

Community Health Workers of Tsaratanana Commune gather during a week-long training in the management of child malnutrition cases.



QUARTERLY IMPACT REPORT

July 1 - September 30, 2023

Dear Pivot community,

We're proud to present the fourth and final Quarterly Impact Report of FY23, covering the last period in which we're operating at the level of a single district. As we work our way into a new year, we're thrilled to launch regional expansion into the two additional districts that, along with our home base of Ifanadiana, comprise Vavovavy Region.

This quarter brings full circle efforts catalyzed back in early 2022, when Vavovavy became the centerpoint of cyclones Ana and Batsirai, two major tropical storms that hit eastern Madagascar in quick succession. This left thousands of families displaced, infrastructure destroyed, and 90% of crops lost across the region; it also accelerated the process of accepting the Government's invitation for us to expand regionally. Over the following year, the urgency of the need became increasingly clear: child malnutrition rates spiked while cure rates decreased, with notably more recurrences due to heightened food scarcity. These realities serve as a reminder of the interconnected nature of human and environmental health, especially in a fragile environment like Madagascar. Every cyclone season has a direct impact on the population, often leading to loss of livelihood (given many work in agriculture), loss of housing, the spread of infectious disease (linked to group shelters and compromised water sources), and heightened risk of malnutrition (due to all of these factors).

With a global need for resiliency strategies in response to such catastrophic climate events, we are fortunate to have received an invitation to partner with the Stavros Niarchos Foundation (SNF) who, as of this quarter, are funding our three-part response to post-cyclone malnutrition crises. The strategy includes: targeted training for all Community Health Workers in prevention methods for chronic malnutrition in infants and young children; regular refresher trainings for primary care providers in severe acute malnutrition; and launching an emergency program to identify and treat children with moderate acute malnutrition before they escalate to severe.

This cross-cutting initiative also underscores the importance of working across all levels of the public health system, ensuring continuity of care for each patient – from their community, to a health center, to the hospital, and back. Between accompanied referrals and household check-ins by community health and social workers, our aim is to not let any patient slip through the cracks and risk falling back into a cycle of malnourishment and vulnerability to further disease. **As we ramp up our participation in central-level public health working groups, we have encountered more opportunities to share our learnings with other public health actors, and continue to advocate for these patient-centered aspects of our strategy to be integrated into national policy.**

We look forward to carrying these lessons with us as we scale, and are honored to have your support through the process. I'm personally grateful for your generosity over the course of 2023; thanks to you, the teams are strong and ready to expand our work to serve thousands more families across the region. Mankasitraka amin'ny fiaraha-miasa (we appreciate your partnership)!

In solidarity,

Luc Rakotonirina
Associate Medical Director

P.S. To hear about this initiative and more from Q4, join me and my colleagues on **October 31, 2023 at 12pm Eastern US / 7pm Madagascar for Voices From The Field**, a live virtual panel where we will present the quarter's highlights and challenges, followed by a Q&A moderated by Executive Director, Laura Cordier. [Click here to register!](#)

IFANADIANA DISTRICT

In partnership with Madagascar's Ministry of Public Health, we are transforming Ifanadiana District's public health system into an evidence-based model for universal health coverage that can be sustained, replicated, and scaled.

Pivot's current support to the health system at each level of care:



District referral hospital ¹



Primary care health centers ²

21 receiving Pivot support



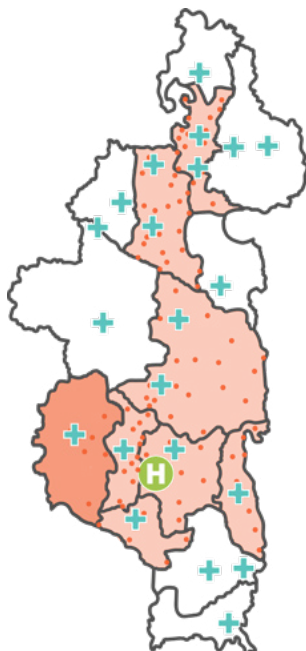
Enhanced community health

Including case-finding and household-level care



Community health sites

93 structures where CHWs receive patients



Total District Population: 203,426

- Hospital catchment: 203,426
- Health center catchment: 203,426
- Community health catchment: 99,146
– which includes –
- Proactive care catchment: 13,324

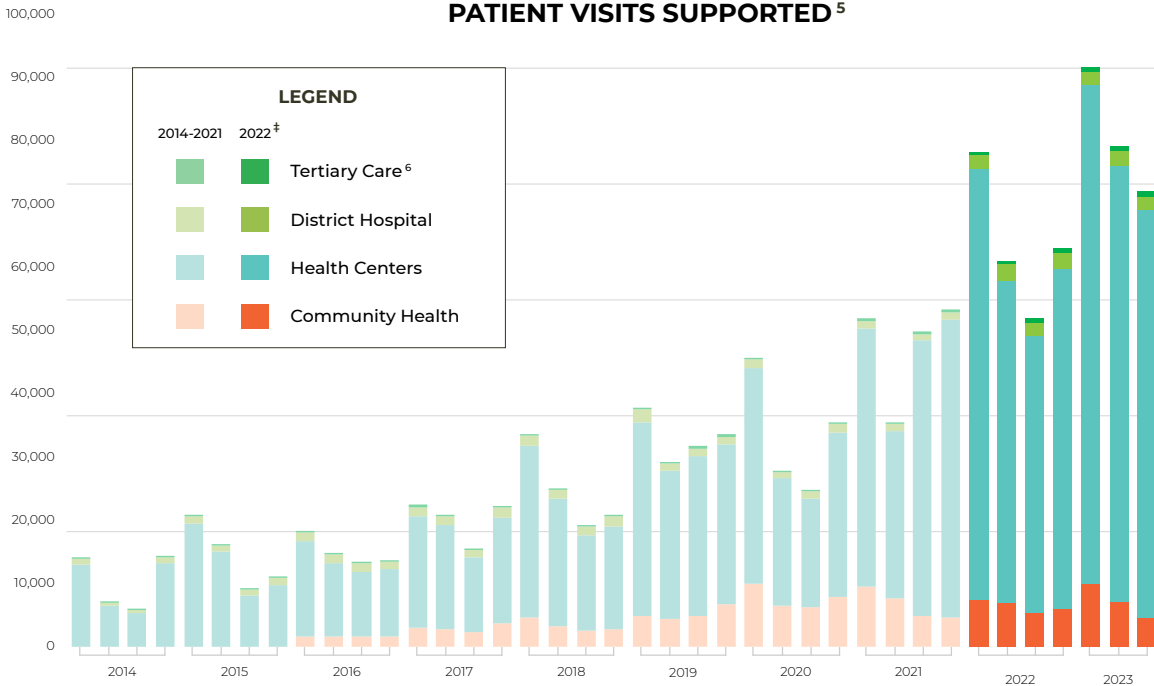
Baseline Statistics (2014):

- 1 in 7 under-5 mortality
- 1 in 14 maternal mortality
- 71% of the population lives >5km walk from nearest health facility
- 49% of the population lives >10km walk from nearest health facility

HIGHLIGHTS & CHALLENGES

- A delegation of **central-level MoPH officials led an evaluation of Pivot's work in Ifanadiana District** and an exploratory visit to expansion districts Mananjary and Nosy Varika to confirm baseline needs and priorities; the **visit culminated in the renewal of our partnership convention outlining the terms of our collaboration over the next 5 years**
- After over a year of delays, **completed mass wave of infrastructure work**; inaugurated 5 health centers as they reopened following major renovation and new construction
- **Hosted members of our Board of Directors in Madagascar** for an annual retreat and expedition to see new expansion districts
- Supported the **formal launch of the new national strategy for community health** (of which Pivot was a co-author) in the Vatovavy Region, a critical step in identifying key stakeholders and ensuring the multi-year commitment to advancing the Pro-CHW agenda for which Pivot is boldly advocating in Madagascar
- Following the ongoing success of rolling out the new national community health guidelines, responded to inquiries from **various local actors seeking guidance on best practices for implementing mobile technology at the community level**
- CHWs providing care in the Enhanced Community Health pilot were unable to achieve their typical high rate of adherence to protocol due to **central-level supply chain challenges limiting availability of essential medicines**
- Completed onboarding the fourth and fifth wave of health workers jointly-recruited with the MoPH to reinforce **Ifanadiana District's public workforce**
- **Completed repairs to another oxygen generator** at one of the major hospitals in Antananarivo as part of the BRING O2 project to improve oxygen access with Partners In Health and Unitaid
- Held **final round of trainings for health workers providing care to survivors of gender-based violence**
- Ongoing collaborations with CHWs and traditional birth attendants and contributed to **some of the best maternal health outcomes we've seen to date**, with both facility delivery and prenatal consultation rates exceeding their targets
- As part of the AfriCam initiative led by Madagascar's Agricultural Research Center for International Development, officially **launched the PREZODE (Preventing Zoonotic Disease Emergence) project to support the development of a OneHealth module** at the community level that will improve our ability to track data and events linked to human and environmental health
- Thanks to new partnership with Stavros Niarchos Foundation (SNF), **launched emergency response to continued malnutrition crisis**: signed a new MOU with Catholic Relief Services to ensure distribution of therapeutic foods for the 9 communes targeted by this emergency response; **expanded agreement with the Government to include management of moderate acute malnutrition cases**, for which trainings will launch next quarter
- In collaboration with local partners at Centre ValBio, hosted a **bioinformatics training workshop, including instruction around retrospective genomic surveillance** that can determine which SARS-CoV-2 variants have circulated in a given region
- After 5 years, **concluded day-to-day management of the Ifanadiana District hospital pharmacy in order to transition to a higher level of strategic and operational support across Vatovavy Region** while the MoPH resumes oversight at the district level
- In partnership with Direct Relief, **procured 3 solar generators for installation at the district hospital** to help sustain safe, uninterrupted care during intense weather conditions
- **Reviewed our organizational structure** at both field team and leadership levels in order to better determine our human resource needs as we head toward expansion roll-out

PATIENT VISITS SUPPORTED⁵



THIS QUARTER
(JUL-SEP'23)
78,703

ALL-TIME
(SINCE 2014)
1,408,683

⁵ As of January 2022, we are using a new method to calculate patient visits that better reflects all clinical encounters supported by financial, technical, or human resources from Pivot. Faded colors represent 2014-2021 totals calculated using the previous method.



Community Health



Health Centers



District Hospital

VISITS
(CHILDREN UNDER-5)

5,046
(Target: 6,761)

75% of target achieved

PER CAPITA UTILIZATION⁷

1.1 visits
per child under 5 (annualized)

Community Health Outcomes in Enhanced Care Commune vs. Non-Enhanced Communes

	Enhanced Care Pilot Commune	Non-Pilot Communes
Percent of Households Visited	91%	0%
Per Capita Utilization Rate	1.0	1.1
CHW Adherence to Protocol	89%	90%
CHW Supervision Rate	96%	89%

EXTERNAL CONSULTATIONS⁸
(ALL AGES)

66,446
(Target: 80,982)

82% of target achieved

PER CAPITA UTILIZATION

1.6 visits
per person (annualized)

VISITS
(ALL AGES)

2,274
(Target: 2,660)

86% of target achieved

HOSPITALIZATIONS	BED OCCUPANCY ⁹
731 (Target: 620)	47% (Target: 65%)

PROGRAM SPOTLIGHT: CELEBRATING LATEST WAVE OF INFRASTRUCTURE UPGRADES



Androrangavola Health Center



2023

Strong healthcare infrastructure is among the pillars of Pivot's strategy to improve the public health system in Madagascar. This quarter marked the completion of a year-long project to bring the remainder of the health facilities in Ifanadiana District up to, and beyond, government norms.

We make a radical investment in ensuring safe, dignified space where even the most remote communities can access high quality healthcare services. **This project offers evidence that geographic barriers can and must be overcome in order to deliver on the fundamental rights guaranteed by universal health coverage.**

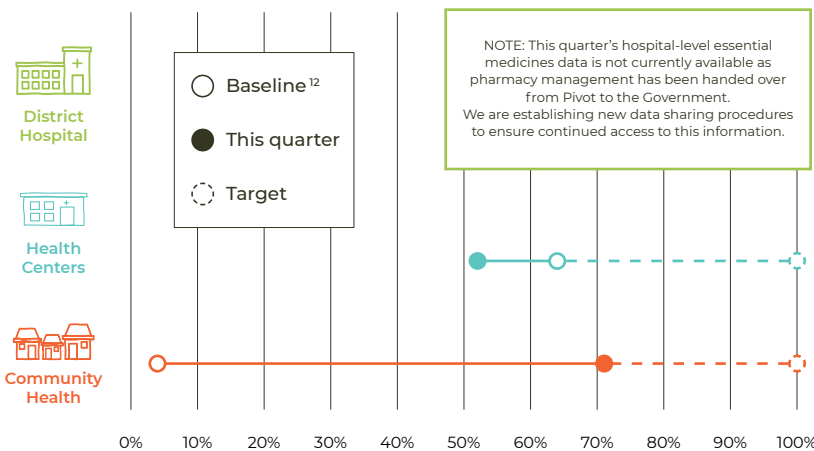


Analamarina Health Center



2023

AVAILABILITY OF ESSENTIAL MEDS¹⁰



CONTINUUM OF CARE



15% transferred by taxi ambulance

33% transferred by other mode of transport with transport fees covered by Pivot

52% by other mode of transport on foot, or by car, tractor, stretcher, etc.

STAFF

- **249** total Pivot employees
 - **99%** Madagascar-based
 - **98%** Malagasy
 - **5:2** female:male leadership

- **378** MoPH personnel supported
 - **81** district hospital staff
 - **102** health center staff
 - **195** community health workers



RESEARCH SPOTLIGHT: EVIDENCE OF COVID-19 IMPACT ON MORTALITY IN RURAL MADAGASCAR

Nearly four years since the start of the COVID-19 pandemic, there remains intense debate on the burden of disease and its impact among rural Sub-Saharan African communities due to lack of quality data. **Our newest publication in the International Journal of Epidemiology helps to fill that global knowledge gap by estimating the seroprevalence of COVID-19 infection in Ifanadiana District and describing increased mortality.**

In 2021, at the height of the COVID-19 pandemic, Pivot incorporated the collection of serological samples into the Ifanadiana Health Outcomes and Prosperity longitudinal Evaluation (IHOPE) cohort. The IHOPE study, which launched in 2014, established the baseline health and well-being of the Ifanadiana District population before the start of Pivot's activities. The study, in which the same households are visited every two years, continues to serve as the tool by which we measure the impact of our work on mortality and intervention coverage.

Pivot Science Associate Director Andres Garchitorena, the article's lead author, and team estimate that 18% of people had been infected with COVID-19 by April-June 2021. The first wave of cases was clustered along the paved road that bisects the district and infection was associated with older age and increased wealth. Adult mortality increased in 2020, especially among older men for whom it nearly doubled to 40 deaths per 1000. **This study is important in terms of the quantity of data – a representative sample of over 8000 people of all ages – and its quality, which includes 8 molecular biomarkers in the analysis of seropositivity.**

This study, conducted in partnership with Madagascar's National Institute of Statistics, the Institute Pasteur of Madagascar, the Research Institute for Development, and Harvard Medical School **provides evidence that COVID-19 infection affected rural communities and deepens our understanding of the factors associated with early infection.** Our study provides further evidence that, counter to much speculation, COVID-19 affects communities in the WHO African region, in ways that are similar to effects found everywhere else for which there is reliable data.

Access the full article:

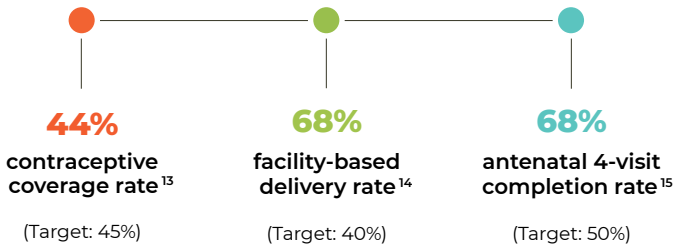
[**Morbidity and mortality burden of COVID-19 in rural Madagascar: Results from a longitudinal cohort and nested seroprevalence study**](#)

MATERNAL & REPRODUCTIVE HEALTH



SINCE 2014, PIVOT HAS SUPPORTED **17,272** FACILITY-BASED DELIVERIES

This quarter, we achieved:



And maternal survival rates¹² were:



VALUES IN ACTION

This year's Madagascar-based Board of Directors retreat welcomed board members and their families to not only immerse themselves in Pivot's work, but embrace our value of sustainability by participating in a reforestation project to give back to the community and environment where we operate.

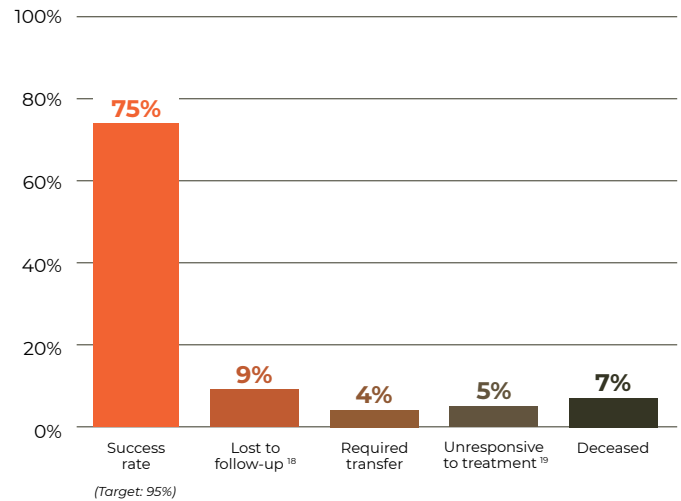
TUBERCULOSIS

This quarter, **144 patients** were enrolled for TB treatment.



Cohort Outcomes

for **131 patients** completing 1 year of treatment:



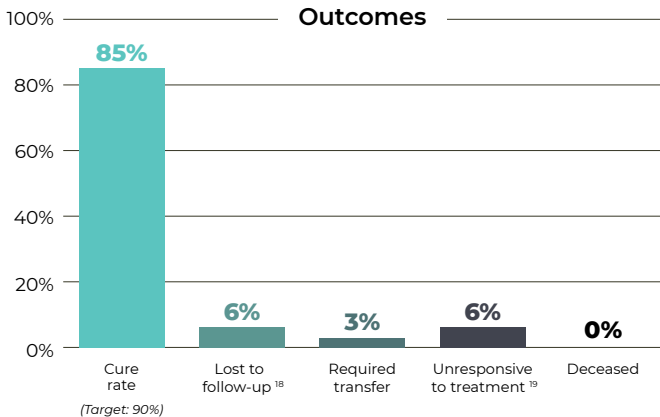
MALNUTRITION



HEALTH CENTERS

- 276 children** began treatment for acute malnutrition¹⁶
- 208 children** were discharged from treatment

Outcomes



DISTRICT HOSPITAL

- 22 children** were admitted for treatment of severe acute malnutrition with complications¹⁷
- 24** were successfully discharged from intensive treatment (either cured or referred to a health center for continued care)

SOCIAL SUPPORT

- 718** social kits (food and household essentials) distributed to vulnerable patients at the district hospital
- 95** psycho-social sessions provided for hospital patients
- 5,656** reimbursements provided for transport to/from care
- 39,561** meals served to hospitalized patients and their *accompagnateurs*²⁰

PATIENT SPOTLIGHT: LALISY, VANICIA & VELIZIA

Lalisy, age 28, lives in Marotoko, the southernmost commune in Ifanadiana District, located about 70km from the district's single hospital. When she got pregnant for the second time, upon learning she was expecting twins, Lalisy's pregnancy was immediately deemed high-risk, given the factors that make any pregnancy more life-threatening for women living in rural Madagascar than in settings with stronger health systems. This meant that, from early on in her pregnancy, there was a plan: from the CHW who accompanied her to care throughout her pregnancy, to the team of clinicians at Marotoko and Androrangavola Health Centers who provided her antenatal care, and the emergency obstetric team at Ifanadiana District Hospital – all supported her to ensure she could ultimately deliver her twins safely. But in early September, Lalisy was struggling with debilitating abdominal pain, vomiting, and weakness. When she fell into a seizure, her family and community gathered quickly to set her out to seek care.

Twelve men, serving as rotating porters, departed on foot at 3am on September 3 carrying Lalisy by stretcher, along with nine of her family members, who brought food to sustain the whole traveling party across the challenging terrain. Altogether, the group walked for two days, stopping at Marotoko Health Center along the way, where the team was able to stabilize her condition, manage continued symptoms, and make an emergency referral her onward to the District Hospital.

By 5pm on September 4, the traveling party reached the road where a taxi brousse arrived to bring all 22 people to the District Hospital. Lalisy was immediately taken into care and received medicines to control both her seizures and abdominal pain. The hospital provided accommodations for Lalisy and her *accompagneurs* until she gave birth to two healthy girls, Vanicia and Velizia, on September 26.

Lalisy's case underscores the importance of an integrated health system. Increased efforts for CHWs to identify and manage patients with high-risk pregnancies has contributed to the rising facility-based delivery rates we've seen across the district – that same effort linked Lalisy to the continuum of care needed to ensure that, regardless of distance, she could safely deliver her baby girls.



MORE FROM THIS QUARTER:



[Powering Critical Care in Rural Madagascar](#)

"With access to resilient power sources, clinicians will be more free to focus on their jobs – instead of having to plan for when lights go out." | Thanks to Direct Relief's partnership, Pivot obtained three solar generators to reinforce the standard of care at Ifanadiana District Hospital.



[Centre ValBio & Pivot Host Bioinformatics Workshop](#)

"Through lectures and hands-on lab work in CVB's microbiology laboratory, Pivot designed the training with the aim of increasing accessibility to genomics research in Madagascar and building the capacity of Malagasy researchers and professionals across health and environmental fields to apply genomics to priority issues in their respective sectors."



[Responding to a "Triple Crisis" in Southeastern Africa after Cyclone Freddy](#)

"In response [to Cyclone Freddy], the Stavros Niarchos Foundation made grants to three organizations focused not only on responding to the immediate needs generated by the storm, but to the longer-term crises it exacerbated—both of which are linked to the global climate change." | We are excited to announce our new partnership with SNF, focused on addressing the growing malnutrition crisis resulting from the increasingly intense cyclone seasons in Vatovavy Region.

Join us for *Voices From The Field* on **October 31 at 12pm ET** to hear more about Q4's highlights directly from the team!

[CLICK HERE TO REGISTER](#)

DEFINITIONS

1. **District hospital:** a secondary health facility offering inpatient care and specialized clinical services (e.g., dentistry; emergency obstetric care, including cesarean sections; laboratory and radiology; infectious disease treatment; and inpatient malnutrition for children) for the full district population
2. **Health center:** a health facility offering primary care services for the population of a geographically-defined commune, ranging from 4,500 to 20,800 people
3. **Community health:** disease prevention and health promotion conducted by community health workers (CHWs) outside of health facilities and within a community
4. **Community health worker (CHW):** a community member trained to provide care for common illnesses in their communities and to refer patients in need of higher levels of care to health centers; patients served are primarily pregnant women and children under five
5. **Supported patient visit:** a patient visit to community health worker, health center, or hospital for which costs of care are reimbursed by Pivot
6. **Tertiary care:** specialized medical care provided at regional or national health facilities outside of the district
7. **Per capita utilization:** an annualized rate of utilization calculated using the total number of quarterly community or health center visits multiplied by four and divided by the total catchment area population; only fully supported health centers are included in the calculation
8. **External consultation:** new and follow-up outpatient visits with a clinician at a fully-supported health center or hospital
9. **Bed occupancy:** percentage of total hospital beds available that are occupied by admitted patients
10. **Essential medicines:** a subset of total medicines supplied (7 at the community level, 15 at health centers, and 31 at the district hospital) that, informed by international standards, are necessary for providing basic health care
11. **Baseline [availability of medicines]:** the assessment of the availability of essential medicines before Pivot intervention, which was 2018 at the district hospital, 2014 at health centers, and 2015 at the community level
12. **Maternal survival rate:** the percentage of facility births and miscarriages in the last quarter after which the mother was discharged alive
13. **Contraceptive coverage rate:** the percentage of women between the ages of 15-49 in Pivot's catchment area who use any method of birth control as documented at the health center
14. **Facility-based delivery rate:** the percentage of the estimated number of infants expected to be born in the review period who were born at a fully-supported health center
15. **Antenatal 4-visit completion rate:** the percentage of women who gave birth at a fully-supported health center who attended four antenatal care visits prior to delivery
16. **Acute malnutrition:** weight for height that falls between -2 and -3 standard deviations below the mean weight for height according to international growth standards
17. **Severe malnutrition:** weight for height below -3 standard deviations below the mean weight for height according to international growth standards
18. **Lost to follow-up:** a patient whose treatment has been interrupted and who has not completed a program of care
19. **Unresponsive to treatment:** a patient whose health outcomes do not improve with treatment for specified disease
20. **Accompagnateur:** a family member, friend, or community member who accompanies a patient to seek care; often to cook, clothe, or otherwise provide necessary day-to-day support for the patient