Burden of Disease Framework: Contribution to needs assessment for resource planning in PIH country-sites

Partners In Health Cross-Site Mental Health Clinical Meeting, September 27, 2016

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What's Included:

- Assessing Disease Burden
- Global Burden of Mental Illness
- Burden of Disease per Country Site
- References

Assessing Disease Burden

Global Burden of Mental Illness

Burden of Disease per Country Site

References

Assessing Disease Burden

Definition of ***burden*** (American Heritage Dictionary, 5th edition)

- **Something that is carried**
- **Something emotionally difficult to bear**, **source** of great **worry** or stress
- The **amount of disease-causing entity** present in an organism

How do we assess need from a public health perspective?

- ***Burdens*** of illness:
  - Societal burden, economic burden, family burden, decreased quality of life, decreased or perturbed social interactions
- ***Disease burden*** is restricted to "within the skin" functioning:
  - Impact on bodily functions, senses, cognition, and ambulation

Assessing Disease Burden

What should be the essential components? What do diseases do?

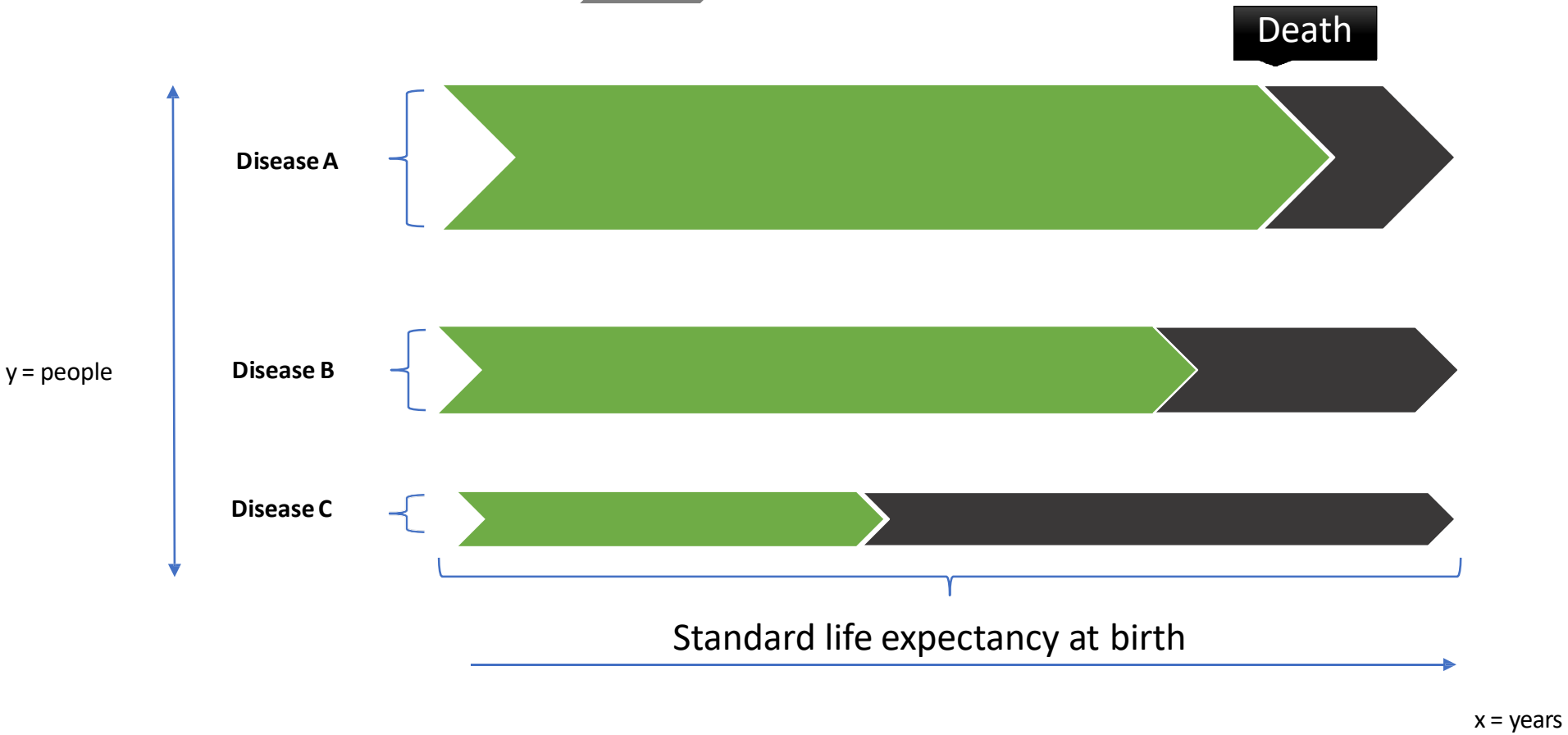
- Diseases kill:
  - cause-specific mortality rate: mortality rate from a specific cause for a population during a specified time period.
- Diseases maim:
  - Prevalence: point vs. period; the number of cases in a given population in a given point or time period

Problems:

- Are all deaths equal, from a societal perspective? How can we *weight* mortality?
- How can we capture non-fatal outcomes? Prevalence by itself doesn't capture morbidity: common cold vs. schizophrenia. How can we *weight* morbidity?

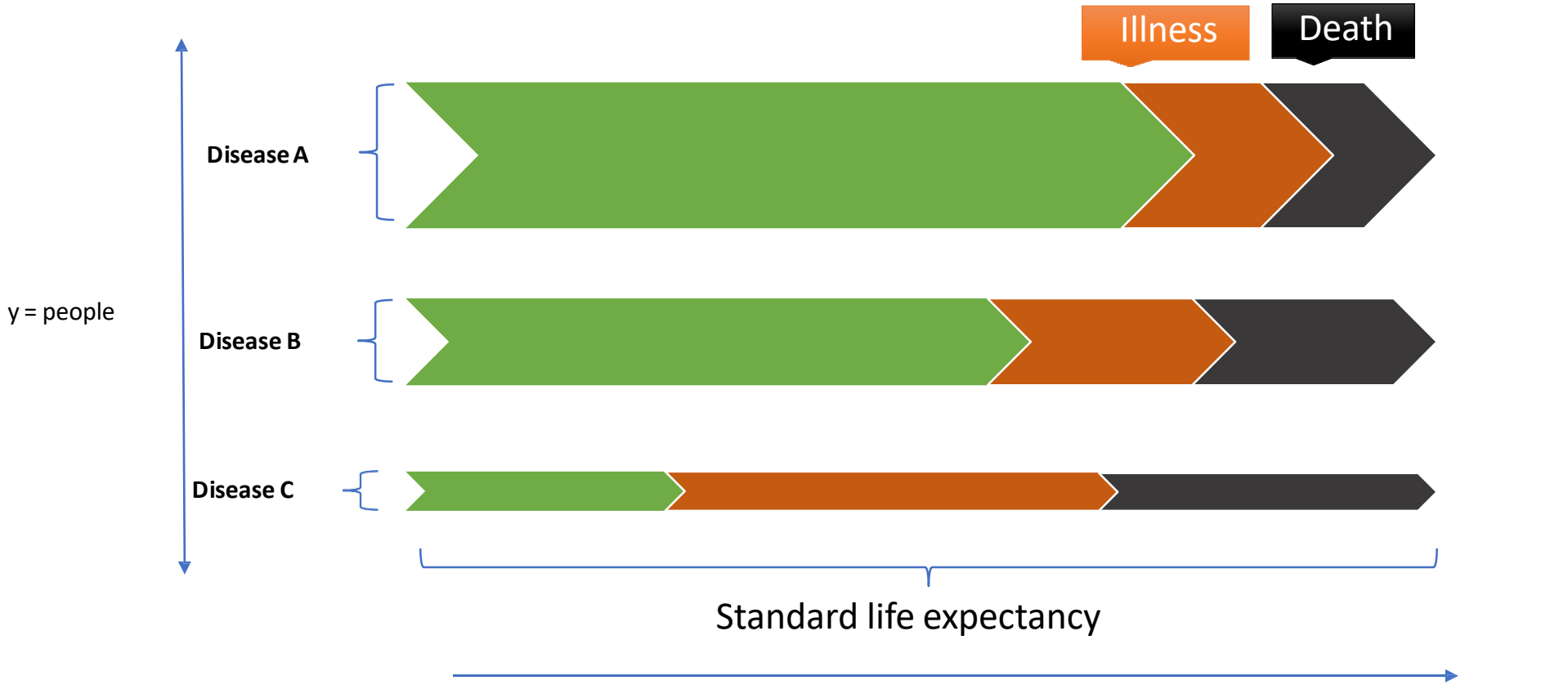
Assessing Disease Burden

- Years of life lost **YLLs** = deaths * standard life expectancy at time of death



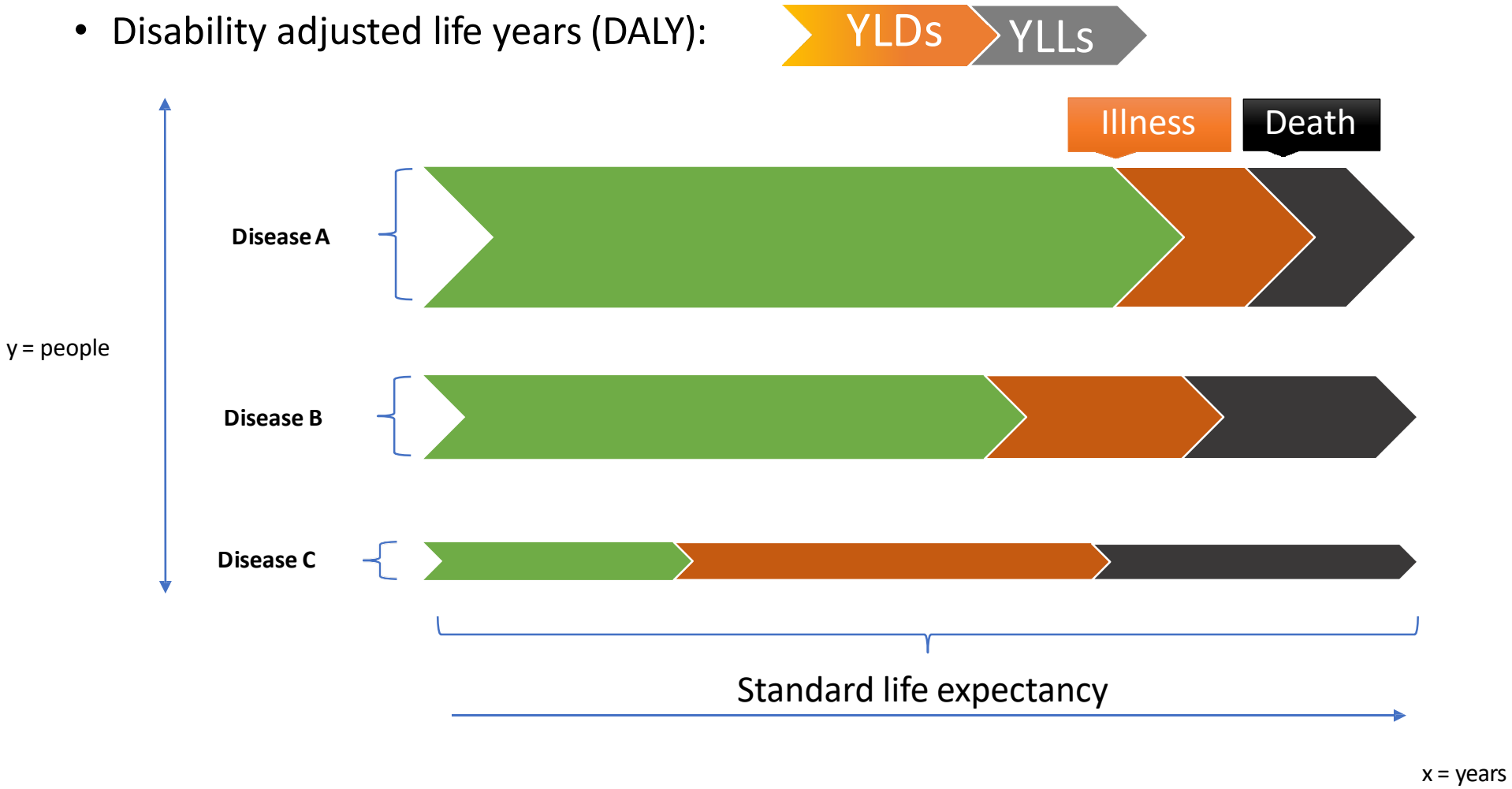
Assessing Disease Burden

- Years lived with disability YLD = prevalence * disability weight



Assessing Disease Burden

- Disability adjusted life years (DALY):



Assessing Disease Burden

Global Burden of Mental Illness

Burden of Disease per Country Site

References

The Global Burden of Mental Illness

Rank	GBD 10	DALYs(%)
1	CVD	13·5
2	Common infections	10·2
3	Cancer	8·1
4	Neo-natal	7·7
5	Mental illness	7·1

- DALYs in general: YLDs YLLs
- For mental illness: YLDs YLLs

IHME, 2016; Voss 2015; Murray 2015

The Global Burden of Mental Illness

Does not include excess mortality:

- 0.67% of global YLLs are attributed to mental illness: no suicides, CVD deaths secondary to MI, etc.
- Estimated in 14% of global deaths -8 million per year- by Walker et al., and in 8% of global YLLs by Charlson et al.

Does not include neuropsychiatric syndromes:

- Fibromyalgia, chronic pain syndrome, dementia, epilepsy, migraine, and tension type headache

Does not include personality disorders:

- Point prevalence: 4-15% in general population

Corrected estimation:

Rank	Corrected estimation	DALYs(%)
1	CVD	13·50
2	Mental illness	13·04
3	Common infections	10·2
4	Cancer	8·1
5	Neo-natal	7·7

Vigo et al., 2016

The Global Burden of Mental Illness

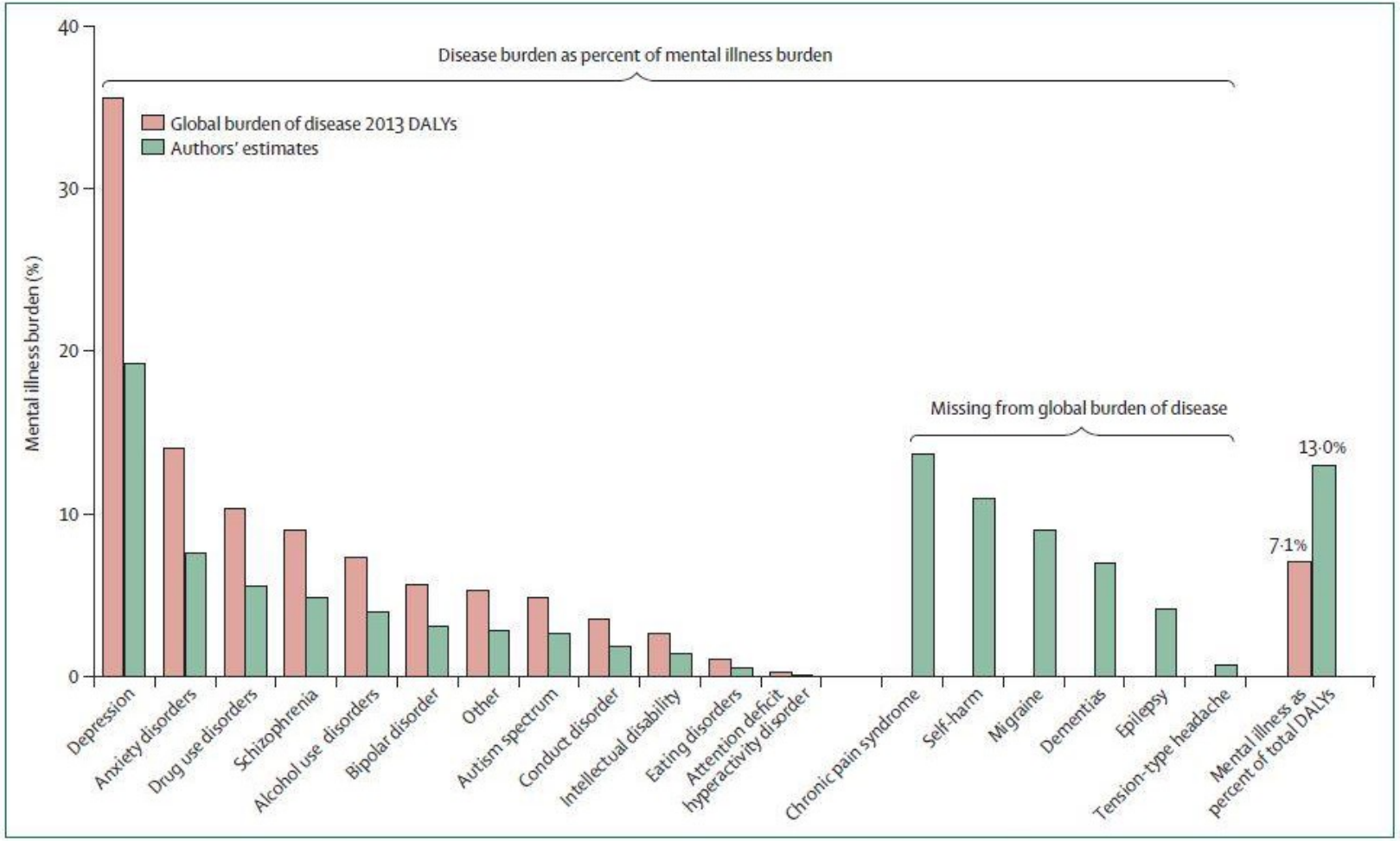


Figure 2: **Comparison of Global Burden of Disease 2013 disability-adjusted life-years (DALYs) with the authors' estimates**
Analysis based on data from GBD 2013 DALYs and HALE Collaborators.[19]

Vigo et al, 2016

The Global Burden of Mental Illness

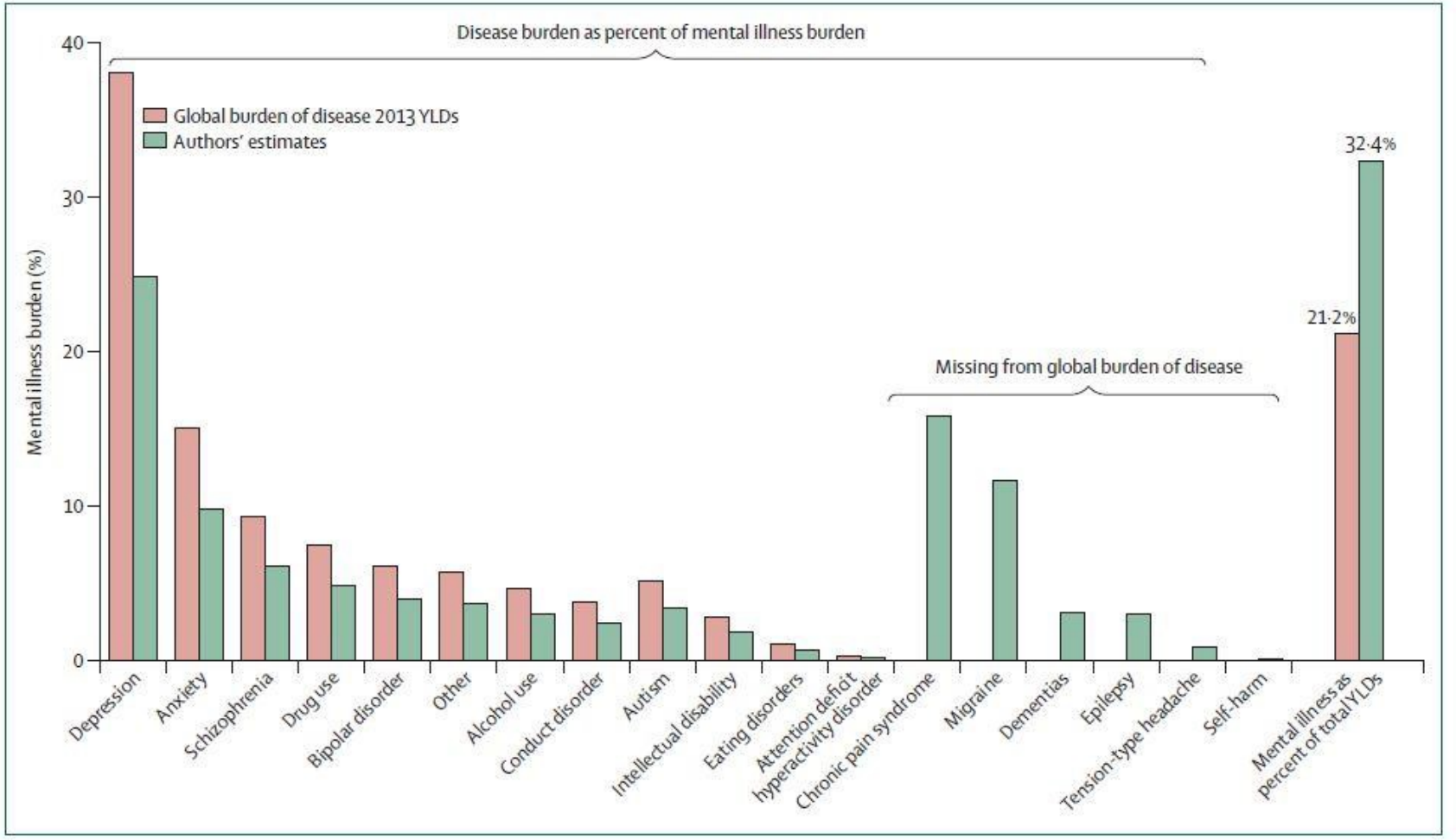


Figure 1: **Comparison of Global Burden of Disease 2013 years lived with disability (YLDs) with the authors' estimates**
Analysis based on data from Global Burden of Disease Study 2013 Collaborators.[11]

Vigo et al, 2016

Assessing Disease Burden

Global Burden of Mental Illness

Burden of Disease per Country Site

References

Burden of Disease per Country Site

Method:

- Extract all available country data from http://ghdx.healthdata.org/ and http://www.healthdata.org/gbd-data-tool
- Apply correction to estimation of mental illness burden
- Present re-estimation per-country of:
  - Level 1: NCDs vs. Communicable, maternal, child and nutritional vs. Injuries
  - Level 2 groups of NCDs vs. Communicable, maternal, child and nutritional vs. Injuries
  - Level 3: mental illness, suicide, neuropsychiatric, chronic pain syndrome

Goal:

- High level assessment of health needs
- Inform mental health strategy, services, platforms, and staffing

Limitations:

- Necessary but not sufficient: must include other variables
  - Non-disease burden, ethical considerations, local priorities, and resources

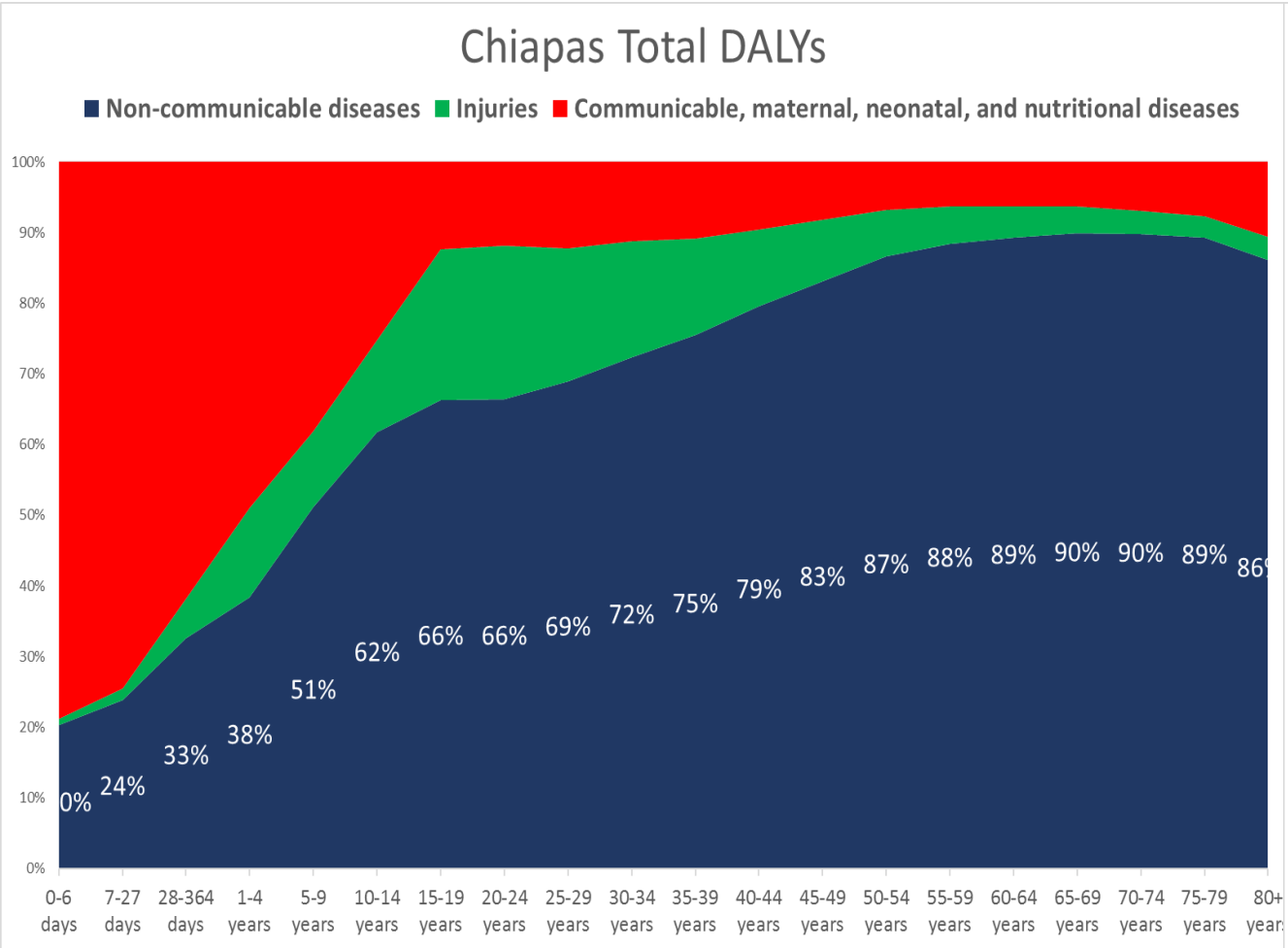
Compañeros En Salud, Chiapas, Mexico

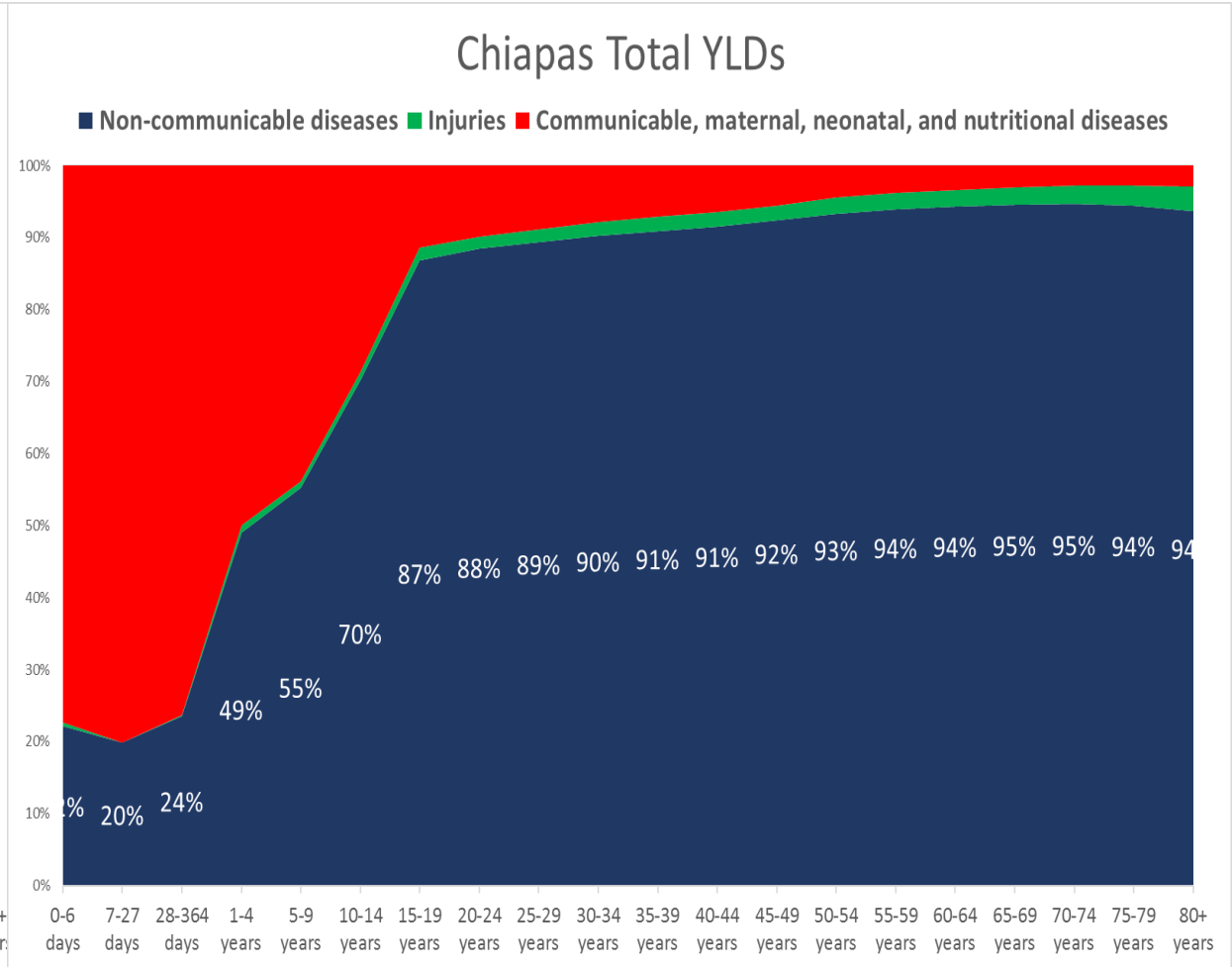
Mental Health Program Overview (2021)

Compañeros en Salud (CES) is located in Chiapas, the poorest state on the southern region of Mexico, with over 50% of the population living in rural communities. CES's mental health program looks to strengthen the capacity of health facilities to provide care for people suffering from mental health and neuropsychiatric conditions (MNS), train community care workers (Cuidadoras) to screen and treat depression and implement psychoeducation programs to increase mental health awareness in 10 communities [19]. Integrating mental health into primary health care, CES promotes patient-centered care through a task-sharing and a stepped-care model supervised by a physician and psychologist. Patients are identified through active case finding and depression screening using The Patient Health Questionnaire (PHQ-9), a tool that was locally validated in 2016 by the team in a rural, Spanish speaking community for the first time. This tool is used by psychologists, general physicians, and community health workers for routine screening/care for depression in Chiapas. CES has developed a short trauma-informed care manual for nurses (Pasantes) to use in the maternal waiting home (Casa Materna). The manual trains pasantes on the identification and treatment of women who are experiencing or have experienced trauma. The mental health team has also piloted interventions to promote staff well-being and facilitated external referrals for more acute mental health conditions. The team is enhancing interventions for trauma, domestic, gender, and interpersonal violence, as well as managing the stability of psychotropic medication amidst COVID-19 supply chain stock-outs, and maintaining adolescent workshops around depression and anxiety in the. Additionally, they are expanding their use of digital technologies through mobile and telemedicine services.

Burden of Disease in Chiapas:

NCDs vs Injuries vs Communicable, maternal, child, nutritional (data from 2016)





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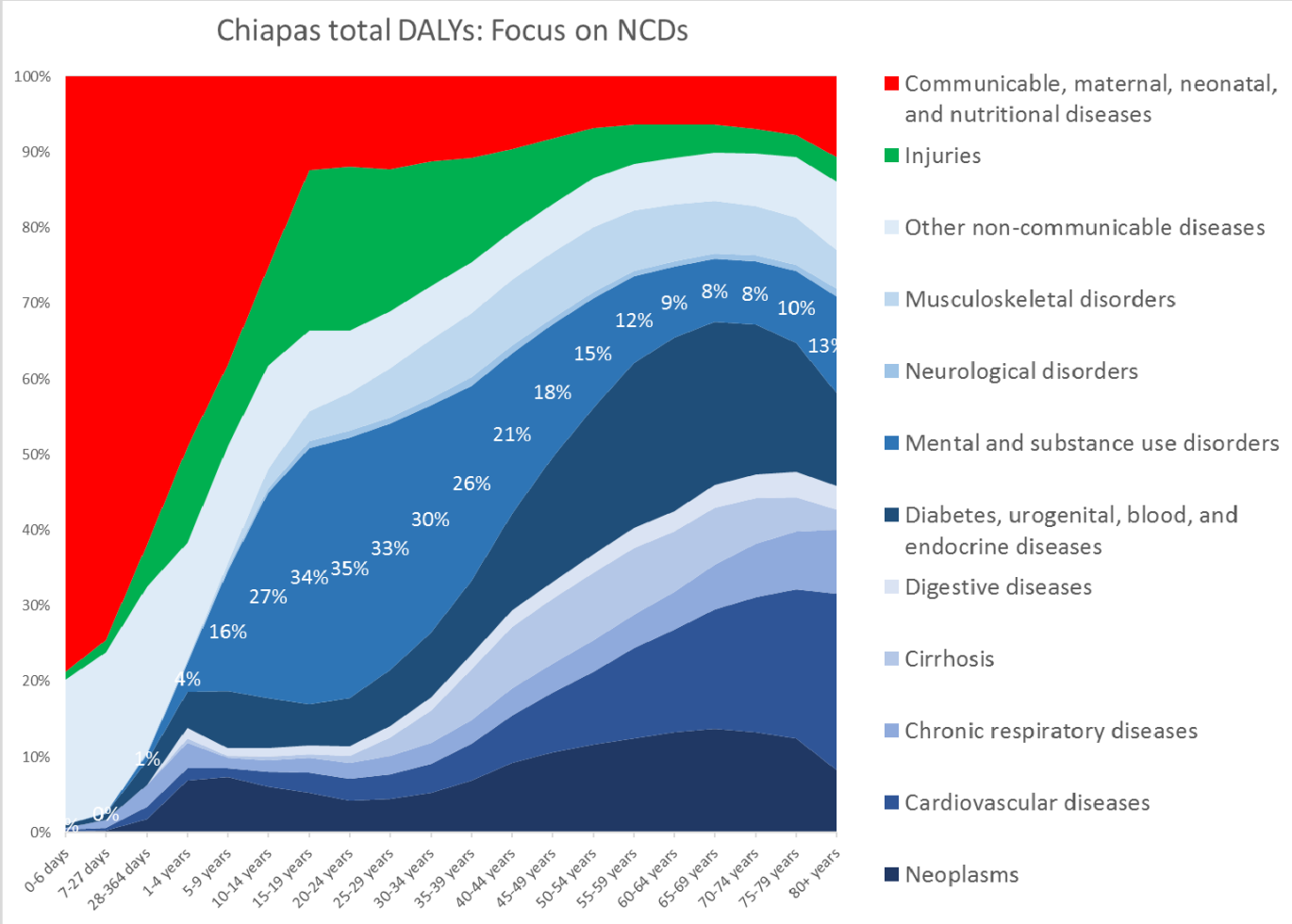
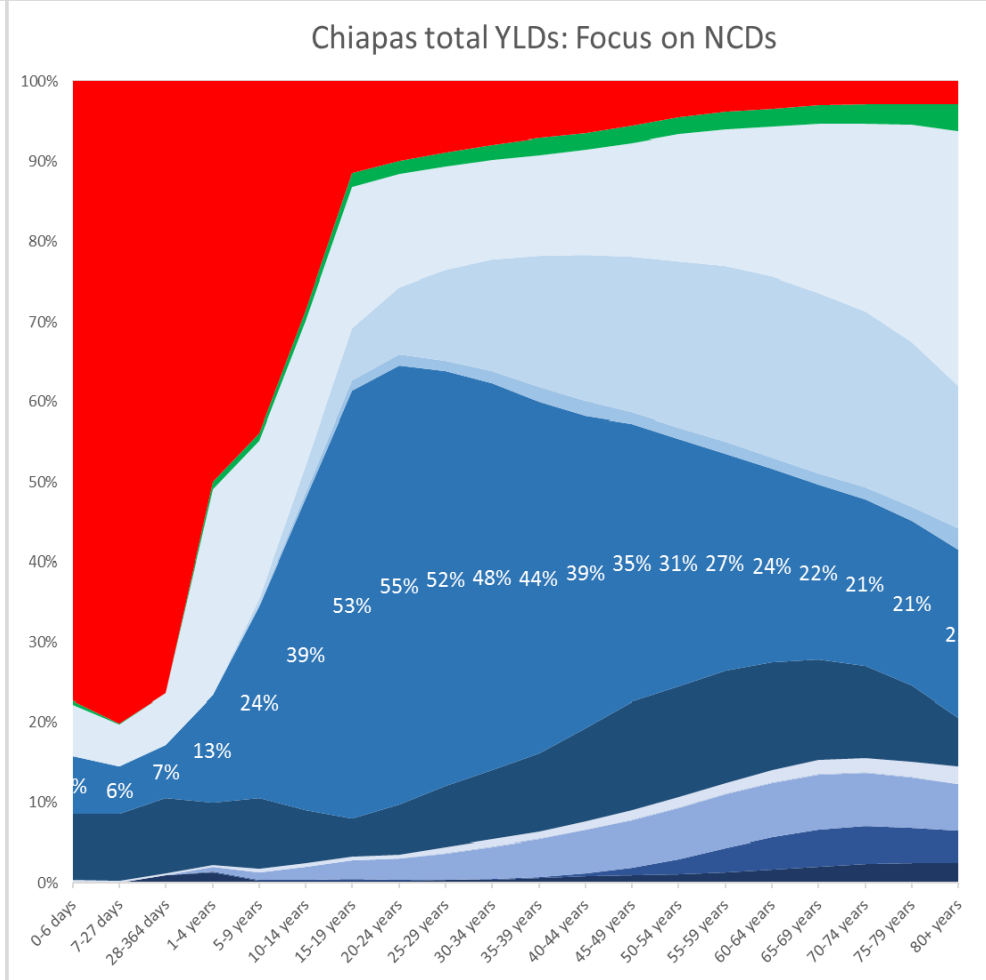
Burden of Disease in Chiapas:

NCD groups vs Injuries vs Communicable, maternal, child, nutritional (data from 2016)





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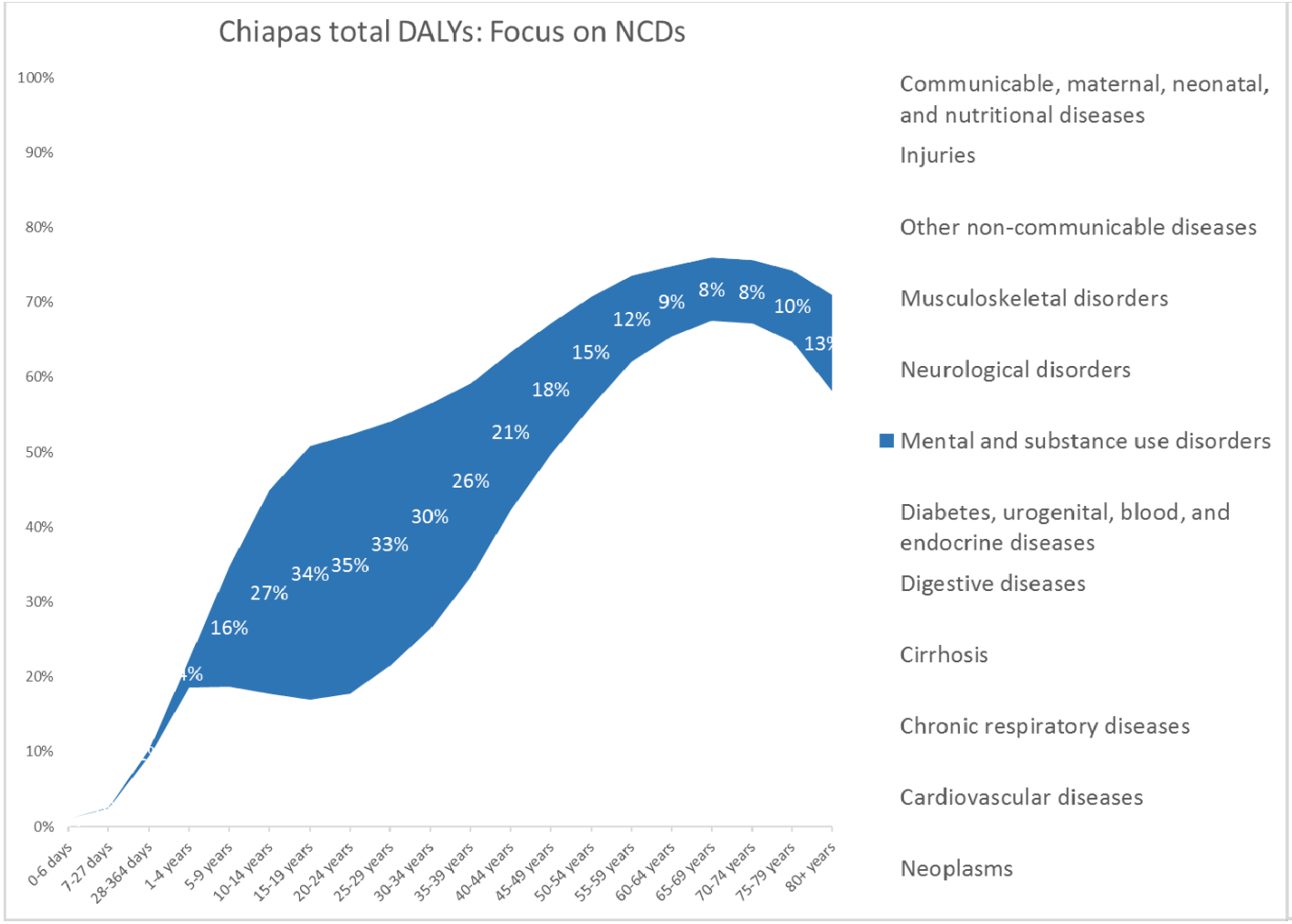
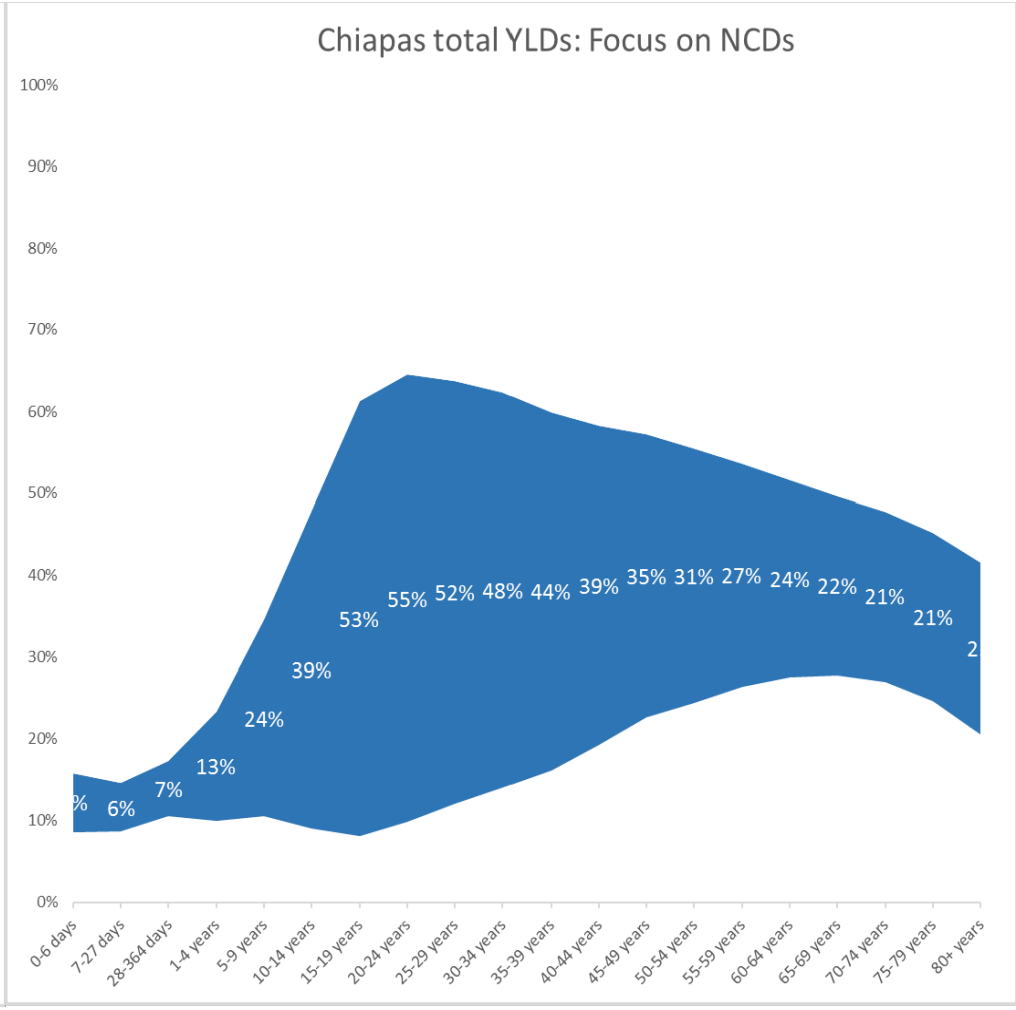
Burden of Disease in Chiapas:

Common mental illness, severe mental illness, substance abuse and eating disorders, neuropsychiatric illness, childhood onset disorders (data from 2016)





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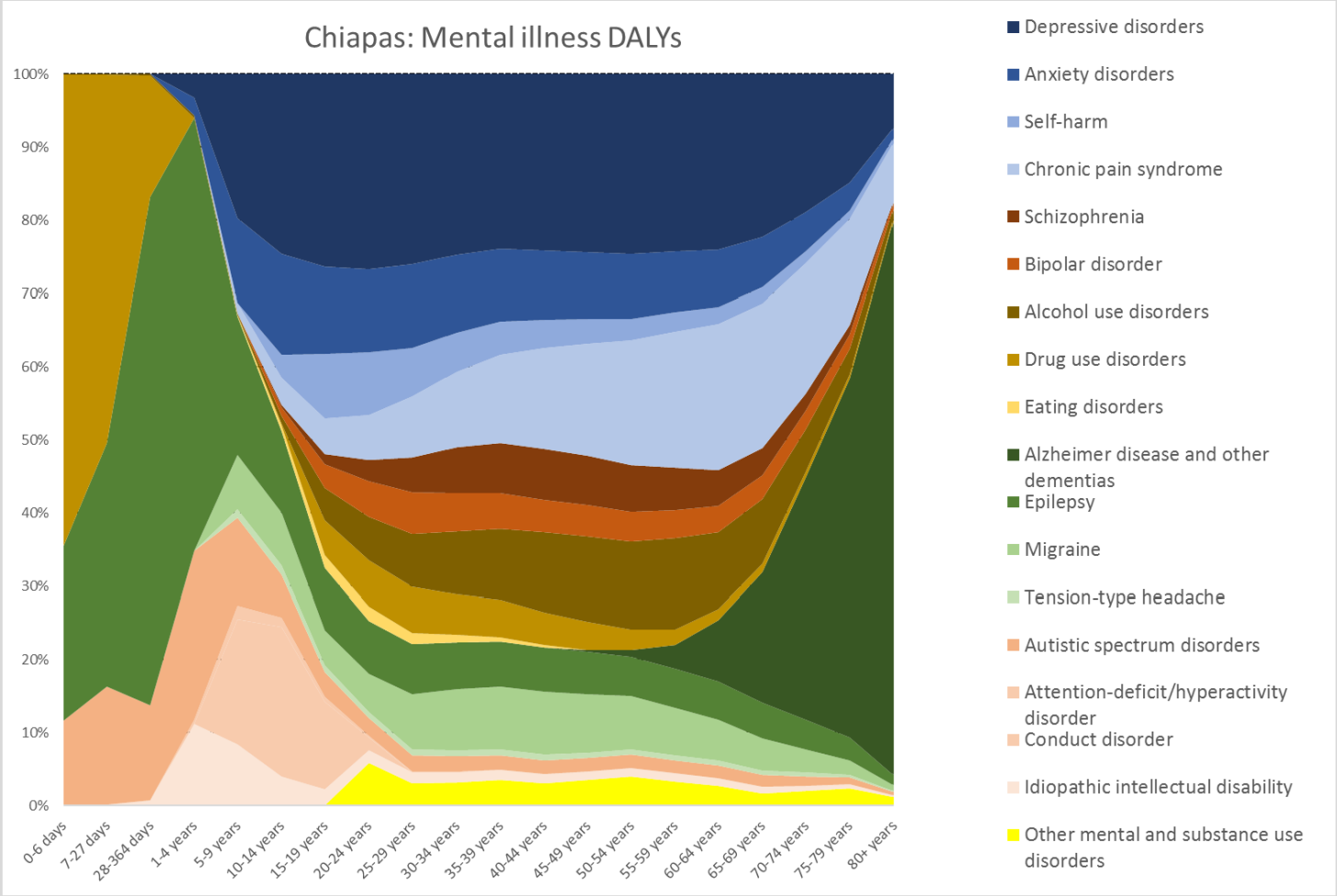

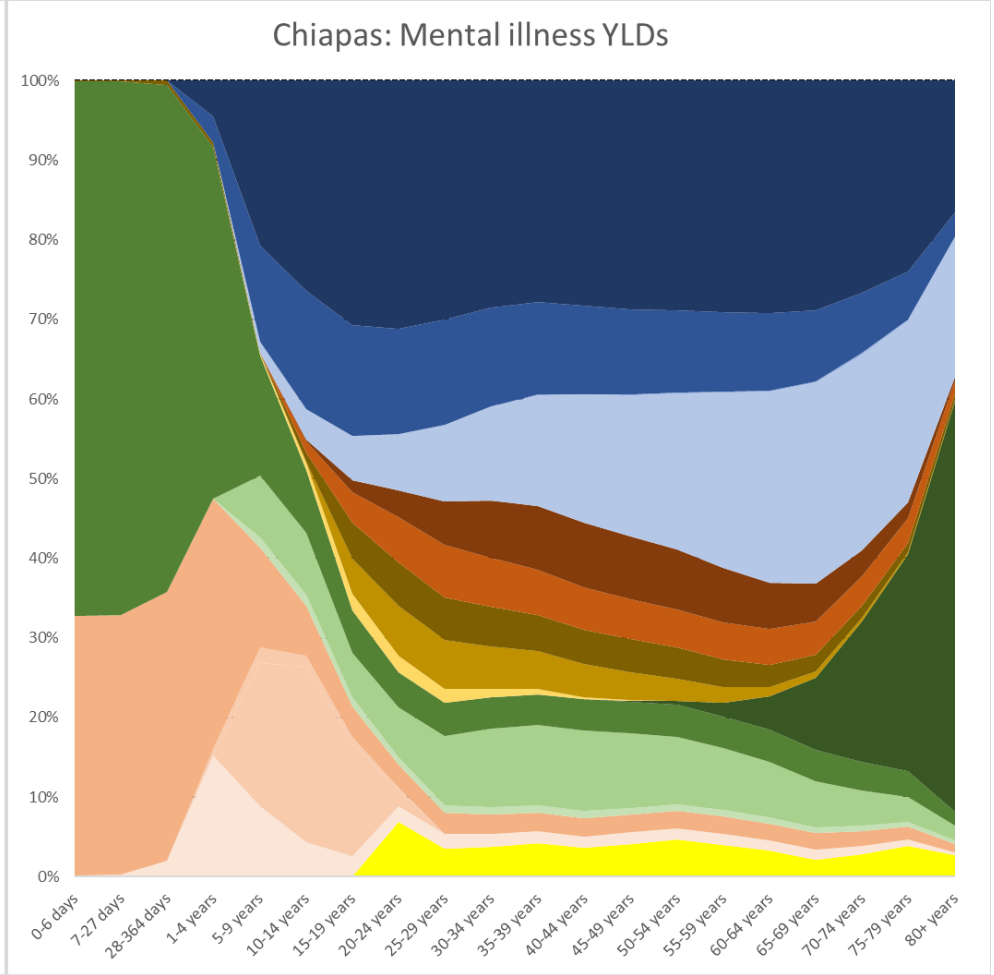

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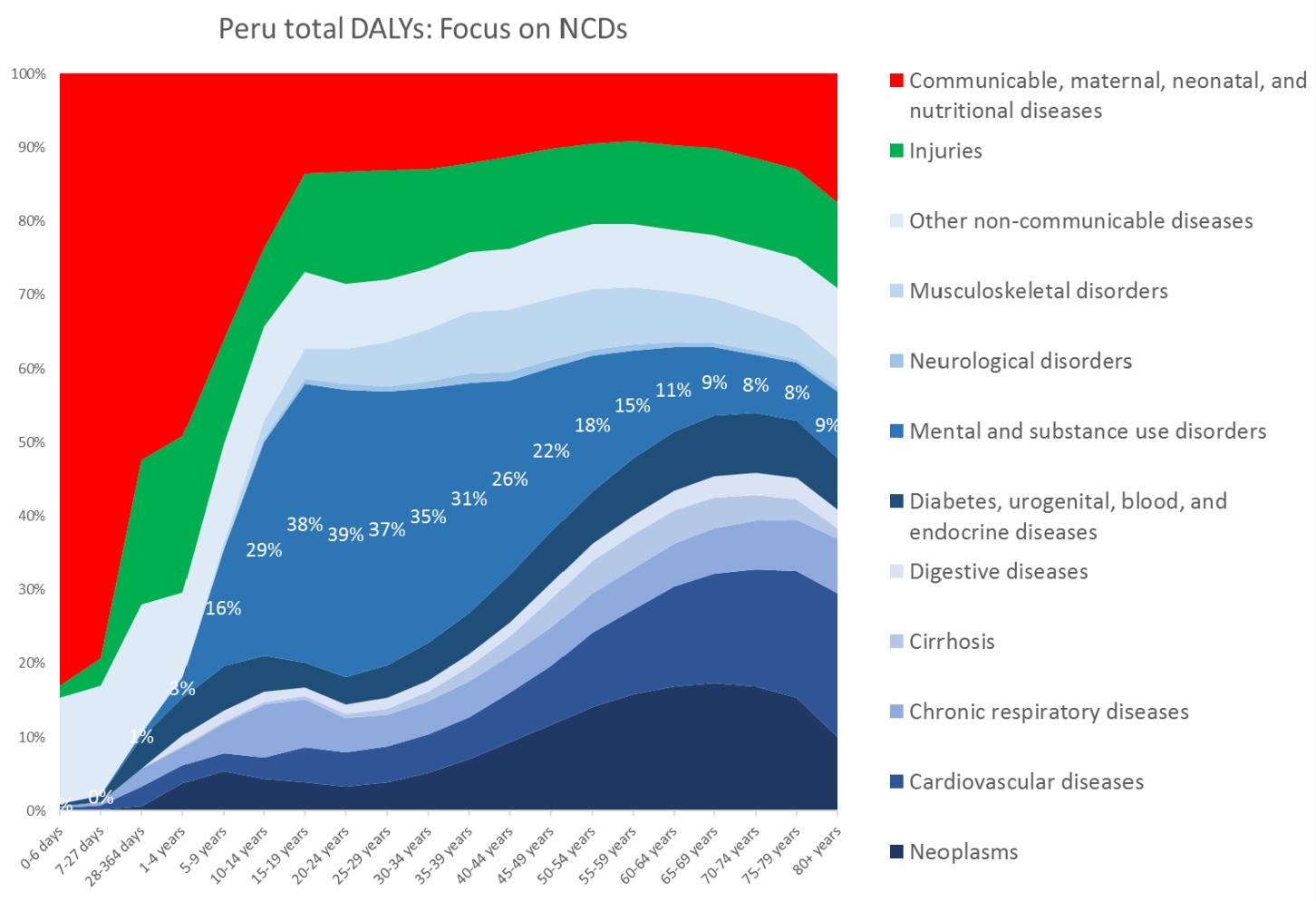
Socios En Salud, Lima Norte, Peru

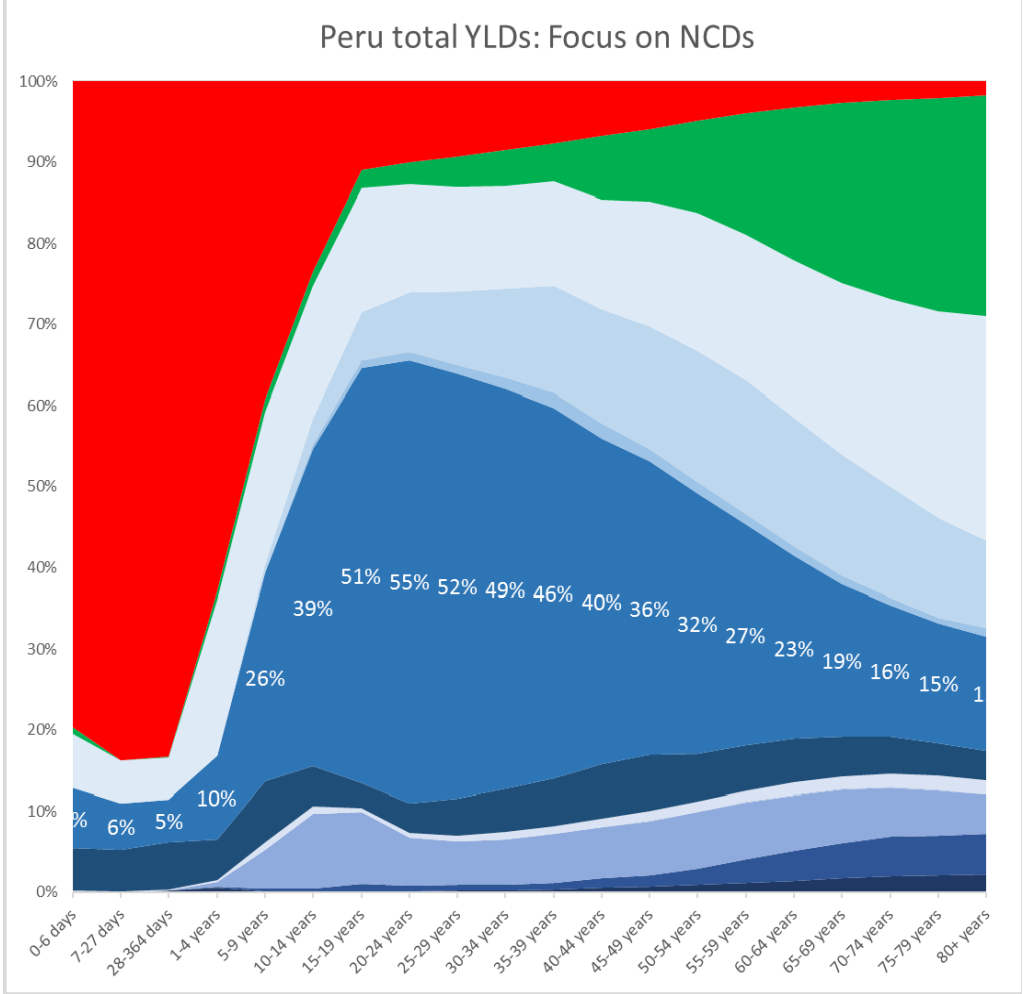
Mental Health Program Overview (2021)

Socios En Salud (SES) integrates mental health services across clinical services including Tuberculosis (TB), maternal and child health, HIV, and chronic care programs. Their success in developing effective strategies to reach and support vulnerable communities has made them a strong partner of Peru's Ministry of Health (MoH). SES's Mental Health Program has implemented low intensity mental health interventions with the collaboration of Community Health Workers (CHWs), psychologists and health facilities of the Ministry of Health (MINSA). SES's work has grown drastically in the last 5 years. Since 2016, the team has implemented Thinking Healthy Strategy developed by the World Health Organization (WHO) for pregnant women from the Maternal and Child Health project (Eappen et al., 2018), culturally modified and adapted materials from Problem Management Plus (PM+), and integrated the intervention into preexisting programs for caregivers of young children. They have developed other projects, including "Ensuring quality in psychological support by non-specialized mental health providers" (EQUIP), which integrates a Basic Helping Skills package for non-specialized health personnel to strengthen their care in the area of mental health. In 2021, SES also launched Partners In Health's first ever cross-site grant to be held outside of the PIH Boston office, in which they will focus on expanding e-learning collaborative opportunities, as well as piloting and expanding PIH's Mental Health Learning Collaborative in support of PIH's mental health care delivery value chain at 9 PIH sites.

Burden of Disease in Peru:

NCD groups vs Injuries vs Communicable, maternal, child, nutritional (data from 2016)





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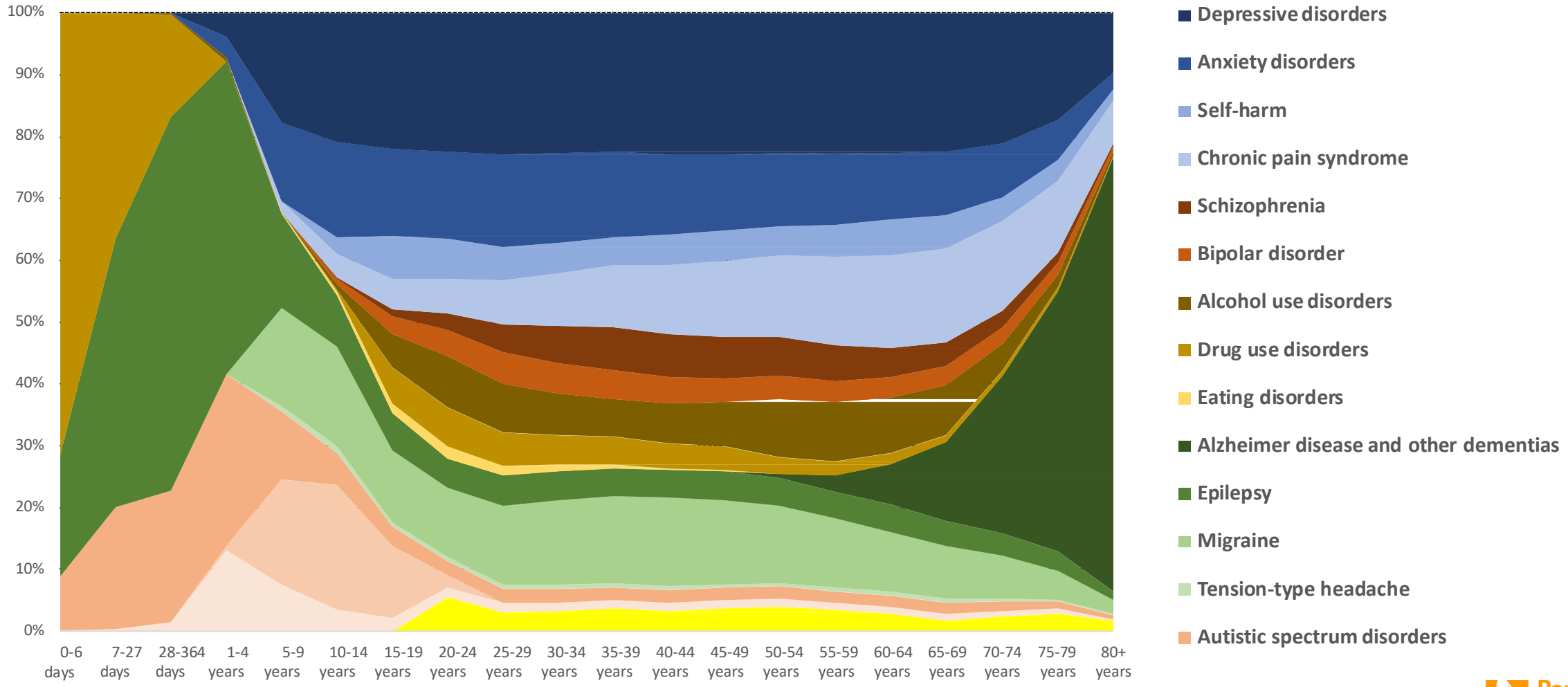
Burden of Disease in Peru: DALYS

Common mental illness, severe mental illness, substance abuse and eating disorders, neuropsychiatric illness, childhood onset disorders (data from 2016)



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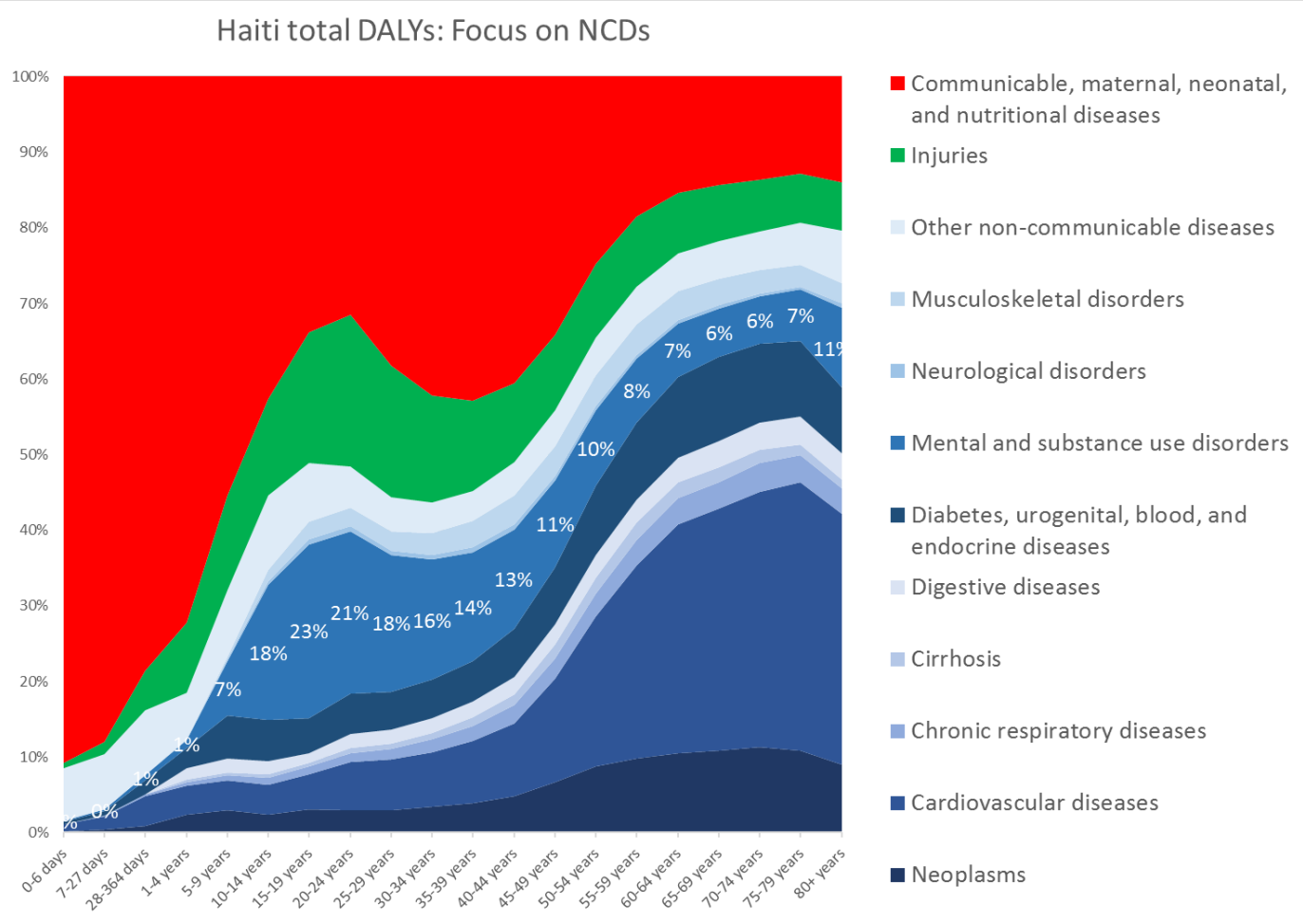
Zanmi Lasante, Haiti

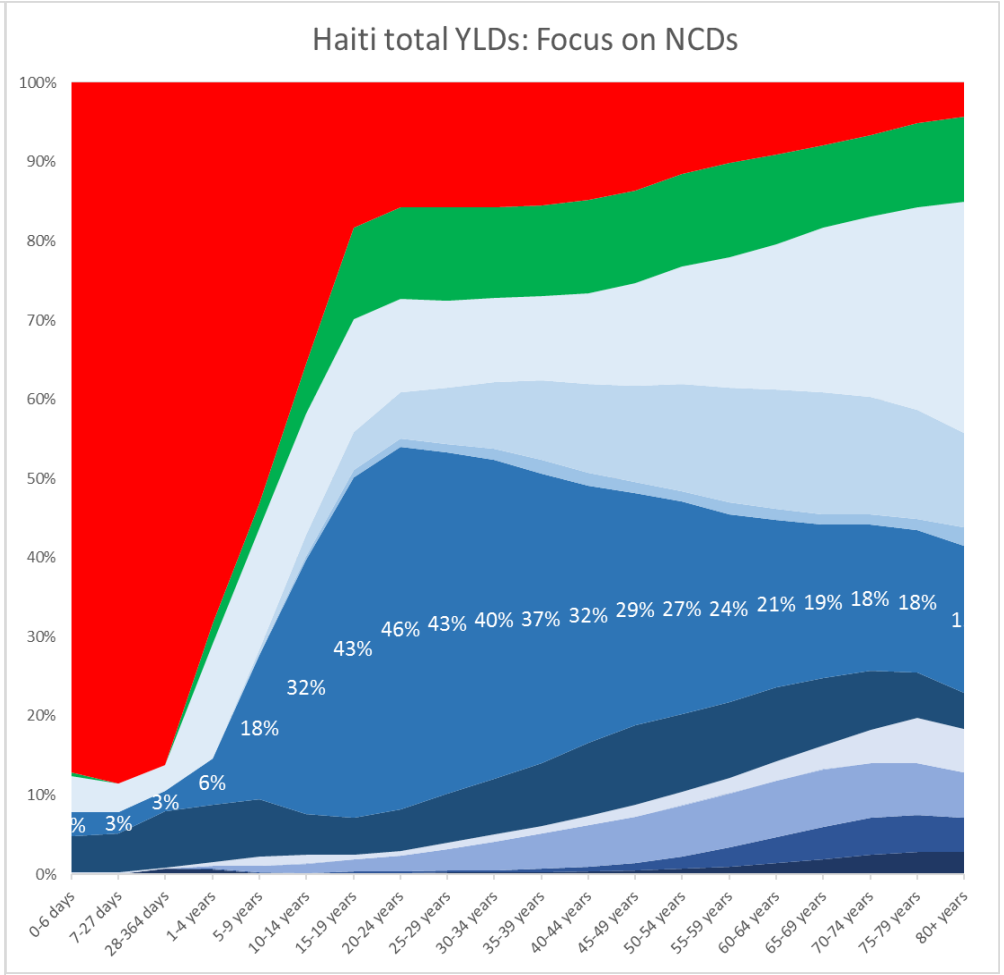
Mental Health Program Overview (2021)

After the 2010 earthquake, and in response to Haiti's Ministere de la Sante Publique et de la Population (MSPP)'s request, PIH/Zanmi Lasante (ZL) established a mental health program that would address the emergency mental health needs in Haiti. Over the first five years post-earthquake, the team integrated a community-based model into the primary care system with focused clinical programs and care pathways for depression, epilepsy, psychotic disorders, and child and adolescent mental health (CAMH) through funding from Grand Challenges Canada [12]. Today, mental health care is delivered across all 11 sites in the Central Plateau and Artibonite via a task-sharing model by Community Health Workers (CHWs), psychologists, social workers, nurses, and physicians. Mental health services are integrated with primary care services through training and ongoing supervision, in collaboration with the Ministry of Health. Providers conduct interventions for depression and trauma using tools and forms that have been created and adapted for the Haitian context, and are currently available in both English and French/Haitian Creole.

Burden of disease in Haiti:

NCD groups vs Injuries vs Communicable, maternal, child, nutritional (data from 2016)





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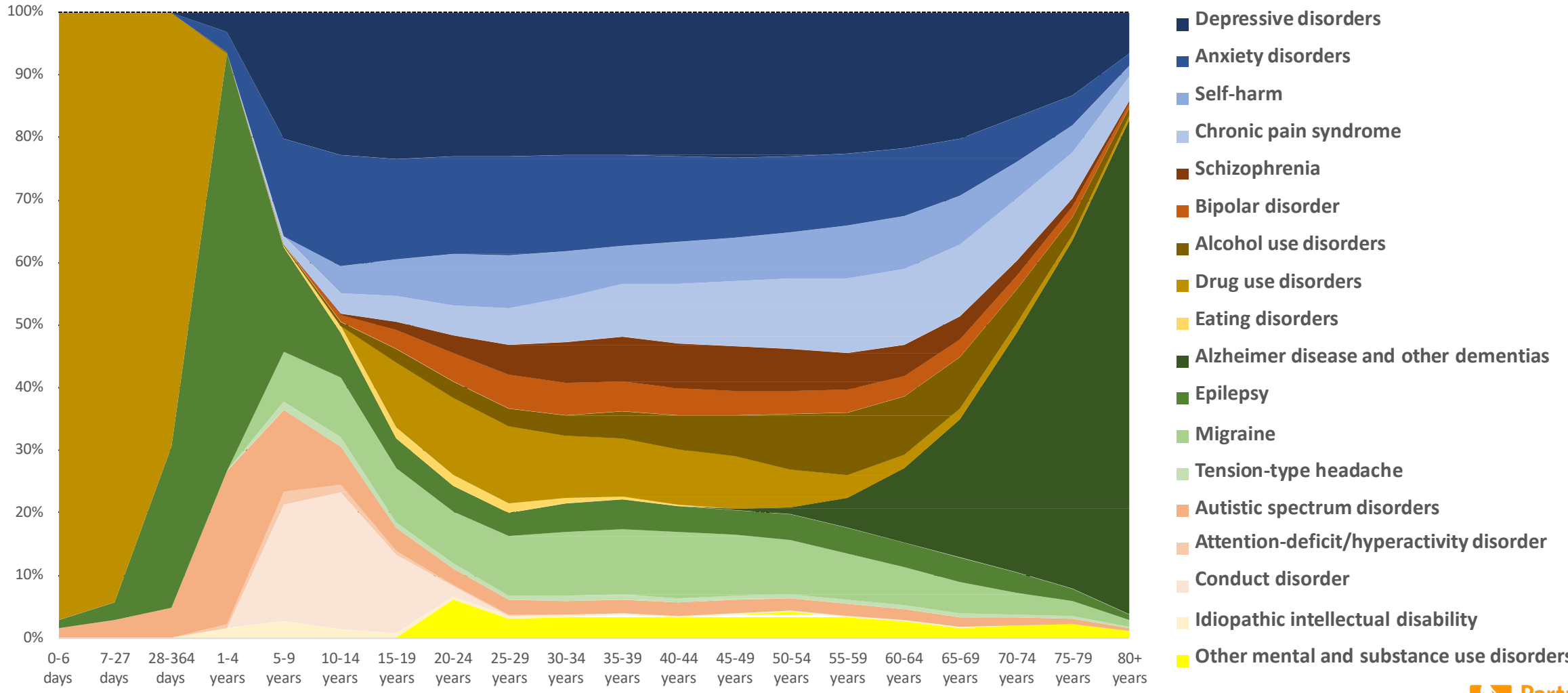
Burden of disease in Haiti: DALYS

Common mental illness, severe mental illness, substance abuse and eating disorders, neuropsychiatric illness, childhood onset disorders (data from 2016)



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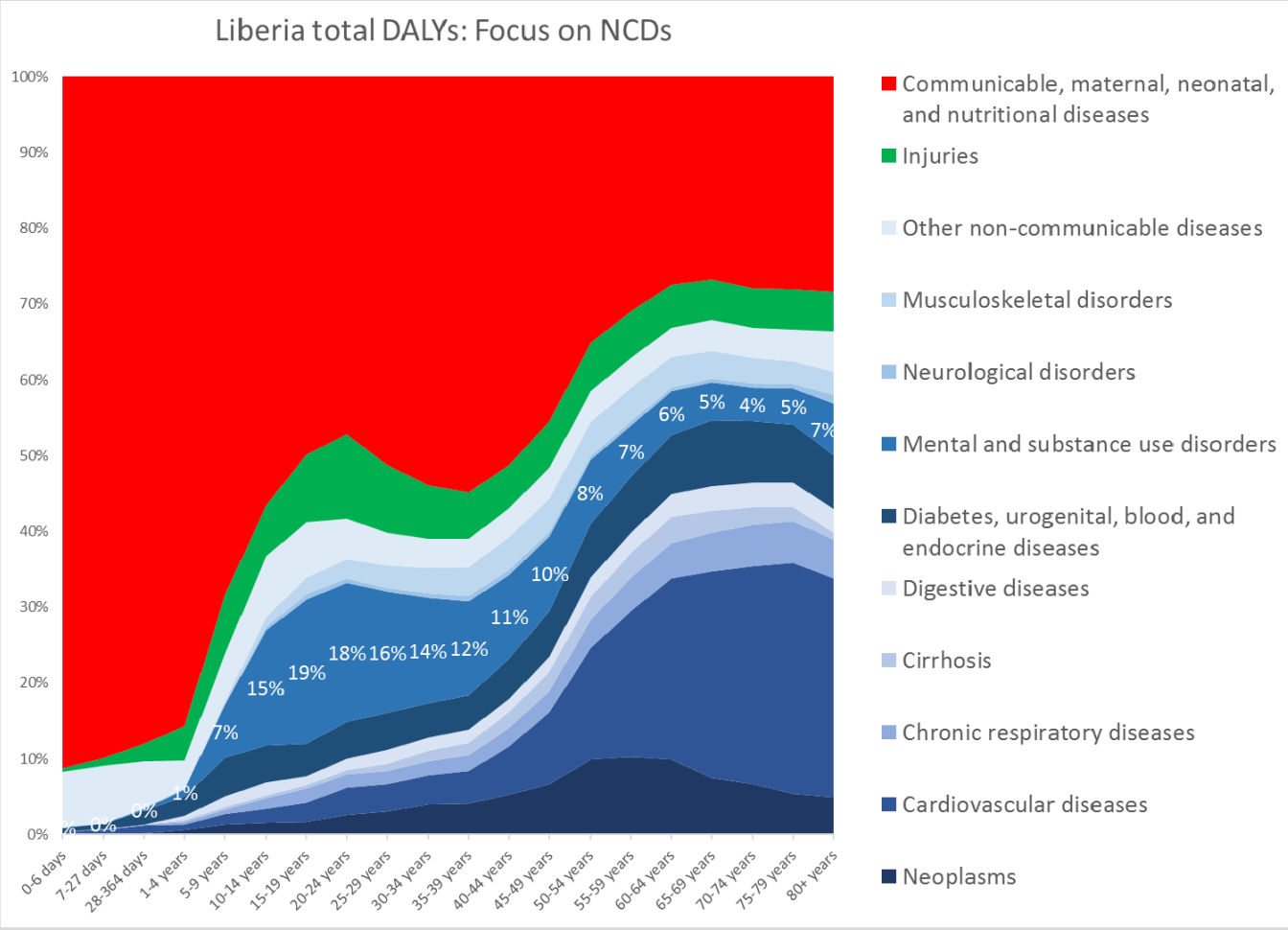
PIH Liberia

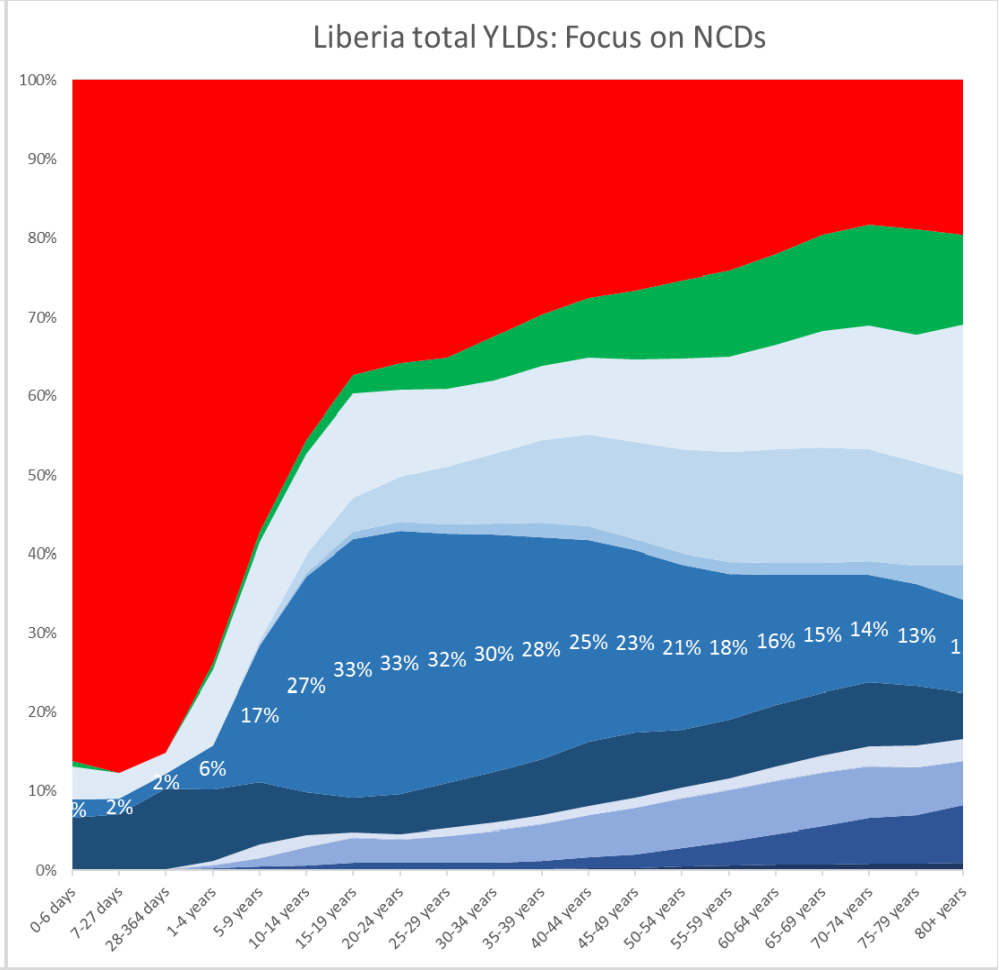
Mental Health Program Overview (2021)

PIH Liberia's Mental Health team has developed an innovative model of care for people suffering from common and severe mental health conditions in rural communities in Maryland County, Liberia, and collaborates closely with the MOH to integrate mental health into primary care and drive innovation [38]. Their program looks to link community and facility level care by working alongside traditional cultural practices, community leaders, health centers, and hospital care. PIH Liberia's mental health program started in 2016 by providing needed mental health care to people living with severe psychosis, bipolar disorder, epilepsy, depression, and other mental disorders in the cities of Harper and Pleebo in Maryland County [16]. Through multi-level programming, PIH promotes patients' resiliency and self-efficacy, which is critical in the wake of protracted civil war and the 2014-2016 Ebola outbreak. Due to a shortage of mental health staff, local clinicians work in a task-sharing referral mental health system. Mental health clinicians and primary care staff have been trained to accurately screen, diagnose, and treat people living with mental health conditions, using the WHO mhGAP PIH curriculum, and Common Elements Treatment Approach. PIH Liberia also works extensively in the community to provide care and educates community members about mental health conditions through patient-led radio broadcasts, training, and traditional/faith healer engagement. The team strengthens capacity of clinical providers and CHWs in order to improve quality of care, strengthen reintegration, and advocate for the human rights of people with mental health conditions. conditions. They are also enhancing the quality of data management and launched their electronic medical record system using OpenMRS in 2020, as well as CommCare to collect and organize patient data at the community level for the first time. In response to the COVID-19 pandemic, the team has worked to provide emotional support visits to families in quarantine and individual support for staff and clinicians to promote staff wellness.

Burden of Disease in Liberia:

NCD groups vs Injuries vs Communicable, maternal, child, nutritional (data from 2016)





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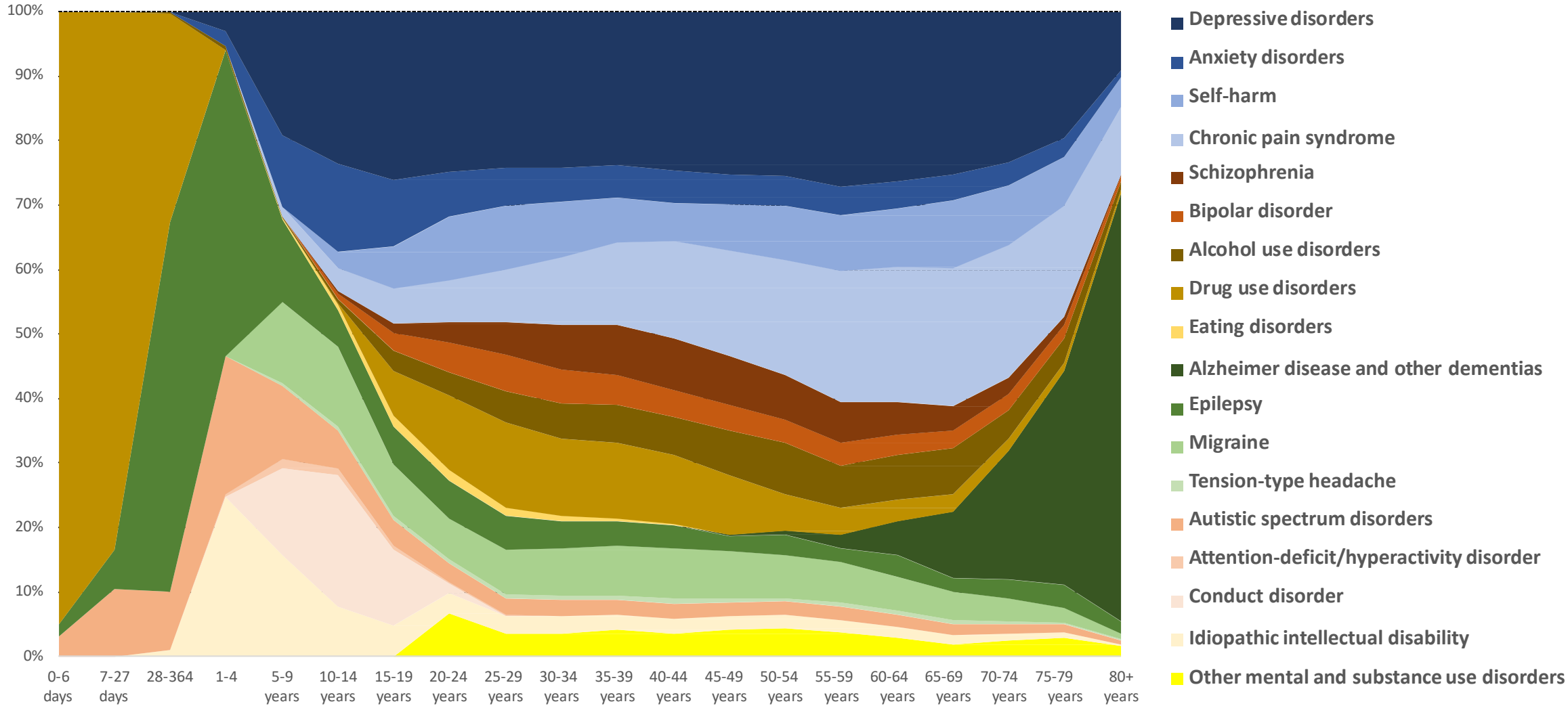
Burden of Disease in Liberia: DALYS

Common mental illness, severe mental illness, substance abuse and eating disorders, neuropsychiatric illness, childhood onset disorders (data from 2016)



PIH Sierra Leone

Mental Health Program Overview (2021)

The Sierra Leone (SL) team started a community-based mental health program in Kono District in 2018, and utilizes progressive decentralization to integrate mental health into general health care services at the district, primary care, and community level [39]. They are piloting the Common Elements Treatment Approach (CETA) and establishing a strong referral system between the community-based clinic and the psychiatric facility. Until now, the oldest psychiatric hospital in sub-Saharan Africa - Sierra Leone's Public Psychiatric Teaching Hospital (SLPTH) - went without crucial resources for decades. Together with the Ministry of Health and Sanitation (MOHS), PIH is renovating the hospital by strengthening referral networks, ensuring access and services for severe mental health conditions, and establishing basic needs such as electricity, running water, and dignified patient wards. The highest levels of government have recognized the infrastructural and psychiatric developments that have taken place as SLPTH continues to expand clinical operations, build a greater workforce, and strengthen the overall health system. At the community level, PIH has established a homeless reintegration program by adapting lessons learned from the Liberia mental health program and forming a cross -site collaboration. Regular mentorship and teaching sessions to CHWs and psychosocial counselors improve mental health service delivery. Mentorship and supportive visits to Wellbody primary health care unit strengthen the identification and management of common mental health conditions and enhance referral systems and collaborative community outreach visits occur weekly to deliver mental health services to the surrounding communities. PIH SL established a psychological first aid (PFA) hotline in 2020 to provide remote psychosocial support, including people directly affected by COVID-19. Since community-based services for mental health began in early 2019, the SL team has seen a three-fold increase in the number of patients treated for mental health conditions in Kono District. The team credits such success to increased outreach from CHWs, improved engagement of psychosocial counsellors, and the hiring of additional mental health clinicians including Kono District's first psychiatrist.

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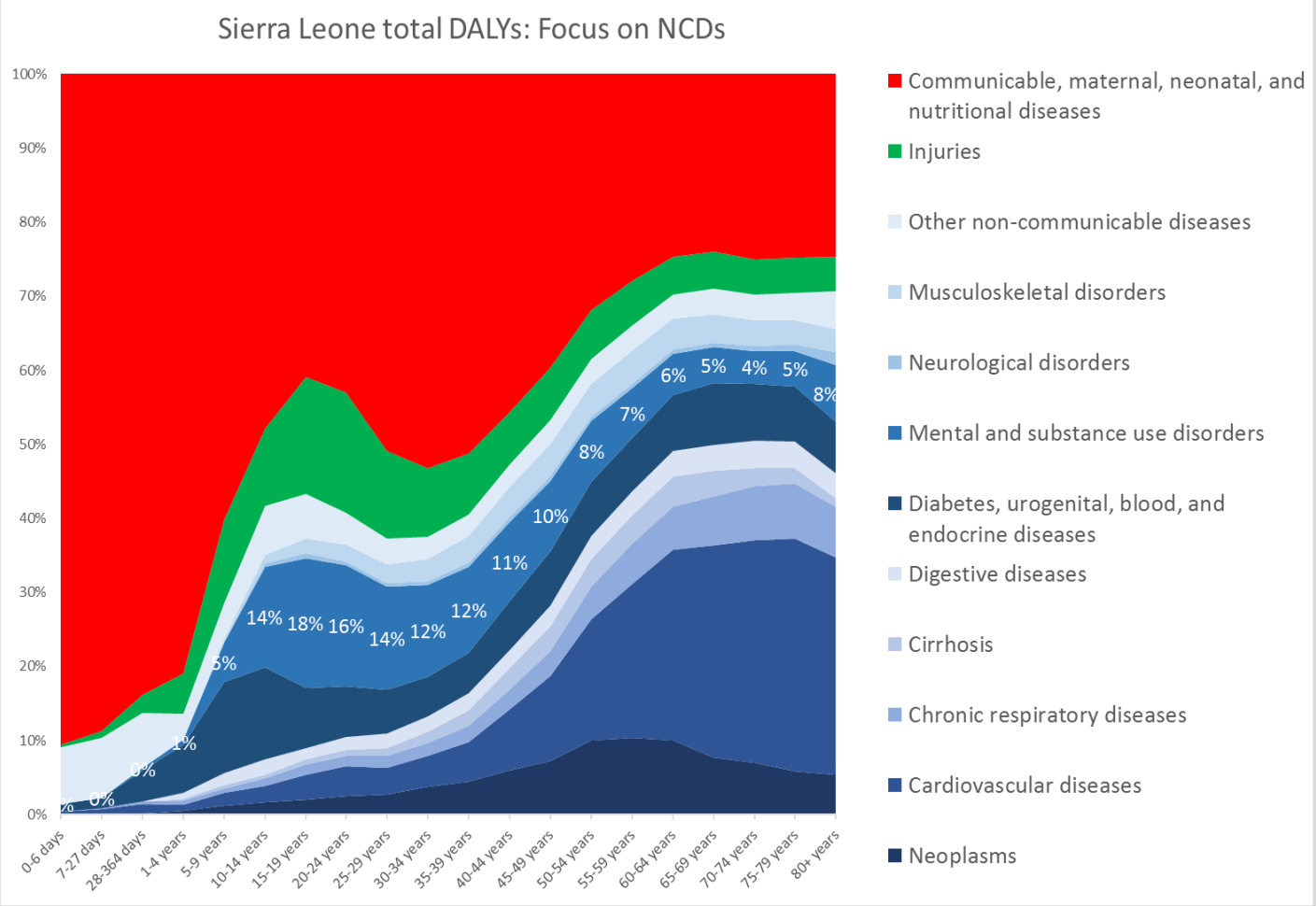
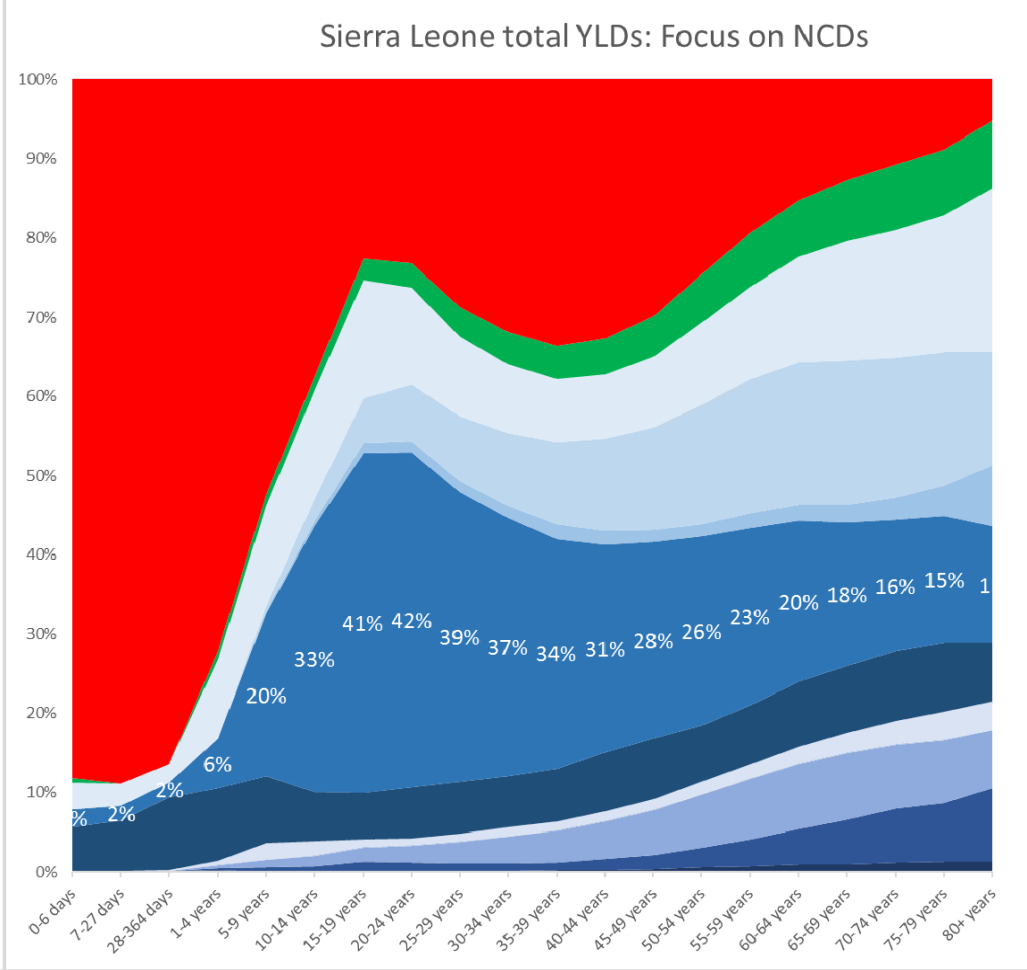
Burden of Disease in Sierra Leone:

NCD groups vs Injuries vs Communicable, maternal, child, nutritional (data from 2016)





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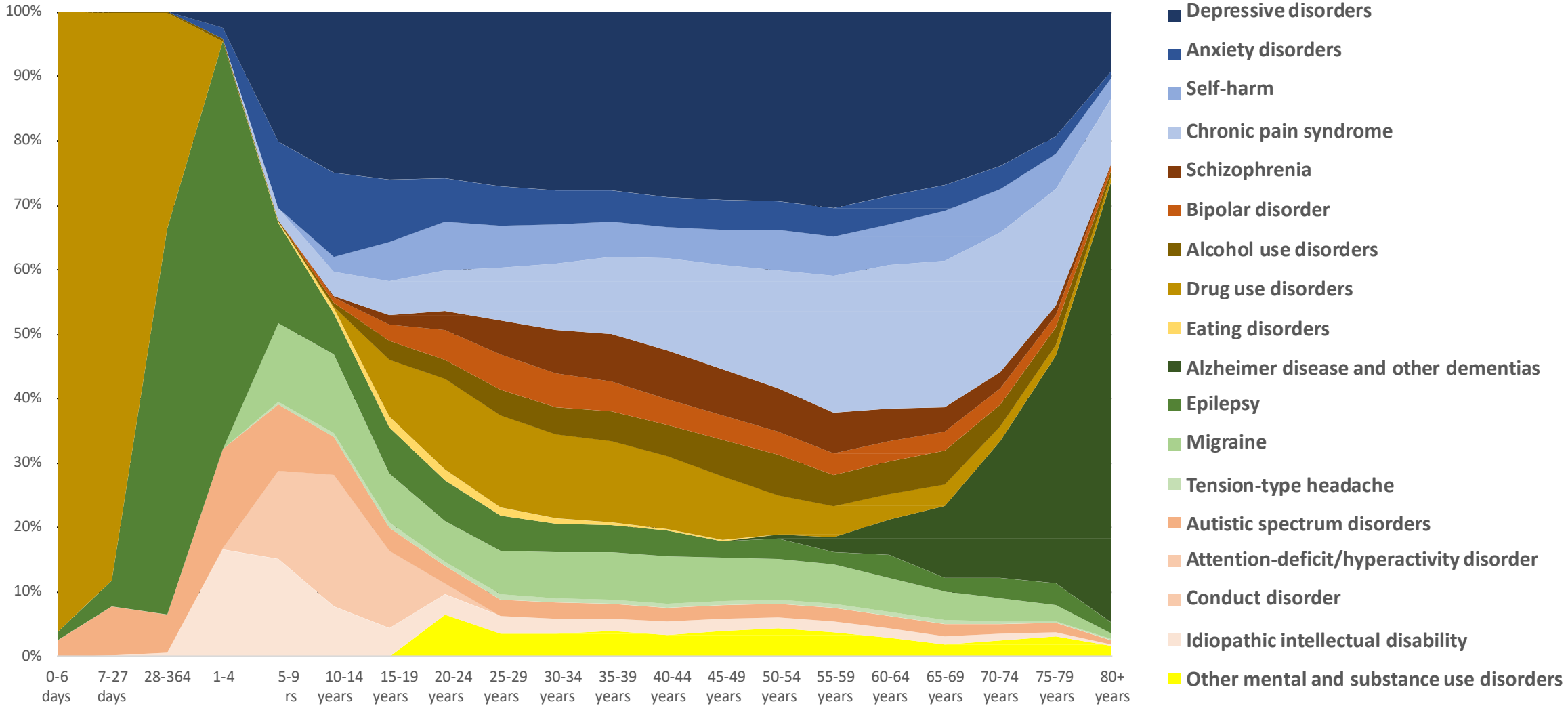
Burden of Disease in Sierra Leone: DALYs

Common mental illness, severe mental illness, substance abuse and eating disorders, neuropsychiatric illness, childhood onset disorders (data from 2016)



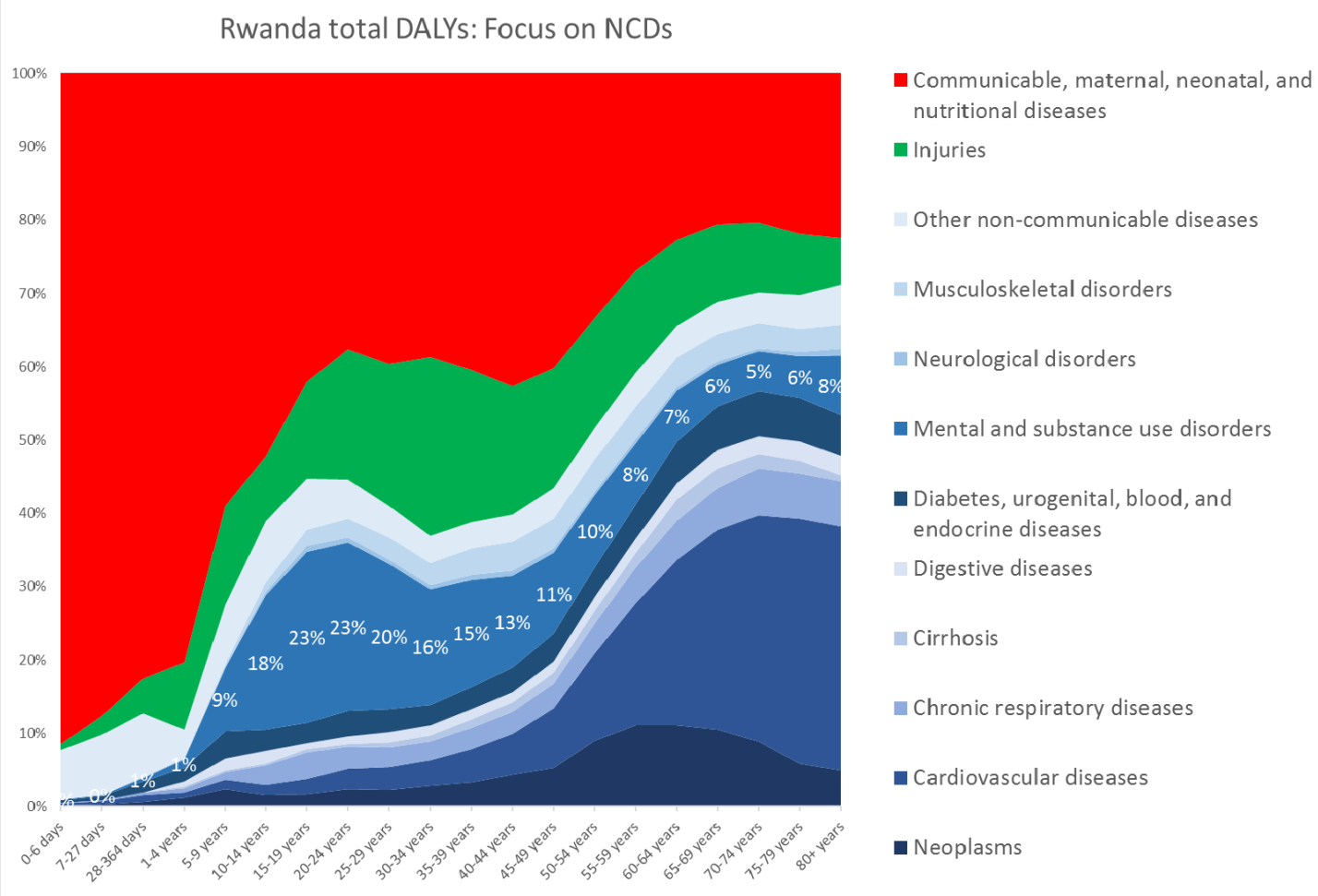
Inshuti Mu Buzima, Rwanda

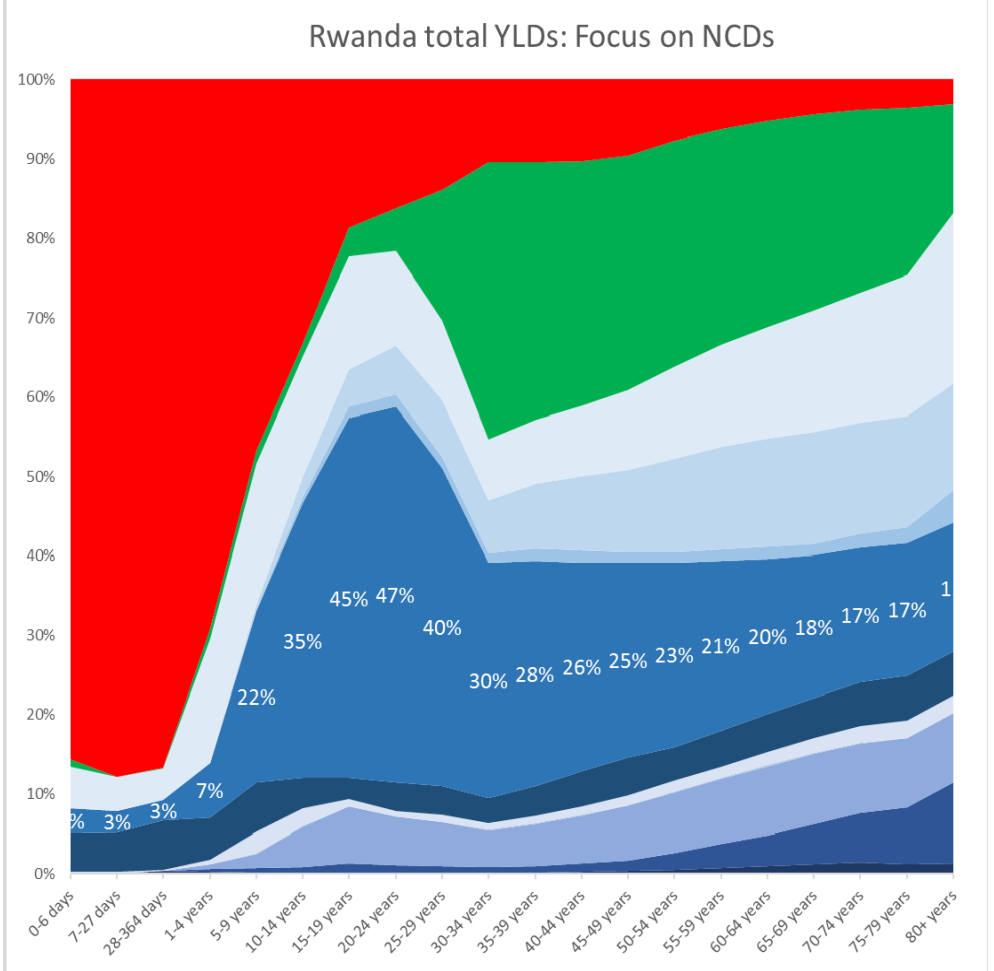
Mental Health Program Overview (2021)

Rwanda In 2009, PIH/Inshuti Mu Buzima (IMB) worked closely with Rwanda's Ministry of Health's (MOH) to establish the Mentoring and Enhanced Supervision at Health Centers for Mental Health (MESH MH) program. The program involves decentralizing mental healthcare services by upscaling the capacity of frontline health workers to deliver mental health care. MESH MH adapts the WHO's clinical mentoring guidelines for task shifting of HIV care for the provision of mental health care, and is comprised of primary care psychiatric nurses who mentor general nurses and community health workers who are trained by nurses on case finding, treatment adherence, psychoeducation and stigma reduction [13], [14]. The MESH MH model has been implemented in all 19 IMB health centers[13]. The program also focuses on scaling up capacity for care for four major neuropsychiatric disorders: schizophrenia, bipolar disorder, major depressive disorder and epilepsy. IMB has adopted WHO's Problem Management Plus (PM+), a psychological intervention used to treat depression, anxiety and stress[15]. To our knowledge, this is the first time PM+ has been being piloted in a rural, public setting worldwide, and the first-time psychotherapy is being provided in Rwanda outside of the capital. IMB is also working with the University of Global Health Equity (UGHE) to develop a center for mental health excellence and continues its close collaboration with the Ministry of Health's Rwanda Biomedical Center (RBC). Since the scale-up of mental health interventions in the District of Burera in 2011, referral to the national-level psychiatric hospital has decreased from around 10% to less than 1% -- indicating an increase in access to mental health at the community level.

Burden of Disease in Rwanda:

NCD groups vs Injuries vs Communicable, maternal, child, nutritional (data from 2016)





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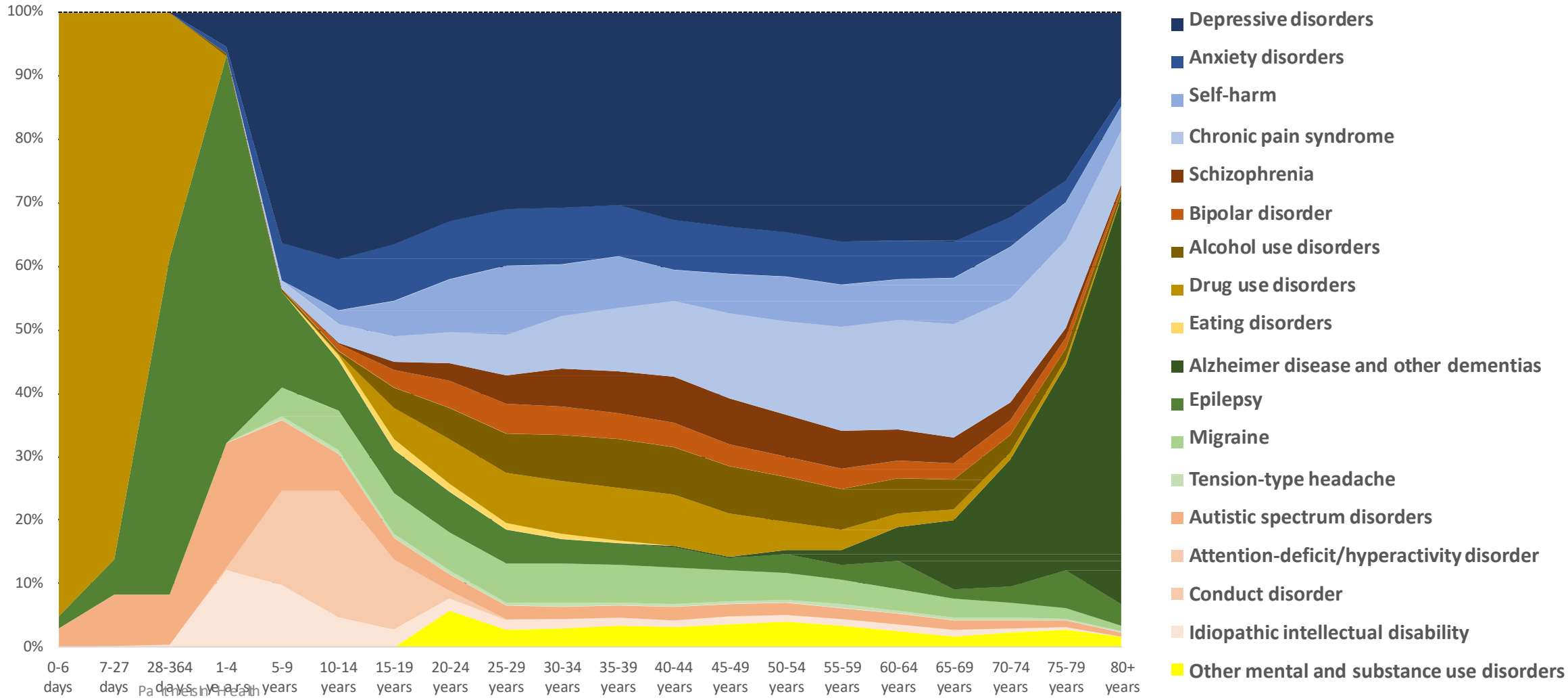


Abwenzi Pa Za Umoyo, Malawi

Mental Health Program Overview (2021)

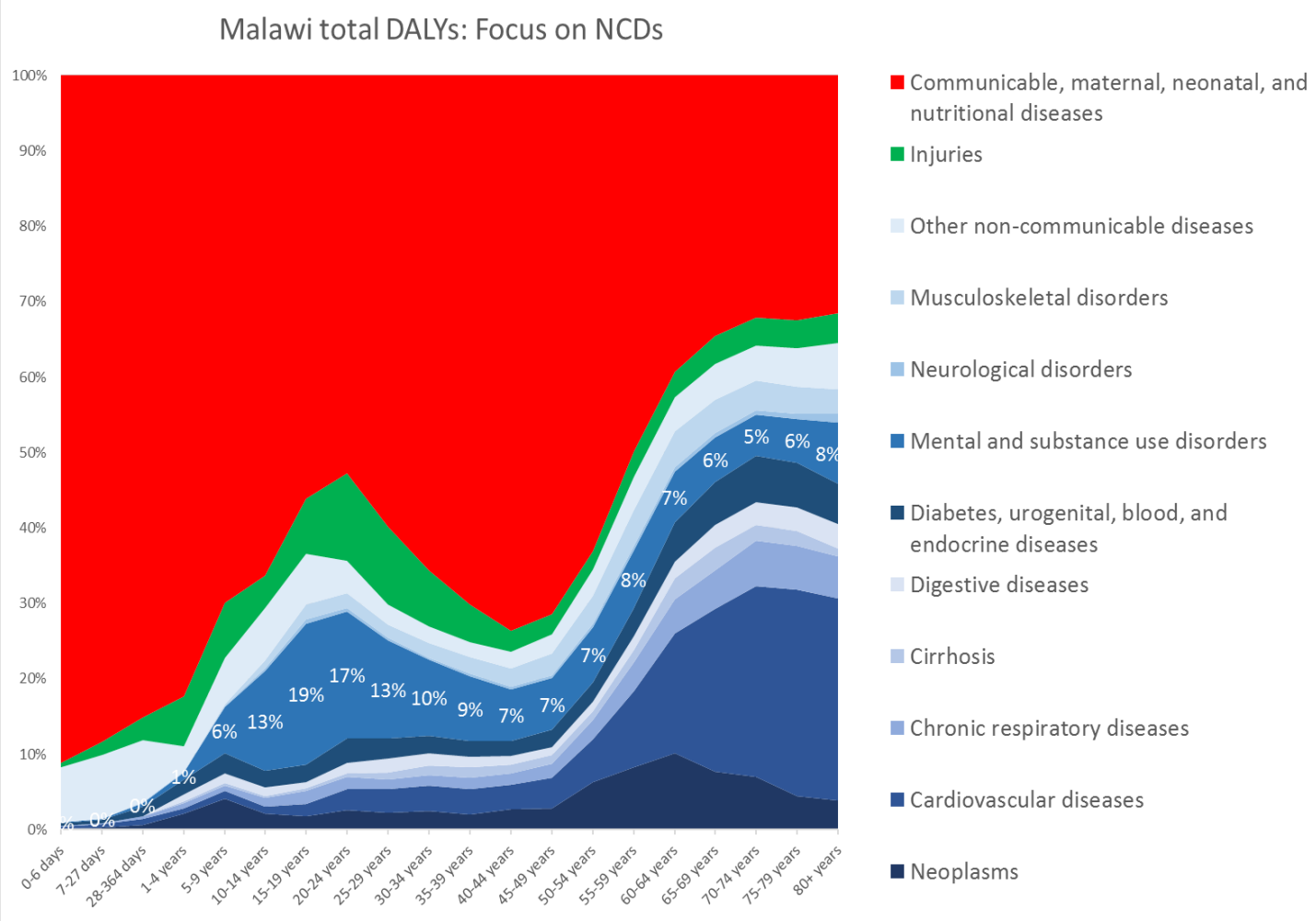
The PIH/Abwenzi Pa Za Umoyo (APZU) mental health program was developed in 2016 to focus on mental health integration into APZU's Integrated Chronic Care Clinic (IC3) in Neno District, which utilizes two hospital-based teams to support all health centers in the district [37]. The mental health program incorporates depression case-finding and treatment into HIV services, primary care, and maternal care. Clinical officers are supervised by a PIH mental health clinical officer who travels across 14 facilities as part of the Mentoring and Enhanced Supervision at Health facilities for Mental Health (MESH MH) model. The program has a psychologist and non-communicable diseases program specialist who supports the integration of the two disciplines. Lay counselors provide psychotherapy embedded in this primary care setting. The team adapted the WHO's Problem Management Plus Intervention (PM+) for perinatal and post-natal women in the community and plans to conduct a program evaluation on its impact [15].

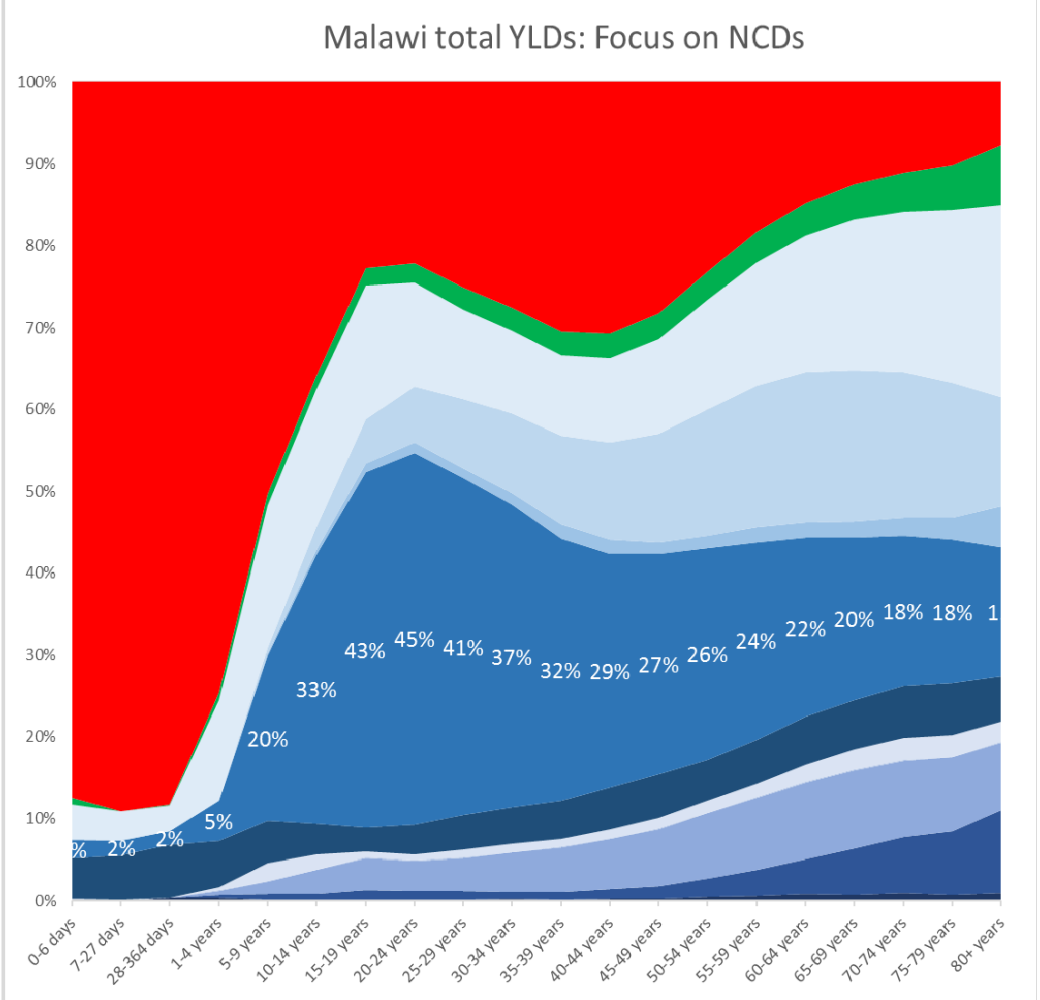
Additionally, APZU is conducting research projects on active case finding, referrals, linkage to care for clients with mental illness in IC3 and the Advanced Mental Health Clinic. They are also collaborating with the pharmacy and IC3 program to coordinate prescribing psychiatric and anti-epileptic medications. As part of APZU's COVID-19 response, the team provided social support to vulnerable patients, conducted extensive community work via active case finding, and spoke on radio shows about the impacts of COVID-19 and mental health, such as stigma, discrimination, anxiety, and depression. APZU is also one of two PIH sites piloting innovative staff wellness and peer support programs, including individual and peer support groups in person and virtually, workshops, online resources, education, and psychological support. Their integrated model of care has led to almost 90% retention of mental health and epilepsy patients.

Partners In Health

Burden of Disease in Malawi:

NCD groups vs Injuries vs Communicable, maternal, child, nutritional (data from 2016)





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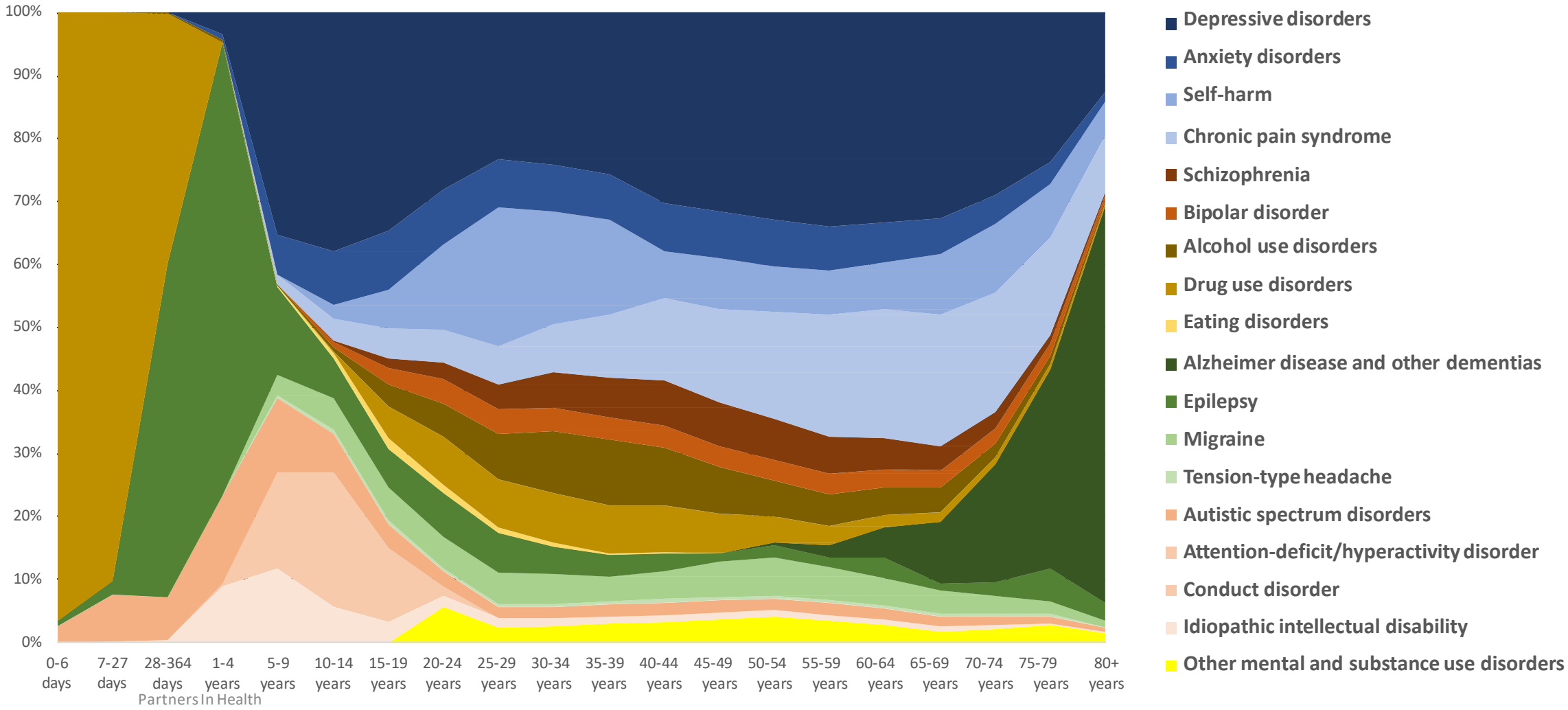
Burden of Disease in Malawi: DALYs

Common mental illness, severe mental illness, substance abuse and eating disorders, neuropsychiatric illness, childhood onset disorders (data from 2016)



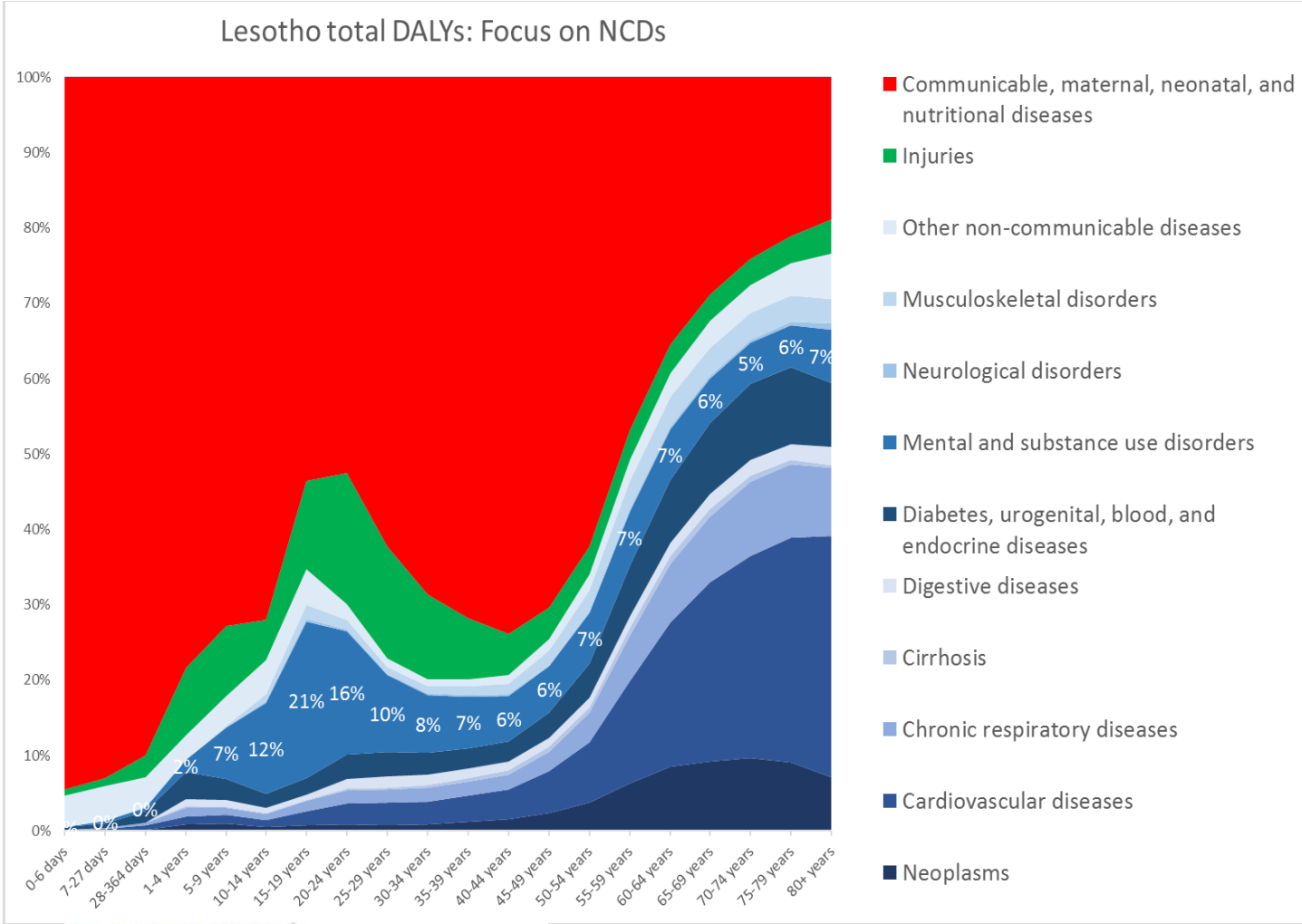
PIH Lesotho

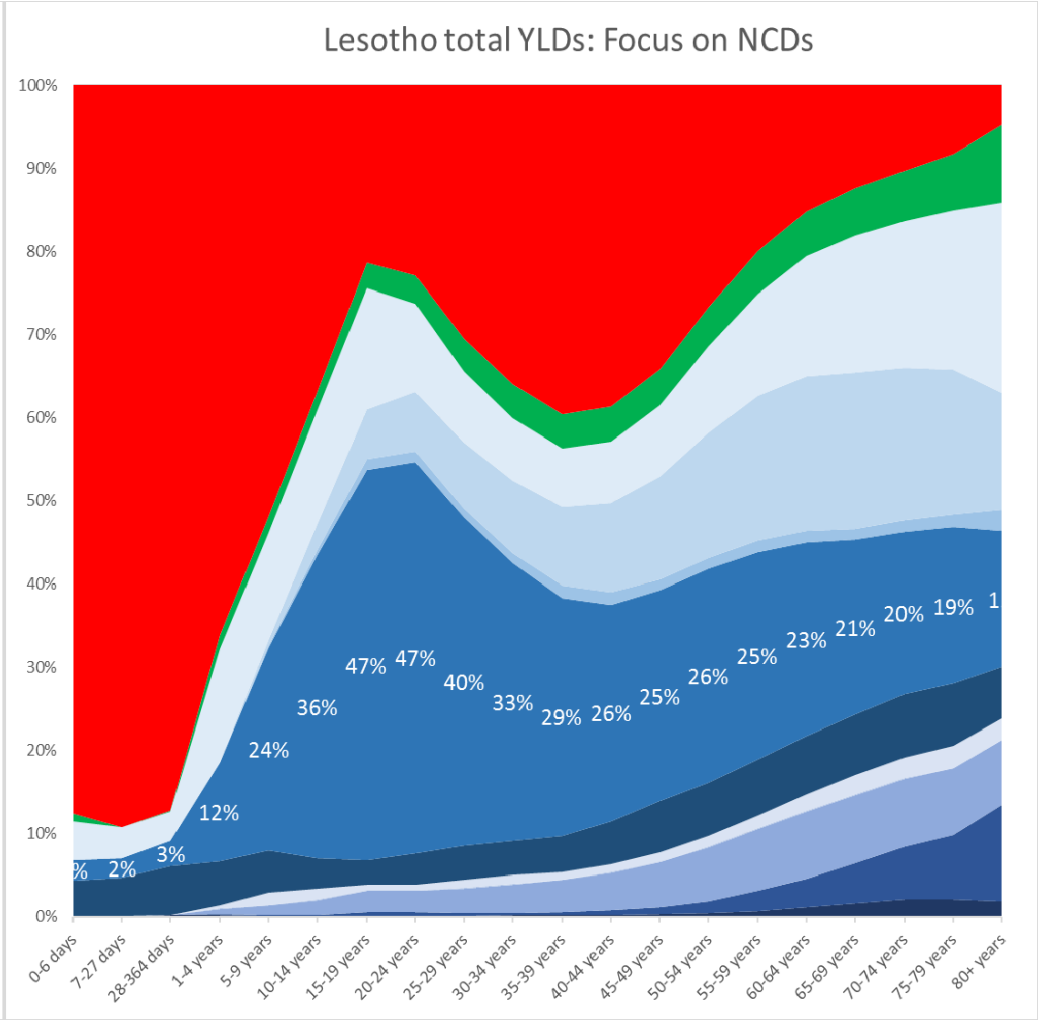
Mental Health Program Overview (2021)

The PIH Lesotho mental health team has collaborated closely with Lesotho's MoH to integrate depression care into the national MDR-TB treatment by delivering medication management and psychological treatment through a task-sharing model. General nurses and village health workers are trained and supervised by mental health professionals on how to deliver quality psychological services to treat common mental disorders in patients diagnosed with MDR-TB. Case finding, engagement, follow-up, and psychoeducation are conducted as part of the implementation. Monitoring, evaluation, and quality of services are strengthened via a mental health register, local refinement of mental health indicators, utilization of a mental health dashboard, and the pilot of CommCare for patient-level data collection. Services are being rolled out for delivery in the PIH-MOH Hospital Botsabeloin Maseru, at the district hospital in Berea, and seven additional PIH supported sites. In 2020, at the invitation of the Ministry of Health, the PIH Lesotho team has served as the lead author and partner for the country's first national mental health policy and strategic plan. If approved, the policy will result in new staff, stuff, spaces, and systems for mental health care that decentralize services for nearly a fifth of the population who live with mental, neurological and substance use disorders.

Burden of Disease in Lesotho:

NCD groups vs Injuries vs Communicable, maternal, child, nutritional (data from 2016)





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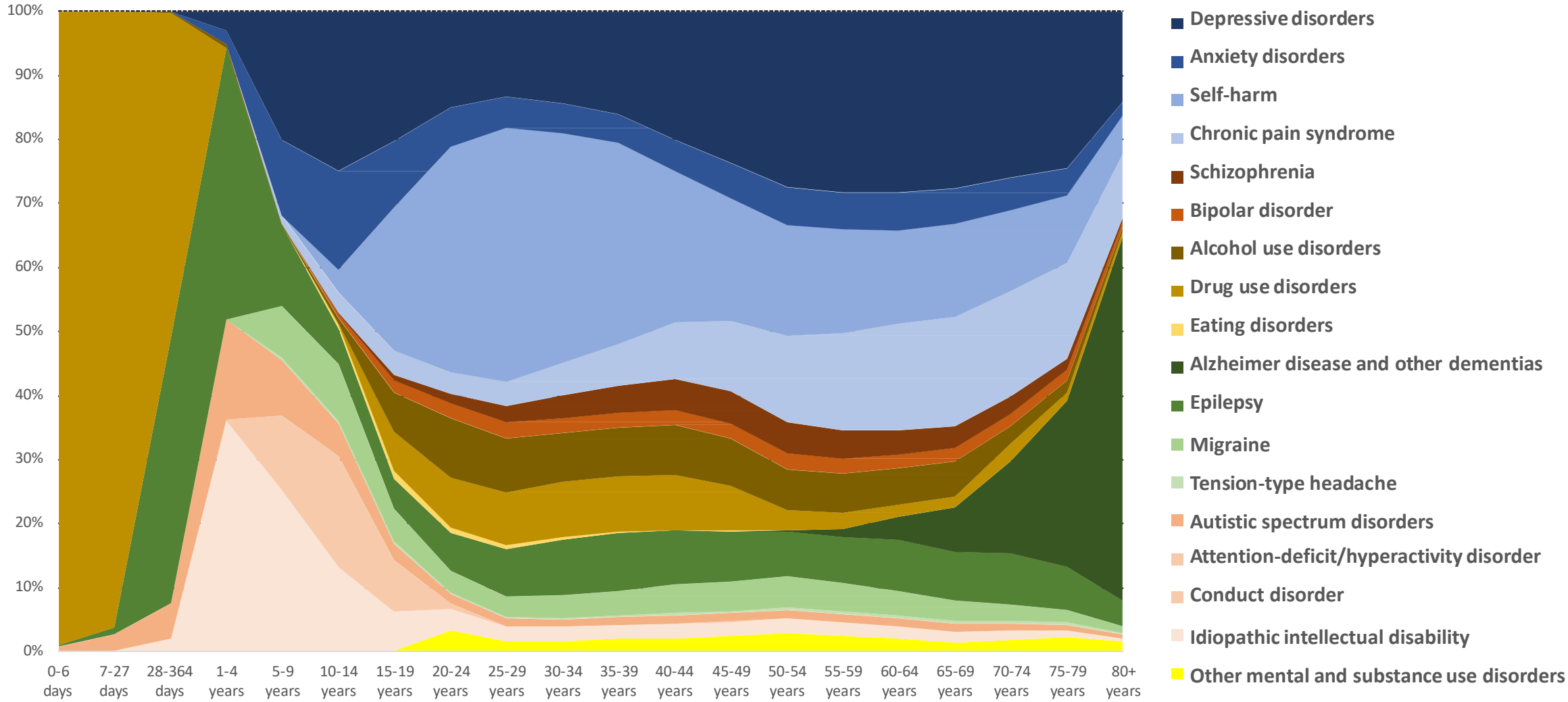
Burden of Disease in Lesotho: DALYs

Common mental illness, severe mental illness, substance abuse and eating disorders, neuropsychiatric illness, childhood onset disorders (data from 2016)



PIH Kazakhstan

Mental Health Program Overview (2021)

Kazakhstan, a former Soviet republic in Central Asia, is the largest landlocked country on the globe and lies in the heart of a region where severe MDR-TB is rampant. PIH has worked in the country since 2009, when Kazakhstan's Ministry of Health—citing PIH's track record of combatting MDR-TB in neighboring Siberia—invited PIH to support care for patients with MDR-TB, and the even more severe XDR-TB (extensively drug-resistant), in prison and civilian sectors of six pilot sites. Expansion of those efforts now has PIH fighting TB in about 65 percent of the country, or across 10 of Kazakhstan's 14 oblasts. In January 2020, Partners In Health Kazakhstan launched the Many Voices Project to reduce vulnerabilities of TB patients with mental health conditions. The project carries out mental health activities in the cities of Almaty and Karaganda, reaching the primary target groups: TB patients on M/XDR treatment, TB patients and family members, and TB doctors and psychologists. Since the project launched right before the COVID-19 pandemic, emergency response has been a key component of their work. This year, the mental health team plans to launch activities in another site in Karaganda city and conduct further trainings for health care workers and psychologists in primary health centers. The team is expanding its CETA work through ongoing practice and supervision and looks forward to participating in a virtual CETA training in Russian.

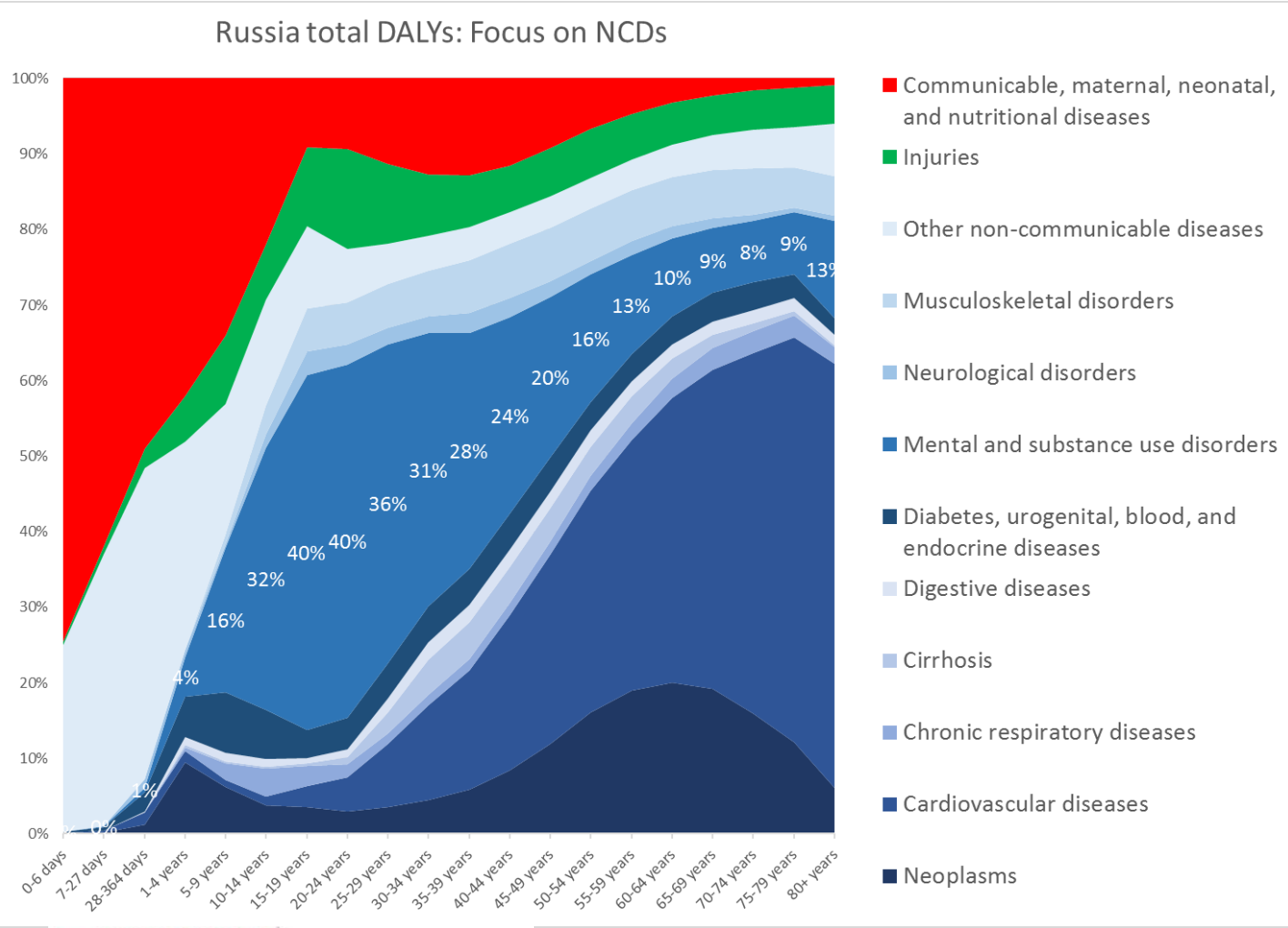
PIH Russia

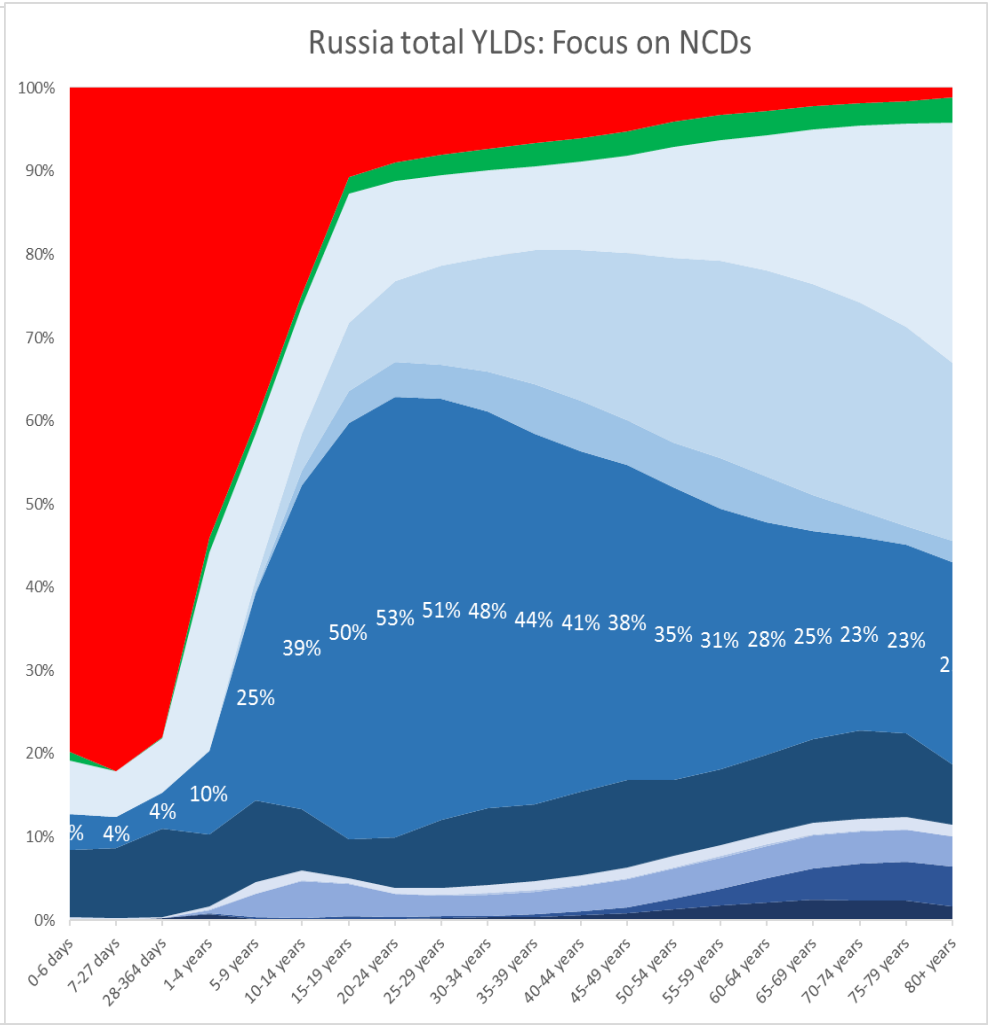
Mental Health Program Overview (2021)

PIH began its work in mental health in Russia by offering psychosocial support to TB patients. Along with the high prevalence of TB, rates of drug abuse have risen rapidly. Many TB patients having co-morbid alcohol and substance use disorders and there is an increased rate of HIV transmission due to synthetic injected drug use. Moving forward, the mental health program will include a focus on harm reduction, utilize adapted mental health materials from other sites and implement a decentralized task-shifting model with care provided largely by non-specialists.

Burden of Disease in Russia:

NCD groups vs Injuries vs Communicable, maternal, child, nutritional (data from 2016)





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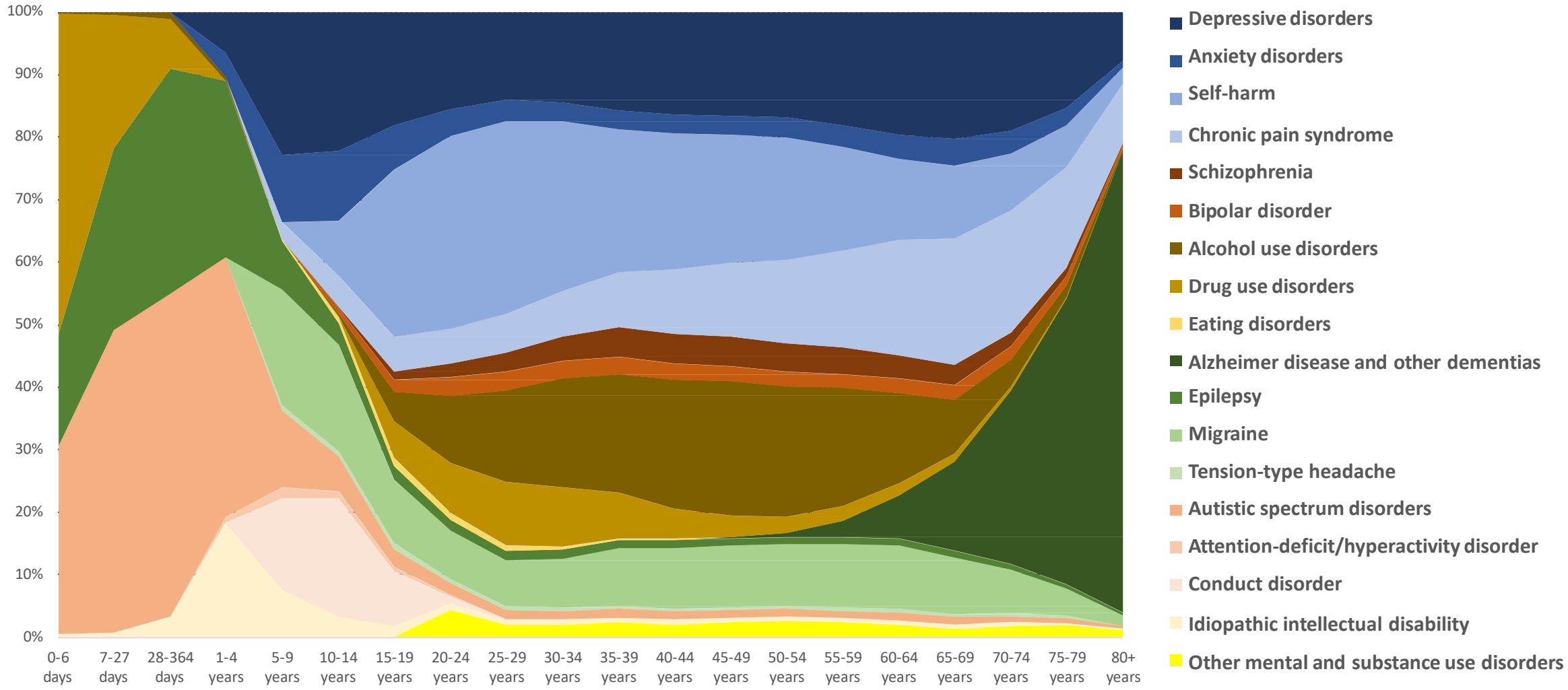
Burden of Disease in Russia: DALYs

Common mental illness, severe mental illness, substance abuse and eating disorders, neuropsychiatric illness, childhood onset disorders (data from 2016)



PIH Community Outreach and Patient Empowerment (COPE), Navajo Nation

Mental Health Program Overview (2021)

PIH's COPE project collaborates with the Navajo Nation and the Rosebud Sioux Tribe to support community health workers known as Community Health Representatives (CHRs) in a community-based model, and works alongside tribal leadership, community programs, and the Indian Health Service. CHRs provide mental health first aid and address substance abuse and suicide rates. COPE is committed to integrating cultural and traditional values into its work and making sure that any proposed intervention is grounded in the lived experience of the community and addresses the social determinants of health across the life course. As such, they have brought in traditional knowledge holders to facilitate trainings requested by community partners, such as the Lakota Mental Health First Aid training developed and delivered by Ethleen Iron-Clouds Two Dogs in August 2017 in Rosebud, South Dakota. Through a patient-focused and community-based approach, COPE partners with healthcare teams and communities on Navajo Nation to develop programs that address structural barriers to adequate health, respond to the burden of disease, and bridge gaps in the health care system. The mental health program is currently being launched in order to expand capacity building of staff, increase mental health telehealth services, and support staff wellness to prevent over-extension and burnout of CHRs.

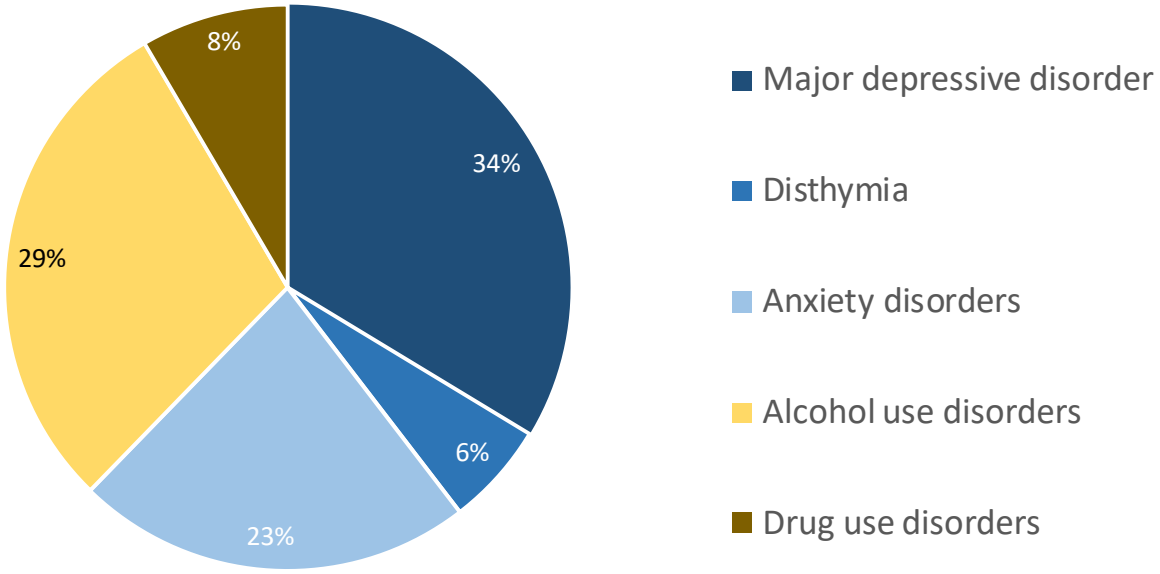
Burden of Disease in Navajo Nation and Rosebud: YLDs

Common mental illness, substance abuse and alcoholism (data from 2016)

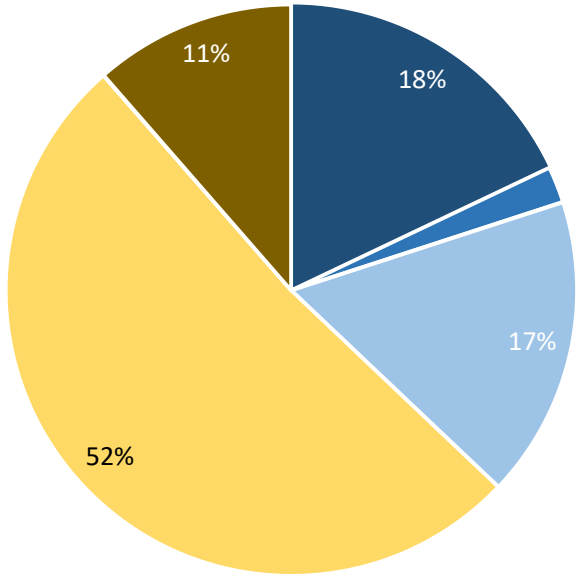
Beals et al 2005	N	Any disorder	Depressive disorders	MDD	Dysthymia	Anxiety disorders	Alcohol use	Drug use
Southwest tribes	1446	21.0%	7.3%	6.5%	2.1%	7.5%	9.6%	3.5%
Northern plains tribes	1638	24.3%	4.6%	4.3%	0.9%	7.0%	20.9%	5.9%

	MDD	Dysthymia	Anxiety disorders	Alcohol use	Drug use (*opioid-like*)	Drug use (*thc-like*)
YLDs	16	3	11	14	3	1
YLDs /100000	1125	198	759	980	211	70
YLDs	12	1	12	35	6	2
YLDs /100000	744	85	708	2134	356	118

Southwest tribes: Burden of disability (YLDs)



Northern plains tribes: Burden of disability (YLDs)



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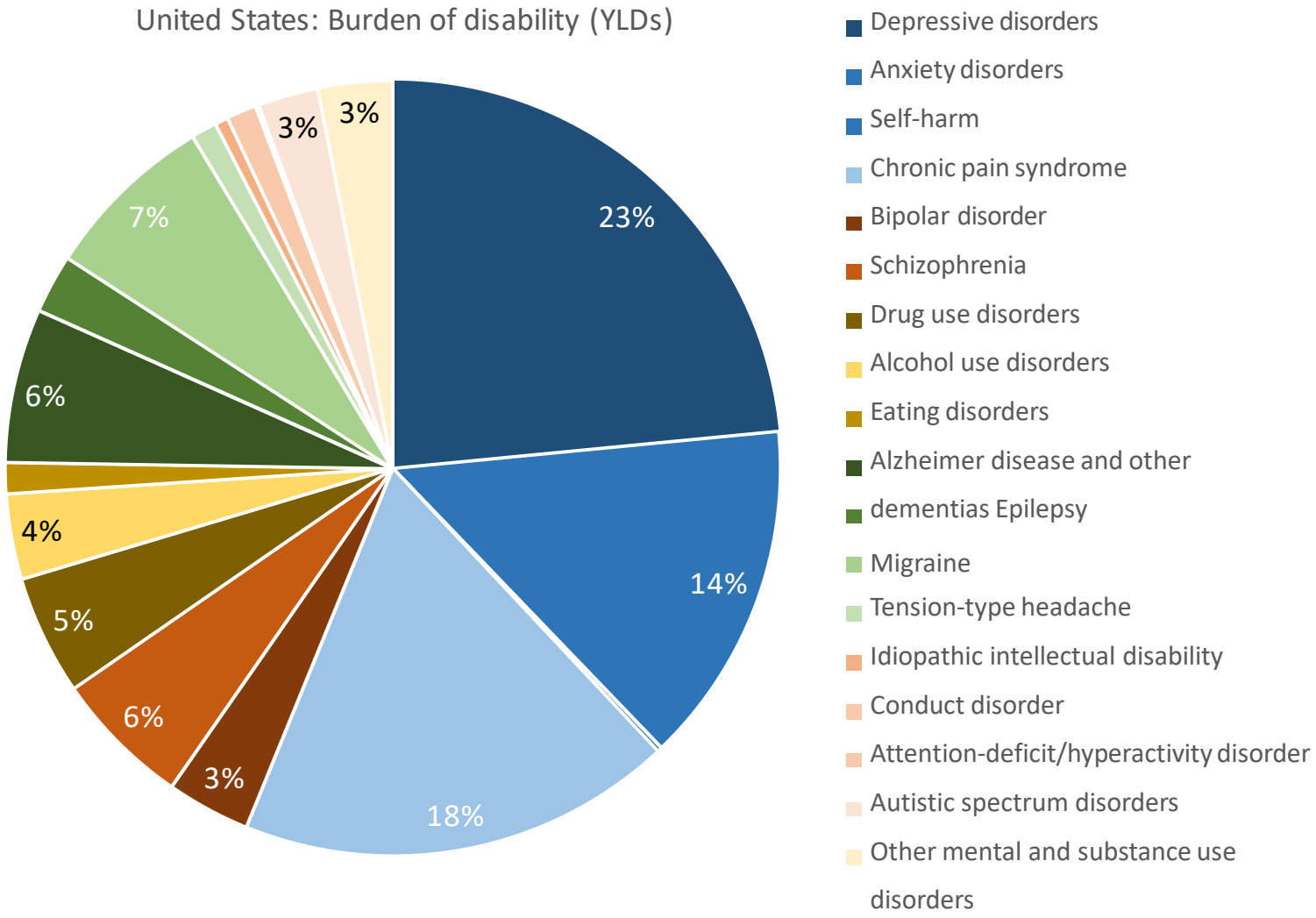
YLDs and YLD/100.000 are the author's estimations based on Beals et al 2005 and GHDX data for US

Partners In Health

Burden of Disease in Navajo Nation and Rosebud: YLDs

Common mental illness, severe mental illness, substance abuse and eating disorders, neuropsychiatric illness, childhood onset disorders (data from 2016)

US data	YLDs per 100,000	% YLDs
Depressive disorders	1051	23%
Anxiety disorders	642	14%
Self-harm	9	0%
Chronic pain syndrome	813	18%
Bipolar disorder	156	3%
Schizophrenia	256	6%
Drug use disorders	224	5%
Alcohol use disorders	160	4%
Eating disorders	59	1%
Alzheimer disease and other dementias	288	6%
Epilepsy	110	2%
Migraine	323	7%
Tension-type headache	48	1%
Idiopathic intellectual disability	25	1%
Conduct disorder	56	1%
Attention-deficit/hyperactivity disorder	6	0%
Autistic spectrum disorders	113	3%
Other mental and substance use disorders	139	3%



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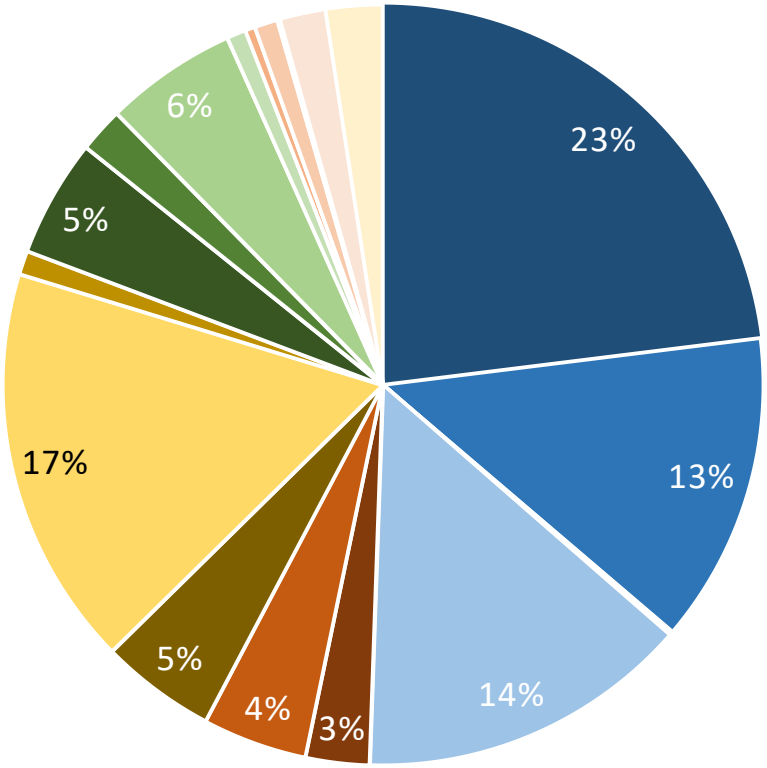
Burden of Disease in Navajo Nation and Rosebud: YLDs

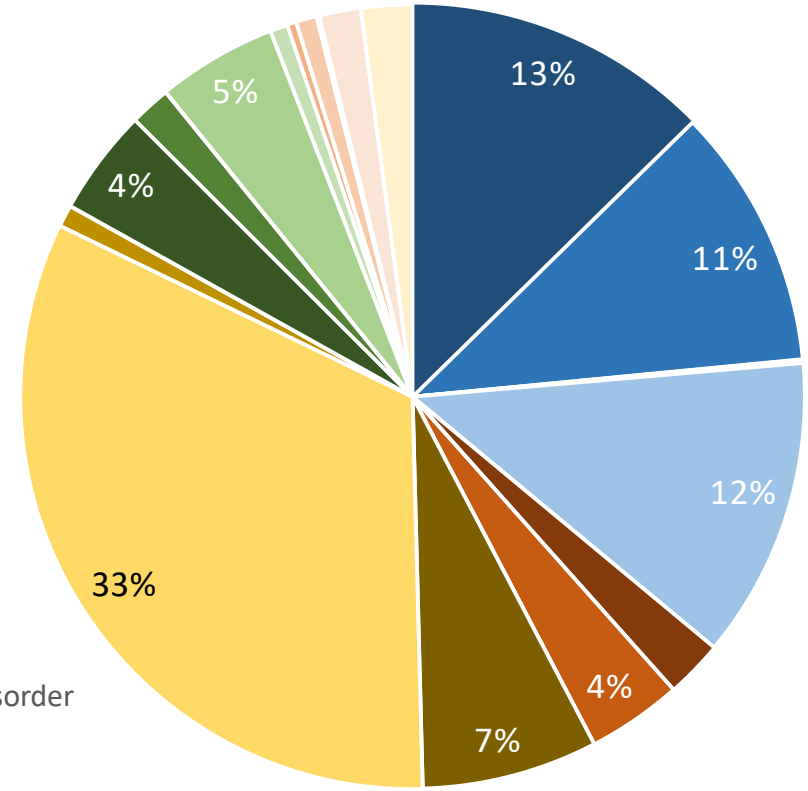
Common mental illness, severe mental illness, substance abuse and eating disorders, neuropsychiatric illness, childhood onset disorders (data from 2016)

Southwest tribes: Burden of disability (YLDs)



- Depressive disorders
- Anxiety disorders
- Self-harm
- Chronic pain syndrome
- Bipolar disorder
- Schizophrenia
- Drug use disorders
- Alcohol use disorders
- Eating disorders
- Dementias
- Epilepsy
- Migraine
- Tension-type headache
- Idiopathic intellectual disability
- Conduct disorder
- Attention-deficit/hyperactivity disorder
- Autistic spectrum disorders
- Other mental and substance use disorders

Northern plains tribes: Burden of disability (YLDs)



YLDs and YLD/100.000 are the author's estimations based on Beals et al 2005 and GHDX US data in lieu of missing data

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Questions? We'd love to chat with you!

Please contact xsitementalhealth@pih.org for access to additional materials or information

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