule on antenatal and postnatal cases. I prepare expectant mothers for delivery. I book ambulances to bring them to the PHC when it's time. I give vaccines to children. I organise awareness meetings. I can go on. My duty is round the clock. I have



GEETHA SIVA REDDY

Accredited Social Health Activist (ASHA)
Yelhari, Konkal Primary Health Centre (PHC)
Yadgir District,
Karnataka

The patients have returned to us with trust. The communities know that this is a 24/7 centre. They know that we are always ready for deliveries and emergencies. They don't have to rely on costly private facilities. It is a wonderful feeling.

to be available in the community all the time. I have chosen a life of service. Even my own family does not see any value in what I do. I am told that I am neglecting my children and their education. It is true that I cannot give them as much time as many other mothers, but I cannot give up a job that serves so many other children and patients.

So, imagine the struggles of our lives when we would come to the PHC after a hard day's work to find it dark, hot, and still. Nobody would have any idea as to when the power supply would resume. There were no fans to sit under and cool off after kilometres of walking; no water to wash hands with or even drink; no place to charge the phones; and no way to upload reports. Even the toilets would be dark and unusable without water.

Imagine bringing a mother into this situation for a delivery! For years, villagers wouldn't contact us for night deliveries. They are used to power cuts. They are accustomed to the inconveniences that come with it. However, no one can be expected to confidently give birth to their babies in near-dark delivery rooms. Many

times, lights have gone out just as a baby was about to be born. We have then proceeded with mobile torches. Before mobile phones came, we used battery-operated torch lights and candles.

It was routine to see antenatal and pregnant women come for tests and sit for hours in the heat waiting for lab machines to start working. They had no option. Transportation services are poor here, and going to private facilities costs money. When we needed to enter data on the government online system, we had to go to the main hospital in the city to use the computers. It would take some time for the data to be verified, and then we would get our salaries.

The transformation feels unreal. All our worries disappeared since the solar backup system has been installed. There are no issues with the water supply; the pump can run long enough to store water. The drinking water filtration system always works. There are computers at the centre itself and a computer operator; we don't have to trudge to the city to file reports. We also no longer store vaccines in other PHCs as our own freezers are operational. We don't have to get vaccines to the villages before dawn, fearing the heat might ruin their potency; we have ice packs now.

The patients have returned to us with trust. The communities know that this is a 24/7 centre. They know that we are always ready for deliveries and emergencies. They don't have to rely on costly private facilities. It is a wonderful feeling.

A Tale of Two Centres

JOSLIN JULIE

Community Health Officer
Yelheri Sub-Centre
Yadgir District,
Karnataka

In effect, I live a life of contrasts every day — witnessing the benefits that solar power has brought to our primary health centre and facing the difficulties of running a sub-centre that doesn't have it. I have heard that we will receive solar panels very soon; I can't wait to see the day.

Today, we have a power cut since morning. I had planned a few antenatal checkups. But there is no water. The rooms are dark and poorly ventilated. It would be more convenient for me to meet mothers at the Primary Health Centre (PHC), which is less than a kilometre from here and is solar powered. A few other patients have also been waiting in the outpatient area; it will be better if I take them along.

I have been in charge of this sub-centre for three years. I attend to the everyday cases of general ailments. I examine 12–13 antenatal cases a month. Most examinations require at least a light. But power outages can be severe in the region. This is true even of our villages. Most nights, we have no power. When it rains very heavily, wires come loose. Wind speed also hinders transmission. We end up sitting in the dark for few days at a stretch. You can manage household chores with a power cut, but you cannot really run a sub-centre under these circumstances. We are forced to ask patients who require deep wound dressings and sutures to go to the PHC.

Yelheri summers are very hard. The daytime temperature can go up to 50 degrees celsius on a bad day. We cannot attend to patients outside in the heat, nor can we work inside the sub-centre, which is poorly ventilated, dark, and gets extremely stuffy. On some days, we exclusively work out of the PHC.

When the power outages are too long or too frequent, we run out of water in the taps. Handwashing is a necessity in our line of work. We need drinking water. We need water in the toilets. Once again, the PHC comes to the rescue.

In effect, I live a life of contrasts every day — witnessing the benefits that solar power has brought to our PHC and facing the difficulties of running a sub-centre that doesn't have it. I have heard that we will receive solar panels

very soon; I can't wait to see the day. Frankly speaking, we need a continuous supply of electricity for each and every health centre in the country.

When I started working here in 2020, even the PHC did not have solar power. Every month, both the generator and the inverter would malfunction. The doctors and nurses would find deliveries, especially those at night, extremely challenging. They were forced to use candles and torches, which is far from ideal.

The PHC is responsible for storing the vaccines in ice-lined refrigerators. In the past, the vaccines sometimes would deteriorate before their expiration date. Maintaining a cold chain amid so many power outages is almost impossible. Now, the PHC can maintain the cold chain round the clock.

Post-birth, babies have to be placed in a baby warmer at a temperature that matches the womb. The warmer operates exclusively on plugged-in electric current. At the PHC, where at least 20 deliveries occur every month, sometimes as many as two to four births per day, solar electricity has proven to be an invaluable resource.

Small Panels, Big Changes

I would sometimes find myself struggling in the dark to suture a routine episiotomy, and I would come out of the operation theatre feeling disheartened. Even though Kalmala had capable staff, the lack of access to various electrical equipment that eases the processes and reduces the margins for error was holding us back. Then, in 2021, the centre and most of its sub-centres received solar systems. It was a game changer.

DR. SHALAM PASHA

Administrative Medical Officer
Kalmala Primary Health Centre (PHC)
Raichur District,
Karnataka

Kalmala is a prominent PHC in Raichur. Along with its six sub-centres in Kalmala, Muranpur, Jageer Venkatapur, Marched, Jegarkal Mallapur, and Meerapur, it covers a population of 37,000 in 28 villages. On an average day, the Outpatient Department (OPD) receives over a hundred patients. The place is always buzzing with activity.

When I arrived here in 2015, the situation was entirely different. The centre was located in a dilapidated building. The power connections were damaged. The wards and the OPD were barely functional, and the toilets were broken. Responding to the dysfunction, in 2018 the government delivered this brand-new centre, complete

with up-to-date facilities and equipment. It now had a decent lab, ventilated waiting areas and consultation rooms, staff meeting areas, and, very importantly, toilets in each ward, labour room, and staff area.

However, we continued to struggle with long power cuts as the inverters did not have the capacity to fulfil the total demand. There were power outages almost every day and every night. Since the supply was dependent on the village-level infrastructure, whenever it rained, particularly during the monsoons, or when the wind speed picked up, the supply would abruptly stop for days. On occasion, we were forced to deliver babies by candlelight, lamps, and mobile torches. I sometimes would find myself struggling in the dark to suture a routine episiotomy — a surgical incision made in the perineum to widen the vaginal opening for delivery — and would come out of the operation theatre feeling low and disheartened. Even though Kalmala had capable staff, the lack of access to various electrical equipment that eases the processes and reduces the margins for error was holding us back. Then, in 2021, the PHC and most of its sub-centres received solar power. It was a game changer. Within a matter of weeks it changed the way we funtioned. We were able to operate at optimum capacity. Our OPD numbers increased.

Today, our lab services are readily available. Antenatal care, prenatal care, and delivery facilities are robust. We get uninterrupted power. The solar infrastructure switches on automatically when the grid electric supply fails. What this really means is that we are able to attend

to critical patients who come in at night with equal ease. The issue of the cold chain maintenance of vaccines is no longer a concern.

Delivery procedures require a continuous power supply, to run many equipment like focus lights, oxygen concentrators, suction apparatus, baby warmers, and we have it. Today, we are hailed as one of the model health centres in the state. We have received the 2024 National Quality Assurance Standards Award from the Karnataka government for maintaining the highest standards in six areas of concern — service provision, patient rights, inputs, support services, quality management, and outcomes.

Small improvements in working conditions make a major difference to people's well-being. Since solar power is available, I have not encountered any big operational challenges at the PHC. The staff members deliver efficient services regardless of the time of day or night. They do not struggle while performing deliveries or attending to accident cases. Most of all, they are happier at work. Even patients admitted to the wards feel better with the lights and fans on; the rooms don't feel stuffy, and mosquitoes don't bite.

In fact, several anganwadis — the government-run rural child care centres — have also been equipped with solar systems. During my rounds, watching the children, many of whom come from impoverished homes, spend their time watching television, playing games, and eating their meals under cooling fans, is truly fulfilling.

The Solar ‘Connection’

The solar backups have made the health centres so reliable that people who were afraid to come for deliveries a few years ago now perceive us differently. I see the change in outlook even in my own family. Recently, my youngest sister chose to have her first child at the primary healthcare centre in her village.

SARA BANO

Primary Health Care Officer (PHCO)
Mittimalkapur Sub-Centre
Raichur District,
Karnataka

I come from a small village called Rajoli in Raichur district. Growing up, I had never seen a health centre. The roads were poor and the bus services were unreliable. I had heard of many cases of pregnant women dying en route due to delays and complications. Like most children I was born at home. It feels incredible that I am now part of a healthcare system that is present in every village, has special ambulance services for pregnant mothers and babies, and many of its health centres can operate 24/7 because they always have power supply.

Ours is a busy sub-centre. It is the first point of contact for the communities here, mainly the economically and socially vulnerable, from four villages — Devanpally, Mittimalkapur, New Malyabad, and Old Malyabad. They have a total population of 11,800, most of whom are farmers and workers.

A trained Auxiliary Nurse Midwife (ANM), I started working here two years ago. ANMs undergo a two-year diploma programme that focusses on basic nursing education, especially in maternal and child health. They frequently lead sub-centres. We have two other staff members: a health inspection officer and a community health officer. Eight Accredited Social Health Activists (ASHA), two from each village, report to us. ASHA workers are part of the National Health Mission (NHM), while the ANMs are state staff. ASHAs are selected from and live in the villages they work in, while ANMs work in government hospitals, clinics, and health centres. Our training levels and responsibilities differ, but our work is similar in that it requires frequent interfaces with both communities and patients. Together, we handle all non-critical cases from these villages.

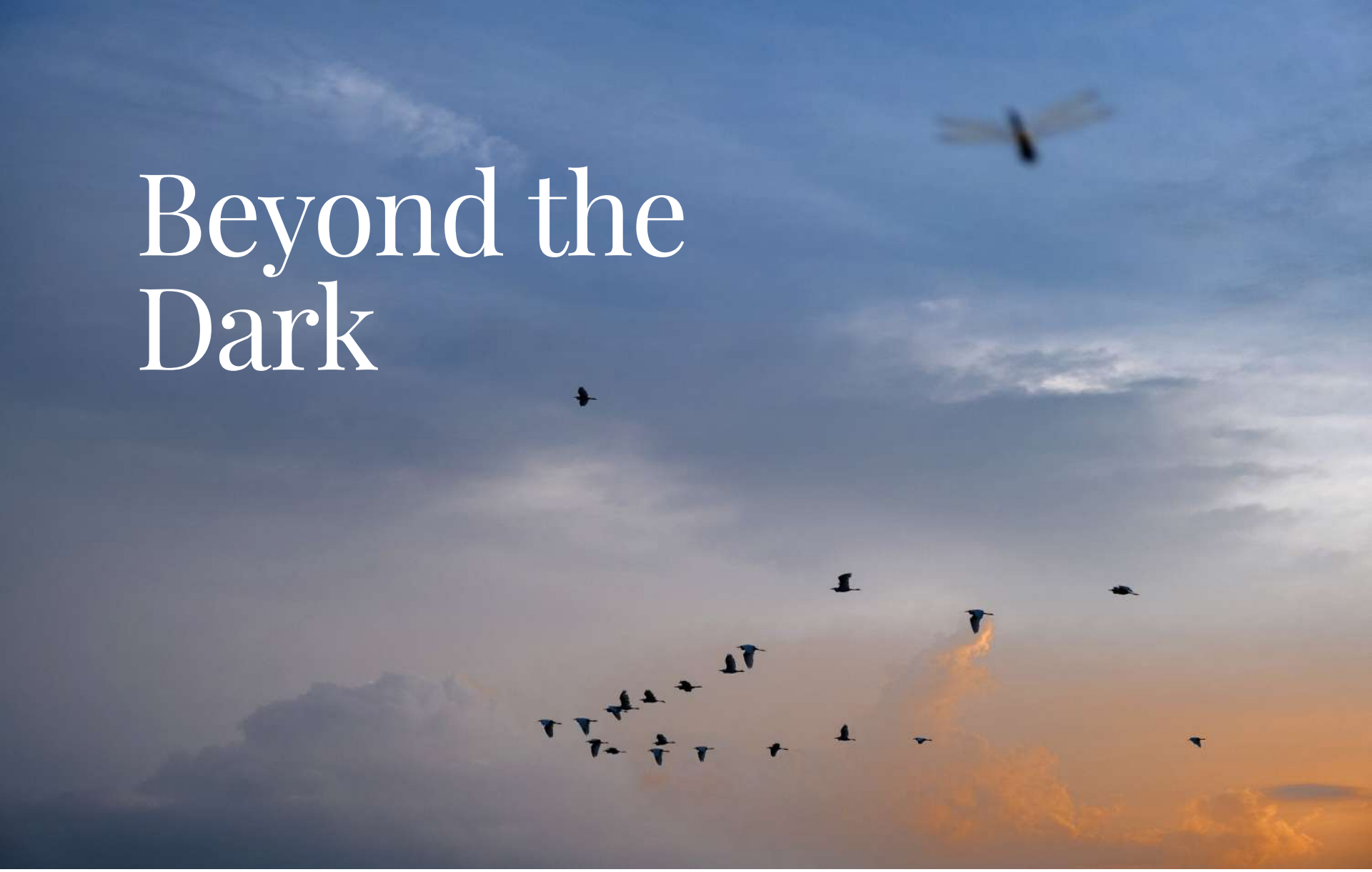
At the centre, we provide antenatal and postnatal care, as well as awareness and education to reduce any possibility of infant and maternal deaths. We treat people

suffering from communicable and non-communicable diseases. We attend to general health checkups and follow-ups. We go on regular field visits to check on pregnant women, implement new health programmes, and present sessions on disease prevention and control.

Power outages in this area are very common. During rainstorms, falling trees pull down electric poles and electricity supply does not resume for days. Although we have been fortunate enough to not hear of any pregnancy-related deaths in recent years, there were known occurrences when we were younger in the profession, when there were no solar backup systems.

Once a mother came in because her due date was approaching. We anticipated a normal delivery and patiently waited for the onset of labour to shift her to the Gunjahalli primary health centre, located just 15 minutes away. On the second day, she began to experience pain, which soon escalated to a grade three severity. Suddenly the lights went out. But we were not too worried because the Gunjahalli centre is solar powered. We rushed her there. The mother and child were both fine.

For the health staff, the availability of power 24x7 is an operational blessing. We can use the Reproductive and Child Health portal to update information about antenatal and postnatal cases without delays. We can run routine tests in the laboratory with ease. And we find that the patients connect with us better. The solar backups have made the health centres so reliable that people who were afraid to come for deliveries a few years ago now perceive us differently. I see the change in outlook even in my own family. Recently, my youngest sister chose to have her first child at the primary healthcare centre in her village.



Beyond the Dark

I came here nine years ago, in 2017, to start my life in this profession, even though the path was rather long-winded. I had trained at the nursing department of the Raichur Institute of Medical Sciences in 2011. When I passed out, no placements were available. I had a lot of responsibilities at home. I was getting restless. So, I appeared for the Karnataka Police Constable Exam and got through. I worked as a civil cop for five years; the long shifts and hard assignments were manageable, but obtaining leave was nearly impossible. My family needed me from time to time, and slowly the situation became untenable. So I reapplied for a nursing job, and this time, I guess, the time was right.

I got accommodations in the staff quarters at the newly built PHC right away. But the electricity supply was unreliable; we got barely a few hours of respite. This meant we couldn't even run the water pump on time. The new building was not inaugurated till 2019. Every time an emergency case arrived at night, I had to walk to the old centre, about four kilometres away. Despite the presence of lights on the roads, the darkness that enveloped the entire PHC area scared me. It felt unsafe. On vaccination days, on Tuesdays and Thursdays, especially in peak summers, we would have at least 20–25 children waiting in the outpatient department with their families. The fans would be still. No lights would work. We would struggle

BEEBI FATIMA

Auxiliary Nurse Midwife (ANM)
Gabbur Primary Health Centre (PHC)
Raichur District,
Karnataka

I won’t likely forget the day our centre adapted to solar power. It was March 20, 2022. I got married two days later.

to maintain the vaccines at the prescribed temperature. Despite our best efforts, some stock would get spoiled.

I won't likely forget the day our centre adapted to solar power. It was March 20, 2022. I got married two days later. My husband is a physics lecturer, and we have two children now. My pregnancies were completely monitored at this PHC; my deliveries were conducted at the civil hospital only because I faced certain complications. The norm is to conduct regular deliveries at the PHC and refer the others to bigger facilities.

Our health centre has had a 24-hour power supply for the past two years. The quarters, where some of us live and make critical and emergency care possible 24/7, also have solar power. We have lights, fans, and regular water supply, which makes our lives a little less stressful and our work lives a lot more efficient. We are also able to save on the electricity bills. The centre and adjoining buildings have been given lights, fans, and medical equipment that are compatible with the solar infrastructure, and the system itself requires timely but minimal maintenance.

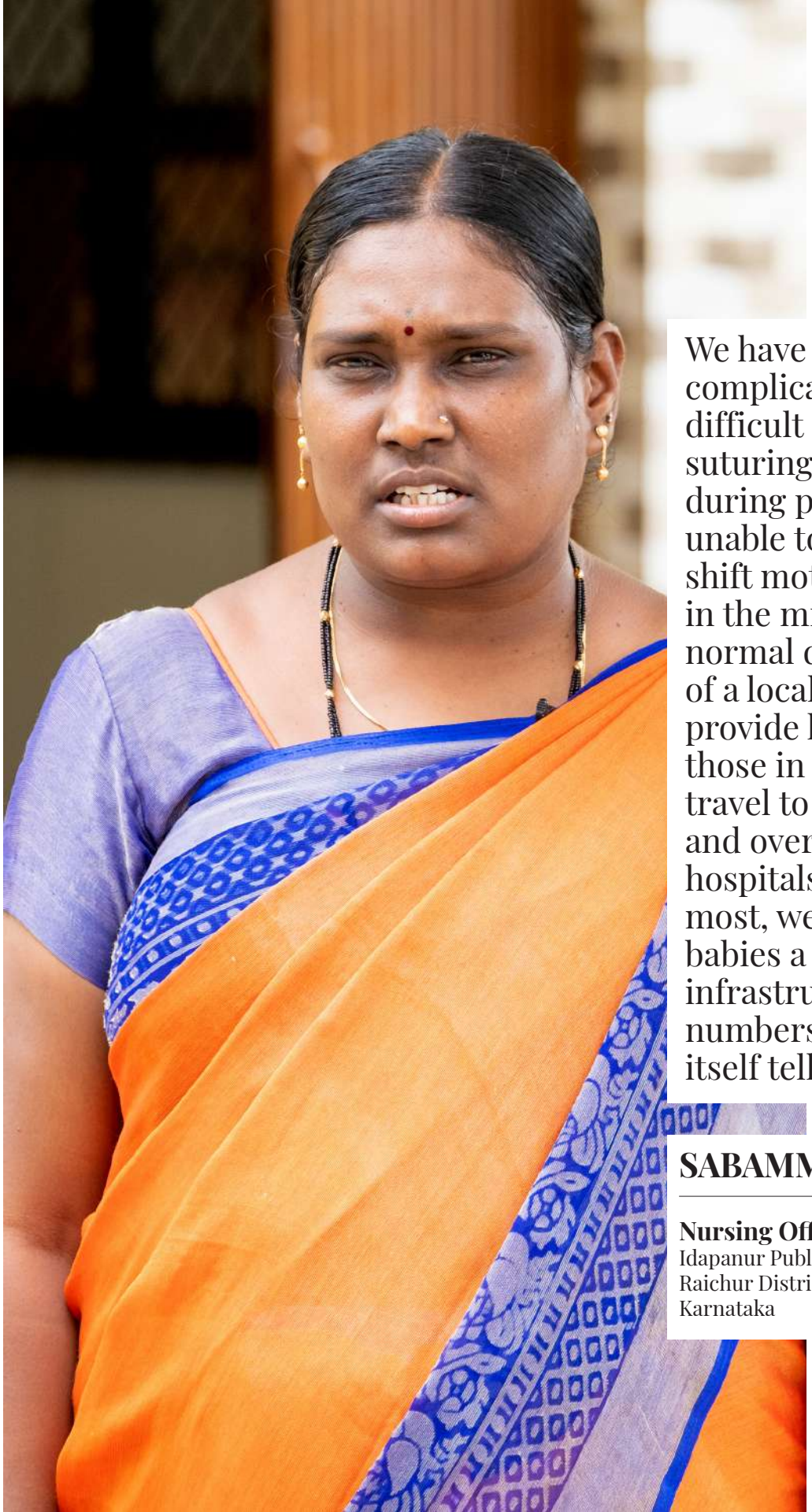
The refrigerator is never out of power; the vaccines are safe. The effectiveness of immunisation drives has significantly increased due to the availability of ice packs that the staff can use to transport the vials to the villages. I remember the early days when women would come for deliveries at night, see the PHC sitting in darkness, and would decide to turn back and have their child at home. Now, most expectant mothers, even if they experience any distress, they come and stay here until they feel well enough to return home.

Testimony of a Night Nurse

I live here, at the staff quarters behind the PHC. Once the outpatient department closes and most of the staff leaves for the day, the night shift commences. I am the night nurse. Along with very capable attendants, I take care of what is arguably one of the most intense patient demographics.

For eight years I have attended to emergency cases and outpatients. Whether it's an accident or poisoning case, a child with a high fever, or a mother ready for delivery, I take care of them in the emergency facilities. One would think that only patients who require admission come in the after hours, but you will be surprised how many high blood pressure cases we attend to. We have to be extra careful to identify high-risk patients and send them to the hospital quickly. In the nights, time is of greater essence .

If a woman arrives for her first delivery after her water has broken and she is not experiencing labour pains, we have to induce labour. In most cases, it is a normal delivery because the PHC staff identifies cases with complications early on and refers them to the district hospital directly. I put the just-delivered baby in the warmer, provide it with oxygen, and clear out its air passages with a suction pump. If the mother is bleeding, we put her on an intravenous line and give fluids and medications. We move the baby to the ward after 48 hours of observation, once both the mother and the baby are stable. For antenatal women experiencing sudden pain or discomfort, we conduct a thorough checkup and, more often than not, keep



We have dealt with complications during deliveries, difficult episiotomies, and suturing of accident victims during power cuts. Many times, unable to cope, we have had to shift mothers to the hospital in the middle of the night for normal deliveries. The purpose of a local health centre is to provide health services closer to those in need, not force them to travel to distant, uncomfortable, and overcrowded referral hospitals. In those days, at the most, we used to deliver 15–16 babies a month. After the solar infrastructure arrived, the numbers almost doubled. That itself tells the story.

SABAMMA

Nursing Officer
Idapanur Public Health Centre (PHC)
Raichur District,
Karnataka

her overnight for observation. Very often, we need to establish an IV line for them and check the heart rate of the foetus with a doppler device.

Now that I have provided you with some details about the nature of the work, you probably understand how challenging were the times when there was no solar backup for power outages. The inverters were not powerful enough; the lights would flicker and hamper the work. When it rained for days, the batteries didn't last.

At times, we have had to keep a baby under observation for several hours in the dark, while struggling to assist it using manual techniques. At other times, we have had to deal with prolonged labours, about eight–ten hours ,without electricity. We have dealt with complications during deliveries, difficult episiotomies, and suturing of accident victims during power cuts. Many times, unable to cope, we have had to shift mothers to the hospital in the middle of the night for normal deliveries. The purpose of a local health centre is to provide health services closer to those in need, not force them to travel to distant, uncomfortable, and overcrowded referral hospitals. In those days, at the most, we used to deliver 15–16 babies a month. After the solar infrastructure arrived, the numbers almost doubled. That itself tells the story.

Vial of Life

The purpose of this PHC is to provide services to the 15 surrounding villages. There are four sub-centres in these villages that report to us. Every Tuesday and Thursday, the staff goes to the sub-centres closer to their villages to administer vaccines to children. On those two days, I have to reach the dispensary early and pack the vaccines in ice packs for them to carry. Each of these days, we vaccinate approximately 20–25 children. Approximately 500 children receive vaccinations from this location annually. At the end of the day, we bring back any leftover vaccines and either re-store them or discard them, depending on their condition.

Every PHC has an ice-lined refrigerator (ILR). It is used to store vaccines that are given to children in all communities free of cost under the National Health Mission in order to prevent mortality, morbidity, and disability from diseases that are preventable. The purpose of an ILR is to maintain a temperature between +2°C and +8°C with as little as eight hours of power supply in 24 hours. But power outages can last much longer in this region, sometimes for days. When the ILR temperature crosses +8°C, the vaccines get spoiled. Each vaccine vial is equipped with a vaccine vial monitor, which features a round circle that changes colour in response to temperature. When the

I am the lone pharmacist here, and I live 30 kilometres away. I bear the responsibility of preserving the quality of all medical supplies. I have spent years going to bed at night full of worry.

SHAMEEM

Pharmacist
Gabbur Primary Health Centre (PHC)
Raichur District,
Karnataka

circle is white, it signifies that the vaccine is ready for use. If there is a slight change in colour, the vaccine is still usable. However, if the circle becomes dark, we must discard the vial.

For years, we rushed to move the vaccines to a cold box filled with ice packs whenever the power went out for more than eight hours. The ice box would keep the stock at the appropriate temperature for another eight hours. If the power did not resume in some more hours, we would shift the stock to another PHC. I am the lone pharmacist here, and I live 30 kilometres away. I bear the responsibility of preserving the quality of all medical supplies. I have spent years in the job going to bed at night full of worry.

My life has been calmer since we have received the solar power backup system. I find it much easier to do my work. Effective preservation of vaccines is possible only if there is a continuous power supply. Now that the issue is resolved, I have time to monitor the ILR and the deep freezer, as well as the status of the supplies. I arrange and update the medicine stocks at ease.

Patients come to the dispensary with the medical officer's prescription, which I read out to them before giving them the medicines. On Mondays and Thursdays, the patient load typically crosses 100. It gets really crowded. In the pre-solar days, when the power went out, without the fans running these were suffocating shifts. I am so relieved that I have to revisit that experience only in memory.

From a personal perspective, the PHC has truly become operational around the clock. I am a beneficiary of that. During my third pregnancy, I rented a room nearby. Being a high-risk case, I wanted to avoid the long travel to and from work. Throughout the nine months, the staff routinely monitored my vitals. Mid-pregnancy, at nights, I would have to return for heparin injections, and, unlike the pre-solar days, I would find the PHC lit and running without a hitch.

A Light Goes a Long Way

Having served here for 15 years now, I have seen how the centre and its functioning have transformed; we have come a long way.

The old PHC building was not in a good shape. The structure was outdated, as were many of the facilities. It is difficult to upgrade systems in old, crumbling buildings. The approach to the PHC was a dirt path, and there were no lights. It was not unusual to encounter snakes and small predators at night. And when emergency patients finally did reach the PHC, they would find us scrambling for basics such as lights and hot water because, in those days, power outages in the evenings were the norm.

Even though we moved into a brand-new building in 2018 with many updated facilities, the issue of power outages persisted. Till 2021, ever so often, we tended to deliveries and accident cases in the night by emergency lights and without access to basic accessories such as suction machines, oxygen concentrators, baby warmers, overhead focus lights, water heaters, and water filtration systems. Inverter backups helped a bit, but their capacities are low, and on a busy day or night, at some point we would have to switch to doing everything manually. Patients came here reluctantly; they were forced to because going to the hospital in the city costs extra time and money. We could understand their concerns because who wants to be treated at a place where even lights and fans are not working, where the surgery has to be lit up with candles and mobile torches, and where a fully-equipped lab sat idle? The staff was always stressed and hard-pushed for time. A general

If I can't come back from the field, sit under the fan awhile, drink some water from the filter, use a toilet that has a working light and running water, charge my phone, and start uploading my reports in the online system, it is not just my quality of life that suffers; it impacts every life that I bring back in my files.

RASOOL BI

Primary Health Care Officer (PHCO)
Kalmala Primary Health Centre (PHC)
Raichur District,
Karnataka

sense of dissatisfaction loomed over us.

In 2021, we received solar power in the PHC. When the normal electricity supply fails, it automatically powers up every area of the building. When we informed the villagers about it, they were overjoyed because it meant that from that day on they would not have to go any further for their medical needs.

The same applies to us as staff members. We have various responsibilities. As an auxiliary nurse midwife by training, I vaccinate a minimum of 25-30 children every Thursday in the sub-centre building outside. Mothers bring their children more willingly than before because they can sit under the fans and rest. In the villages, I raise awareness about general health and good nutrition. I attend to expectant mothers, provide them with required supplements and injections, and remind them about the vaccination schedule. I visit patients suffering from general ailments. I administer medicines to and collect samples from patients suffering from communicable ailments. I also keep a tab on high-risk blood pressure and tuberculosis cases. I listed these for you to show that our work entails a long and continuous list of tasks. When you have a population to look after that runs into tens of thousands of people, lack of electricity for a few hours a day piles up work not just on my table but in every department. If I can't come back from the field, sit under the fan awhile, drink some water from the filter, use a toilet that has a working light and running water, charge my phone, and start uploading my reports in the online system, it is not just my quality of life that suffers; it impacts every life that I bring back in my files. These are invisible, everyday struggles that a solar backup has permanently resolved.

I Have Faith in My PHC

I am pregnant with my third child. Today, I have come to the sub-centre for a routine checkup. My husband Ranjith and I live nearby with my mother-in-law and our two children; our elder one is four years old now and the younger one is two. Both of them were delivered here.

Today, I am sitting under a running fan and talking to you comfortably. The other children who are waiting with their mothers are not irritable as they often can be if the waiting area is hot and stuffy. Back in my village, the fans are mostly still. The monsoons are the hardest period. Without electricity, all of us face hardships. My husband and I have brought a transformer for home because the electric supply can go out for a day or two at a stretch, and occasionally for up to four or five days. Poor families and their children are forced to live in this situation. Farmers are unable to draw water to

The nurse who visits the village monitored my vitals regularly and provided me with advice on nutrition and protein intake. It was she who recommended that I give birth at the health centre, as it has all the necessary facilities available 24/7. Given that private healthcare is so expensive, I followed her advice. My delivery was safe and comfortable.

SAROJA

Antenatal Mother
Mitti Malkapur Village
Raichur District,
Karnataka

irrigate crops as required. Mothers find it difficult to run households. Small businesses suffer. Most villagers lack the financial resources to purchase inverters or transformers. In fact, there are sub-centres in remote areas that don't have a backup source of power even today. I am told that the government initiative will cover them soon. But the current situation poses numerous challenges for the doctors, the medical staff, as well as the patients.

When I got pregnant for the first time, it started with bouts of vomiting. Therefore, I reached out to the village Accredited Social Health Activists (ASHA). She confirmed my pregnancy and took me through the guidelines on how to manage the pregnancy. The nurse who visits the village monitored my vitals regularly and provided me with advice on nutrition and protein intake. She also gave me the necessary medicines and injections. It was she who recommended that I give birth at the health centre, as it has all the necessary facilities available 24/7. Given that private healthcare is so expensive, I followed her advice. My delivery was safe and comfortable.

This experience really built my faith in the centre. I appreciated that the staff had guided me well. Through the course of the pregnancy, the medicines, injections, and consultations were all free. They brought me here when the time was right. There was absolutely no need to spend money on private clinics. This knowledge is crucial for all families today, especially poor families. They are unable to cover the expenses of private healthcare, and run up huge debts.

Although I had heard about solar panel systems, the powering of this sub-centre truly familiarised me with their benefits. It got me thinking. I am convinced that the government should consider installing them not just at healthcare facilities but also at safe locations in all the villages. Just as it has improved the quality of public healthcare, it can lift our lives.

The Power Couple

Before the installation of the solar backup, I had a different mindset. But now, even though there are three or four private hospitals in the area, as a village leader I counsel patients to come to the PHC. When poor people go to private hospitals, they end up accumulating debts. Thanks to the green energy backup, they can receive all kinds of treatment for free 24/7.

SUGURESH

Member, Gabbur Village Panchayat
Raichur District,
Karnataka

It was a normal delivery, and the newborn was in good health. Then the mother started bleeding profusely. By this time, the power had gone out. The staff had to quickly gather all mobile phones and torches to illuminate the surgery. It took hours to stabilise her. Everyone worked tirelessly to save her life, but the experience was frightening. It need not have been so intense and hard. It isn't. Anymore.

NAGAMMA

Accredited Social Health Activist (ASHA)
Gabbur Primary Health Centre (PHC)
Raichur District,
Karnataka

Nagamma: It has been a long day. The work schedules of Accredited Social Health Activists (ASHA) are typically so. I wake up at 6 am, get my children ready for school, complete the basic chores, and then leave for work by 8.30 am. I spend the rest of the day checking in with the village community, focussing on antenatal and postnatal cases, the elderly, and the children in particular. I collect various samples and smears. To ensure that the antenatal women attend their scheduled follow-ups, I often accompany them to the centre for blood tests, injections, and scans. I must do the same for any ailing villager who lacks a companion to take them to the centre. Despite being a kilometre from the village, the pregnant and the sick take almost an hour to walk to the centre. Most of our patients cannot afford to pay for transport.

By the time I arrive with them, complete various checkups, and take them back home, it is 2 pm. I make a quick lunch and eat it with my children before they leave for school again. In case my husband has returned from work by then, I ask him to drop me to my next patient. On a good day, I return by 5 pm, but the end of the workday is never certain. I may get a call any time of the day or night. My phone must be on at all times. Thankfully, my husband is a member of our village panchayat. He understands what it means to be in the service of people. So, we are able to manage the household together.

Suguresh: Our village faces a severe lack of clean water. We have no structured garbage disposal system. There is a power cut daily for two hours in the morning and two in the evening. Access to healthcare was also a major concern until recently when Nagamma informed me about the arrival of the solar infrastructure at the PHC.

We have a large number of tuberculosis and asthma patients. Seasonally, we see a spike in malaria and dengue cases. Then there are general infections, emergencies, vaccination requirements, and childbirths throughout the year. If someone has an accident in the night or is ready to deliver, Nagamma and I are both up. Recently, I brought in a boy who had crashed his bike while driving drunk. I called an ambulance, got him treated, and dropped him home. The other night, Nagamma received a phone call from a mother in advanced labour. We called for the ambulance and accompanied her to the PHC.

Before the installation of the solar backup, I had a different mindset. But now, even though there are three or four private hospitals in the area, as a village leader I counsel patients to come to the PHC. When poor people go to private hospitals, they end up accumulating debts. Thanks to the greenen energy backup, they can receive all kinds of treatment for free 24/7. Patients and their families often arrive in a state of panic or worry. Although it may not seem like it, having functioning lights and fans is calming. The same goes for the staff. Not only are they comfortable, but they can use all the equipment, machines, and heating and cooling facilities timely. People often overlook the small changes that actually have a big impact. For example, in the past, days would pass without electricity to draw water to the overhead tanks, and you can imagine the stress of working in a busy health centre without functional toilets.

Nagamma: Looking at the brightly-lit building at night today, it's hard to believe that not so long ago, dogs and snakes used to enter the premises. I recall a case where I transported a mother in labour to the sub-centre past midnight. It was a normal delivery, and the newborn was in good health. Then the mother started bleeding profusely. By this time, the power had gone out. The staff had to quickly gather all mobile phones and torches to illuminate the surgery. It took hours to stabilise her. Everyone worked tirelessly to save her life, but the experience was frightening. It need not have been so intense and hard. It isn't. Anymore.

In fact, late one night, Suguresh developed severe stomach cramps. He was in agony. I called an ambulance and brought him straight here. I knew he would receive the best possible care. Such is my faith in the PHC.

Suguresh: I have a small solar panel at home, just enough

to light two bulbs at a time. It brings us a deep sense of comfort. I hope all village homes have solar power one day. It would take away a great deal of suffering.

Nagamma: I don't really know how the solar panels work, but on days I am at home alone after dark, I keep the light over the small household temple on. It makes me feel safe. I also turn on the light outside the house. It brightens the street and possibly helps passersby. Most of all, I can keep my phone charged as it is a non-negotiable requirement for my work.

FOLLOWING THE SUN

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