

Cancer with Low Socioeconomic Status

Case #14

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CASE STUDY NARRATIVE

Anna is 23 years old, did not finish college, and has two small children (they are not, yet, school-age). She was recently diagnosed with leukemia. She really struggles financially (even with Medicaid) and emotionally with her diagnosis. She is single and her parents are not nearby (or otherwise able) to help. What is available to help her and her children?

RESOURCE NARRATIVE

HEALTH ISSUE

Condition

Leukemia is a group of cancers affecting the blood and bone marrow due to the uncontrolled development of abnormal leukocytes, also known as white blood cells (Mayo Clinic, 2024). Leukemia originates in the bone marrow, which is spongy tissue located in the interior of bones where blood is produced (Cleveland Clinic, 2022). Blood cells are formed from hematopoietic stem cells, which differentiate into myeloid or lymphoid cells. Myeloid cells then develop into red blood cells, platelets, or specific white blood cells such as basophils, eosinophils, and neutrophils. Lymphoid cells further develop into other types of white blood cells, including lymphocytes and natural killer cells (Cleveland Clinic, 2022). Leukemia develops from the uncontrollable growth of myeloid or lymphoid cells into abnormal leukemia cells (Mayo Clinic, 2024). These leukemia cells do not form solid tumors like many other types of cancer. Instead, they accumulate in the bone marrow, crowding out normal blood cell production of developing red blood cells, white blood cells, and platelets. (Cleveland Clinic, 2022).

Leukemia is classified into different types based on the speed of progression and the type of blood cell affected. Acute lymphoblastic leukemia (ALL) primarily affects children and progresses rapidly, while acute myeloid leukemia (AML) can occur in both children and adults and also progresses quickly. Chronic lymphocytic leukemia (CLL) is a slow-growing type that primarily affects older adults, and chronic myeloid leukemia (CML) progresses more gradually but can become more aggressive over time (NCI, 2024). While ALL is the most common form of

leukemia in children, AML, CML, and CLL predominantly affect older adults, with the median age at diagnosis ranging from 65 to 72 years (Cleveland Clinic, 2022).

Prevalence

Leukemia is a significant public health concern in the United States, affecting thousands of individuals each year. In the United States, leukemia affects approximately 14.1 per 100,000 individuals annually, leading to about 62,000 new diagnoses each year (Cancer Center, 2024; National Cancer Institute, 2024). Leukemia has a mortality rate of approximately 5.9 per 100,000 individuals, resulting in over 23,000 deaths in the United States in 2024 (SEER, 2024). Leukemia accounts for approximately 1.5% of all new cancer diagnoses in the United States each year, and in 2021, an estimated 508,796 individuals were living with leukemia throughout the nation (NCI, 2024). Among adolescents aged 15–19, leukemia is the fourth most common type of cancer; however, the disease is most frequently diagnosed before age 15 or after age 50 (National Institutes of Health, 2024). Acute lymphoblastic leukemia (ALL) is the most prevalent type of leukemia in children and teenagers, accounting for approximately 54% of leukemia cases in patients under 20 years old (Leukemia Research Foundation, 2024; NCI, 2024). Chronic lymphocytic leukemia (CLL) is the most common type of leukemia in adults, and it is the most prevalent in white men.

Risk Factors

Risk factors for leukemia vary by the type of the disease, and age is one of the primary factors impacting the development of each disease. ALL is most common in children between the ages of 2-5, while AML is most often diagnosed in adults with a median age of 68 years (American Cancer Society, 2024). CLL and CML are most common in older adults, with median diagnosis ages 65 and 64 years, respectively (American Cancer Society, 2024). Among

individuals under 20, leukemia accounts for 7.8% of new cancer cases, while adults over 65 represent 56.8% of new cases, with the highest incidence in the 65 to 74 age group (SEER 2024). Regardless of the type of leukemia, men are more likely than women to develop the disease, with an incidence rate of 17.9 per 100,000 compared to 11.0 per 100,000 in women (SEER, 2024).

Leukemia is also highly influenced by genetics and can result from genetic mutations in blood-forming cells, leading to unchecked cell proliferation (Science Direct, 2018). These predisposing conditions most commonly occur as inherited conditions or disorders resulting from rare gene mutations. Children with Down Syndrome have a 2-3% higher chance of developing ALL or AML than individuals without the condition (National Cancer Institute, 2024). Other hereditary conditions resulting from genetic mutations that impact DNA repair mechanisms, such as Fanconi Anemia and Li-Fraumeni Syndrome, also increase the risk of developing leukemia, specifically ALL and AML (Mayo Clinic, 2024; NCI, 2024). Specific genetic mutations, such as ARID5B and IKZF1, have also been identified as risk factors for leukemia, particularly in ALL (PubMed, 2024).

Race and ethnicity also influence leukemia incidence and survival. White and Hispanic populations have the highest incidence rates, with Hispanics at 42.9 per 1 million and non-Hispanic whites at 34.2 per 1 million (SEER, 2024). Non-Hispanic Black individuals have the lowest incidence rates (18.7 per 1 million) but also the lowest survival rates across leukemia subtypes (SEER, 2024).

Men are generally more likely to develop leukemia than women. In 2020, 269,503 men were diagnosed with leukemia, compared to 205,016 women (PMC, 2024). Between 1999 and 2018, men accounted for 56.85% of leukemia-related deaths, compared to 42.15% for women

(PMC, 2024). The estrogen in females has been found to have protective effects, contributing to lower leukemia incidence rates among women (PubMed, 2024).

General Prevention

Preventing leukemia involves minimizing exposure to known risk factors. A primary way to reduce the risk of leukemia is to avoid ingestion of tobacco, as smoking has been linked to an increased risk of certain types of leukemia (Fircanis, S., et al., 2014). Reducing exposure to carcinogenic chemicals, such as benzene, a chemical commonly found in industrial settings and cigarette smoke, is also essential to lower the risk of leukemia (American Cancer Society, 2024). Additionally, limiting radiation exposure from medical treatments or environmental sources is an important preventive measure, as radiation can damage DNA and lead to high-risk mutations (American Cancer Society, 2024).

Morbidity and Mortality

Leukemia is currently the seventh leading cause of cancer-related deaths in the United States. Death rates for most types of leukemia are higher among the elderly due to the increased incidence with increasing age. In terms of morbidity, an estimated 508,796 people were living with leukemia in the U.S. in 2021. In 2024, the country is expected to see approximately 62,770 new cases of leukemia, accounting for 3.1% of all newly diagnosed cancer cases (SEER 2024).

In the United States, the overall 5-year survival rate for individuals diagnosed with leukemia is approximately 65%; however, survival rates vary significantly depending on the specific subtype of the disease. CLL has a 5-year survival rate of 88%, ALL is 71.3%, CML is 70.6%, and AML is 31.7% (SEER, 2024).

Types of Leukemia

Cancer is typically defined as an uncontrolled division of cells, which can sometimes result in tissue growths known as cancerous neoplasms. There are many types of cancer, with one in three Americans being diagnosed with cancer at some point in their lives. Leukemia is typically characterized by an uncontrolled proliferation of varying types of blood cells and is often observed within the bone marrow (American Cancer Society, n.d.).

There are four common types of leukemia, commonly known as Acute Lymphocytic Leukemia, Acute Myeloid Leukemia, Chronic Lymphocytic Leukemia, and Chronic Myeloid Leukemia. Each type of leukemia has individual etiologies and pathophysiologies (Puckett & Chan, 2023).

Acute Lymphocytic Leukemia's (ALL) pathophysiology is characterized by an uncontrolled proliferation of immature lymphocytes and lymphocyte progenitors, also known as B or T lymphoblasts. Acute lymphocytic leukemia is three times as common in the caucasian population as compared to the African American population. The risk of ALL increases with previous exposure to chemotherapy treatments, exposure to benzene, or ionizing radiation. The incidence of ALL is around 4,000 new cases per year, with a majority of diagnoses being in children under the age of 18; however, it is also commonly diagnosed in young adults. It is also considered more common among those with trisomy 21 and neurofibromatosis (Puckett & Chan, 2023). Acute Myeloid Leukemia (AML) is characterized by a clonal expansion of primitive hematopoietic myeloid-derived stem cells in the bone marrow. The body has inadequate red blood cells (RBCs) and platelets. The median age of AML diagnosis is 68 years, and there is a higher prevalence in white males (Vatiki et al., 2024).

Chronic Lymphocytic Leukemia (CLL) and Chronic Myeloid Leukemia (CML) are similar to their acute counterparts, with the main difference being how fast the cancer grows.

CLL and CML are much slower growing than ALL and AML, which can affect treatment types. Acute leukemias are typically treated more aggressively than chronic leukemias, which can impact the side effects of the treatments (Taneja et al., 2023).

Treatment Strategies

Leukemia treatment strategies depend on several key factors, including the type of leukemia, the patient's age and overall health, and the extent of disease spread (American Cancer Society, n.d.). The kind of leukemia, such as acute or chronic forms, influences treatment decisions. Acute leukemias often require immediate and intensive treatment, while chronic leukemias may be monitored over time before initiating therapy (Chennamadhavuni et al., 2023).

Treatment also depends on the patient's age and general health. Older adults or those with other health conditions may face higher risks from aggressive treatments, leading healthcare providers to opt for less intensive therapies. If the disease has already spread outside of the bone marrow, more vigorous or targeted treatments are required (Poh Loh et al., 2022). By considering these factors, healthcare providers can formulate a personalized treatment plan to achieve the optimal result for each patient.

Leukemia is primarily categorized based on its progression speed (acute or chronic) and the type of blood cell affected (lymphocytic or myeloid), resulting in four main types. They are Acute Lymphocytic Leukemia (ALL), Acute Myeloid Leukemia (AML), Chronic Lymphocytic Leukemia (CLL), and Chronic Myeloid Leukemia (CML) (Mayo Clinic, 2024a).

Leukemia treatment can include chemotherapy, radiation therapy, targeted therapy, immunotherapy, and stem cell transplantation. Chemotherapy is the most common, using chemicals that kill or prevent leukemia cells from multiplying. It is administered as a pill, injection, or shot under the skin. Patients with Leukemia will likely receive chemotherapy and

medication (American Cancer Society, n.d.). It is crucial for treating acute leukemias such as ALL and AML, as well as CLL and CML. Chemotherapy uses medications like Cytarabine and Vincristine, taken orally, directly into the bloodstream, or injected into the cerebrospinal fluid to target brain and spinal cord cells. Side effects include nausea, vomiting, hair loss, fatigue, and low blood cell counts (American Cancer Society, 2024b).

Radiation therapy is used in specific areas to shrink tumors or to prepare for stem cell transplants. It uses intense energy beams or X-rays that kill or stop leukemia cells from growing. The goal is to treat cancer while harming as few healthy cells as possible (healthy cells repair themselves more easily). It can be internal or external, where either a large machine called a linear accelerator is used or a small solid implant is placed in or near the cancer. Side effects include skin irritation, fatigue, and an increased chance of getting cancer again over time (Mayo Clinic, 2024b).

Targeted therapy suppresses specific molecules that cause the proliferation of leukemia. Side effects consist of diarrhea, liver issues, and swelling. This treatment is mostly used for CML, CLL, and ALL (American Cancer Society, 2024c).

Targeted therapies work by blocking specific proteins or signaling pathways essential for leukemia cell growth. For instance, tyrosine kinase inhibitors (TKIs) like imatinib and masitinib are commonly used for CML by targeting the BCR-ABL fusion protein (Mayo Clinic, 2024a). Resistance to targeted therapies can develop over time, requiring combination treatments or second-line medications (National Cancer Institute, 2022)

Immunotherapy (CAR-T cell therapy, monoclonal antibodies) stimulates the immune system's ability to fight cancer. Flu-like symptoms, low blood pressure, and neurological side effects are some of the side effects of this treatment used for treating CLL. CAR-T cell therapy is

especially effective in relapsed or refractory ALL and has led to long-term remissions in some patients. However, cytokine release syndrome (CRS), a potentially severe inflammatory response, is a significant risk (American Cancer Society, 2024a).

Stem cell transplantation replaces failing bone marrow with good cells, most often after receiving high-dose chemotherapy or radiation. Infections and organ damage are the side effects associated with stem cells. Cell transplantation is used for AML and CML (National Cancer Institute, 2023). There are two types: autologous (using the patient's cells) and allogeneic (using donor cells). Allogeneic transplants are preferred for high-risk leukemia cases but carry risks like graft-versus-host disease (GVHD) (Leukemia & Lymphoma Society, 2024).

ALL affects young adults in their early twenties explicitly. Since it is acute leukemia, it progresses quickly and requires immediate treatment. Financially, treatment for ALL is expensive since it is intensive and prolonged, often requiring multiple phases, frequent visits to the hospital, and high medication costs even with Medicaid (Salsman, 2019). Those with no family support face difficulties undergoing treatment for ALL. Emotionally, the stress of long-term therapy, potential side effects including fatigue, infection, nausea, and hair loss, along with uncertainty about the future, takes a significant toll on the individual (Ben-Ari, 2021).

Mental Health

The hardships of a cancer diagnosis can take a serious toll on mental health. Any type of cancer diagnosis can affect an individual's mental health through feelings of anxiety, depression, and loneliness. Family members and caregivers can also face the effects of poor mental health in this situation. An individual is at greater risk of anxiety when they have or have had cancer (American Cancer Society). Anxiety disorders such as generalized anxiety disorder (GAD), obsessive-compulsive disorder (OCD), and panic disorder are all common mental health

disorders faced by cancer patients (Leukemia and Lymphoma Society). Depression and distress are also common when coping with cancer and its treatments. Social isolation and loneliness are prevalent when individuals are going through cancer treatments (American Cancer Society).

Poor mental health can cause harmful physical health effects on an individual with cancer. Cancer patients' physical and psychological health needs to be addressed through active treatment and the continuum of survivorship care (Naughton & Weaver, 2014). Depression and anxiety disorders might have the same side effects, such as fatigue, nausea, decreased appetite, thinking problems, and sleep issues, as the cancer and treatments make it hard to tell the difference between the two. This could lead to unaddressed mental health issues, causing long-term, unmanaged stress. Long-term and unmanaged stress can lower the strength of an individual's immune system, which decreases the body's ability to fight off the disease (Leukemia and Lymphoma Society). Since physical health directly affects mental health status and overall quality of life, physical symptoms are more likely to be treated and recognized. However, this leads to a lower detection level for mental health symptoms (Naughton & Weaver, 2014).

IMPACT OF CULTURE

Social

Lifestyle Factors

Smoking cigarettes exposes individuals to over 7,000 carcinogenic chemicals, including benzene, a key carcinogen linked to an increased risk of leukemia (Wiley Online Library, 2024). Chronic stress has also been shown to weaken the immune system, reducing the body's ability to detect and eliminate cancerous cells, thus increasing the risk of a variety of cancers (NLM,

2024). Alternatively, exercise may lower leukemia risk by regulating the immune system and aiding in the destruction of mutated cells (PubMed, 2024).

Lifestyle factors that increase this risk include smoking, being overweight, consuming too much alcohol, and receiving too much sun exposure. Some studies have even found that women consuming a lot of alcohol during pregnancy might increase the risk of leukemia in their children (American Cancer Society, 2024). Individuals who smoke are more likely to develop acute myeloid leukemia (AML) than people who do not (University of Rochester Medical Center). While there is a lack of evidence on many lifestyle risk factors, smoking has been shown to correlate the most with being at risk for developing leukemia.

Lack of Education

Cultural implications surrounding education can pose further detriment in relation to cancer diagnosis. The amount of education one has retained positively correlates with health outcomes. Education contributes to the likelihood of receiving quality healthcare through health literacy and harmful behavior prevention (Tulane, 2022). Health literacy is the extent to which individuals can find, understand, and utilize information to make informed decisions on their health (U.S. Department of Health and Human Services, 2025). Almost 90% of U.S. adults struggle with health literacy. Limited health literacy is prevalent across those with low socioeconomic status, increased age, and minorities, while also showing a heightened impact on Medicaid enrollees (Center for Health Care Strategies, 2024). Educational interventions have notably increased health literacy scores (Bayati et al., 2018). Education allows individuals to be better informed and versed in their healthcare, specifically in understanding and comprehending complex information contributing to their health benefits (Tulane, 2022). Similarly, higher education students are more receptive to health education initiatives (Virginia Commonwealth

University, 2015). In the context of cancer treatment and care, low health literacy prevents patients from making informed decisions on their health, contributing to adverse outcomes.

An initial lack of education before cancer diagnosis predisposes patients to engaging in unhealthy, attributable behaviors. In the context of leukemia, as well as many other cancers, tobacco usage and common exposure to chemicals contribute to a higher likelihood of diagnosis (UT Southwestern Medical Center, n.d.). Individuals with lower levels of education are more likely to be low-income, placing them in an environment that typically lacks resources for preventative behaviors and healthcare (Rural Health Information Hub, 2020). Preventive behaviors are actions taken by individuals to avoid potential negative health outcomes. Typical preventative behaviors include exercise, a healthy diet, vaccinations, and good hygiene (De et al., 2024). However, in areas with low education and, therefore, low health education, there are fewer resources to directly gain knowledge of preventative measures that are difficult to obtain and understand (Virginia Commonwealth University, 2015).

Geographical Factors

Leukemia incidence, especially pediatric leukemias like ALL, is most common in the Northeast and the West Coast. Leukemia has the lowest incidence rates in the Southern U.S. New Hampshire has the highest incidence of pediatric cancers; however, the West has the highest incidence of Leukemia. Despite the significant incidence of leukemias in the Northeast and West, literature suggests a worse prognosis among those living in certain locations. In border towns along the southern border, for example, diagnoses of ALL are more likely to have a worse prognosis (Castellanos et al., 2023). Additionally, the chances of having a good prognosis are significantly reduced in geographic areas with a lower average SES, which typically includes rural locations (Totadri et al., 2019). This suggests that ALL incidence is less reliant on

socioeconomic factors and more on geographical and environmental factors. Still, the prognosis and health outcomes of ALL are heavily dependent upon socio-cultural factors.

Economic

Socioeconomic Status

Lower socioeconomic status (SES) is associated with increased leukemia risk and poorer survival outcomes. Individuals with lower SES often experience delayed diagnosis and limited access to healthcare, leading to a worse prognosis (NCI, 2024). Children with fathers in farming or painting occupations have been found to have a higher leukemia incidence, likely due to increased exposure to pesticides and industrial chemicals (PMC, 2024). Socioeconomic disparities also affect treatment adherence and outcomes, with lower-income individuals facing greater barriers to care, such as access to insurance and medical care (PubMed, 2022).

Socioeconomic status is an individual's or group's position in society that is based on and measured by their income, education, and occupation. Low socioeconomic status (SES) refers to a lower standing in these areas and an overall low household income. It is associated with increased risk for health problems, limited resources, and thus a reduced quality of life (American Psychological Association, 2023). Additionally, patients residing in lower socioeconomic areas have been found to start cancer treatment later and have an increased risk of death compared to those in higher socioeconomic neighborhoods (Hernández Nielsen, 2024).

Low socioeconomic status (SES) significantly impacts leukemia outcomes, contributing to both higher incidence and mortality rates. Patients from lower SES backgrounds often face delays in treatment initiation, which in turn leads to poorer prognosis. For example, children experiencing extreme poverty during maintenance therapy for acute lymphoblastic leukemia (ALL) have a 1.9-fold higher risk of relapse compared to their peers from more stable economic

backgrounds (Abrahão et al., 2015). Furthermore, individuals residing in lower-income communities are more likely to experience delays in cancer treatment and face a heightened risk of mortality compared to those in higher socioeconomic areas (Kaplan, 2023).

There is a critical need for targeted interventions to address SES-related disparities in leukemia care and outcomes. People with lower SES also have reduced access to healthcare resources, which leads to delays in diagnosis and treatment, affecting survival rates (Jibb et al., 2024). Studies have shown that patients with ALL treated at dedicated centers of excellence have improved survival outcomes, independent of their race or income (Johnston, 2024). This suggests enhancing access to specialized treatment facilities could mitigate some SES-related disparities.

Medication adherence is another critical factor influenced by socioeconomic and cultural elements. In a multiracial cohort of children with ALL, adherence rates were significantly lower among African American (87%) and Asian American (90%) patients compared to non-Hispanic white patients (95%). Adherence rates below 90% were associated with a 3.9-fold increased risk of relapse. Cultural factors, including health beliefs and family dynamics, can also impact adherence to treatment protocols (Bhatia, 2014).

Cost of Treatments

When approaching cancer treatment for those who are low-income, multiple variables must be taken into consideration: direct and indirect costs of treatment, further financial barriers, and available resources. The cost of cancer treatment can be expensive and ongoing, depending on treatment type and results through care. Medical assistance programs, such as Medicaid, vary in the payment provided for health care costs across U.S. states. Distance from and transportation to treatment can be an additional cost. Further financial barriers can be attributed to income loss

due to illness. Similarly, insurance limitations can incur additional unexpected costs. In varying situations, means for child care throughout treatment, as well as food and housing costs, can require attention in order to avoid adverse struggles.

Leukemia is very expensive to both the healthcare system and patients. On average, annual allowed spending for leukemia treatment is \$156,00 per patient in the initial year following diagnosis. High spending occurs in the month after a patient is diagnosed, with allowed spending ranging from \$12,000 to \$117,000, with patient out-of-pocket costs peaking in this month (Dieguez et al., 2018). Patient out-of-pocket costs largely depend on the type of plan they have at the time of diagnosis. Patients with high-deductible plans spent almost twice as much out-of-pocket costs as those with traditional plans. Of the allowed spending, anticancer drug therapies, such as chemotherapy or immunotherapy, accounted for one-third of the cost. Stem cell transplants contributed to one-fourth of spending (Dieguez et al., 2018). For patients with Medicaid, treatment benefits for cancer vary by state. Medicaid's coverage is comparable to basic private health insurance. However, each state's Medicaid program ensures coverage for inpatient, outpatient, laboratory, and x-ray services (FORCE, n.d.). Ongoing care, including medications, is covered by Medicaid as long as the manufacturer has a Medicaid rebate agreement (FORCE, n.d.). Still, Medicaid acceptance varies across cancer care facilities (Leapman, 2022). Transportation costs are a crucial hidden but direct cost of leukemia or cancer treatment. 20% of leukemia patients must travel more than 50 miles for care, alluding to costly and far travel for necessary treatment (Rotz et al., 2020). In most states, Medicaid covers non-emergency transportation, allowing sick patients to get to their appointments at no cost (FORCE, n.d.).

With low-income patients, a large financial barrier to consider when determining economic detriment is income loss due to treatment. The probability of employment drops nearly 10% following diagnosis (Zajacova et al., 2015). Similarly, patients lose 20% of their income (Alzehr et al., 2022). The loss of income is attributable to the patient's inability to work following diagnosis. Another barrier is childcare throughout treatment. A full day of eight hours of daily childcare averages an annual cost ranging from \$6,552 to \$15,600 for a single child. Part-day care for a single child averages between \$5,943 and \$9,211 annually. Childcare costs are primarily based on the child's age, region, and whether the care is offered in a center or a home. Preschool and toddler home-based care is overall the lowest cost option for childcare (Poyatzis & Livingston, 2024).

Environmental

Environmental Exposures

Environmental factors also contribute to leukemia risk, particularly exposure to short- or long-term radiation and a variety of toxic chemicals. These effects can have a significant impact on the long-term health of individuals exposed to radiation, and survivors of the Hiroshima and Nagasaki bombings show a significantly increased risk of developing AML (Douple et al, 2014). Medical radiation exposure, particularly during pregnancy or early childhood, is also a potential risk factor for leukemia (American Cancer Society, 2024). Exposure to industrial solvents like benzene and pesticides has also been associated with leukemia, particularly AML, ALL, and CLL (American Cancer Society, 2024). Occupational exposure to hazardous chemicals, including pesticides before conception or during pregnancy, or paternal exposure, has also been correlated with increasing leukemia risk (Spanoudaki et al., 2023).

Increased exposure to environmental risk factors is seen in low SES individuals, which may contribute to a higher incidence of leukemia. Lastly, financial strain and limited social support in low-SES populations can exacerbate stress and negatively impact mental health. There is a significant impact of socioeconomic status on survival from leukemia treatment and patient outcome. Higher SES and maternal education are related to stronger compliance with treatment and survival (Totdari et al., 2019).

Environmental factors, including radiation and exposure to certain chemicals, can increase the risk of developing diseases such as leukemia. Radiation exposure is a significant risk factor for leukemia. High amounts of radiation can raise an individual's risk for acute myeloid leukemia (AML), acute lymphoblastic leukemia (ALL), and chronic myeloid leukemia. This exposure could be from things such as an atomic bomb blast or previous radiation treatment from another cancer (University of Rochester Medical Center). Along with this, exposure to chemotherapy can be a significant risk factor for leukemia. Adults and children who have been treated with chemotherapy for other cancers have a higher chance of developing secondary cancers, such as acute myeloid leukemia (AML). Along with chemotherapy, exposure to certain chemicals, such as benzene, has been linked to a greater risk of this disease. However, chemical exposure correlates more with a greater risk of Acute Myeloid Leukemia than Acute Lymphoblastic Leukemia. Drugs such as cyclophosphamide, doxorubicin, etoposide, and teniposide have been shown to increase the risk of this disease as well. These types of leukemia tend to develop within five to ten years and can be much harder to treat (American Cancer Society, 2024).

WHAT IS NEEDED

A diagnosis of Leukemia requires numerous resources addressing all of the hardships that the patient may incur. For Anna, a 23-year-old single mother of two children, the recent diagnosis of leukemia has led to a unique set of struggles. Anna has shown to struggle financially, indirectly hindering her ability to receive adequate cancer care. To promise optimal wellness, a range of assistance pertaining to financial, emotional, nutritional, physical, and transportation needs is necessary to aid Anna and her family.

Financial Support

For leukemia patients, financial hardships can be incurred directly through treatment costs. However, financial struggles can also stem from the cost of food, transportation, and varying lifestyle costs. For Anna, a 23-year-old single mother of two children, the recent diagnosis of leukemia has led to a unique set of struggles. Anna has shown to struggle financially, which hinders her ability to receive adequate cancer care. Pertaining to Anna and her family, financial assistance can promise food security, treatment, and family wellness.

Studies on financial assistance programs exemplify how financial support can improve health and wellness. In terms of health specifically, financial assistance programs contribute to higher utilization of resources. A study on insurance-based financial assistance shows that upon approval for assistance, reception of inpatient services increased by 59%, reception of outpatient services increased by 20%, and reception of emergency services increased by 53%. Additionally, detection and management of conditions requiring treatment increased following approval for financial assistance (Adams et al., 2022). This shows that programs that alleviate financial burdens

contribute to increased healthcare usage and positive health outcomes. For Anna, this shows that assistance has the capacity to broaden her healthcare options and provide her with optimal treatment and reception of physical and emotional services.

Outside of direct healthcare treatment, financial assistance has increased the ability to allocate income to necessary incurred costs. Earned income tax credit (EITC) and Temporary Assistance for Needy Families (TANF) have been shown to increase revenue due to their coverage and assistance towards respective expenses. With assistance, the ability to obtain healthy food, utilize transportation, and access healthy resources is heightened. Additionally, aid reduces stress, therefore improving personal well-being (Finkelstein et al., 2022). For Anna, this indicates that financial assistance would provide her with an increased ability to afford varying costs, such as rent, utilities, and costs incurred with children. Anna would be able to receive necessary treatment with minimized stress, while simultaneously obtaining necessary resources that improve her and her children's health and well-being outcomes.

Any form of financial assistance would contribute to the betterment of Anna's current condition and financial standing. Financial assistance has the capacity to improve food accessibility, specialized healthcare attainment, and the ability to afford natural lifestyle expenses. Anna could benefit from low-income specific assistance programs and broad assistance programs, as both would be capable of decreasing the costs incurred by Anna's current health and financial condition.

Accessible Care

Following a diagnosis of any significant illness, in Anna's case, Leukemia, easily accessible care is essential to treatment and prevention of significantly adverse symptoms

or even death. Physician and treatment access can be difficult for someone like Anna, who has a lack of childcare for her children, is likely to maintain a job, and has difficulties with transportation. Many physicians' offices are open only during 9-5 work hours, during which Anna may be at work. Additionally, childcare arrangements are complex and may require her to bring her children to her appointments and treatment sessions, which may not be possible, especially if any treatments are performed within the hospital, as many hospitals restrict children under a certain age. Persistent doctor's visits often accompany a leukemia diagnosis, and Anna may not attend them if she cannot reliably access them, especially if there is a significant financial risk, such as losing her job. Thus, increased accessibility and flexibility would significantly help Anna's situation.

Primarily, physicians' offices that are open outside of regular working hours or have extended hours would be significantly beneficial to Anna. After-hours practices are easiest to implement in larger practices (O'Malley et al., 2012). Thus, it is likely feasible for the Piedmont Health system to implement this. As a result, Anna would not have to take time off work to be treated, and would likely have a higher rate of attendance at treatments and physician appointments.

Additionally, access to childcare would significantly increase Anna's likelihood of receiving healthcare. While many doctors' offices allow children to accompany parents, hospitals are much more strict with age restrictions due to dangerous circumstances for young children. Many leukemia treatments are performed in-hospital, limiting options for Anna, who has limited childcare. In this scenario, it would be extremely beneficial for hospitals to have free in-house childcare for patients receiving treatment, so that Anna's

children have a safe area to be while she is receiving care. Existing research emphasizes the importance of childcare within healthcare access and labels it as a clear barrier to care (McArthur et al., 2024). A lack of childcare access will significantly hinder Anna's treatment and recovery.

Transportation is an additional significant barrier to care in Anna's case. Although it is unspecified if she has a personal vehicle, due to her financial issues, it is likely that she either does not have a vehicle or that it is difficult to afford gasoline or the cost of upkeep. Thus, easy and reliable access to transportation would significantly improve Anna's outcome. Despite being free, the bus system is generally unreliable and may prove a difficulty in timely access to physicians' appointments. Additionally, she may not have access to a bus stop depending on where she lives. Thus, implementing reliable transportation, such as an improved bus system, a train or tram system, or a rideshare program, may significantly benefit Anna's care and health outcomes.

Social and Emotional Support

Along with financial support and accessible care, most leukemia patients will need some sort of emotional support. With any cancer diagnosis comes some kind of emotional hardship. This hardship must be addressed, and emotional support is required for the patient and those surrounding them. Specifically, addressing Anna's emotional well-being through social connections and support is necessary. The emotional burden of battling leukemia, especially as a single mother, can be overwhelming. Without nearby family, Anna may feel isolated, making it critical for her to have access to a supportive community. Peer support groups, either in person or online, can provide a sense of connection with others facing similar challenges. The Leukemia and Lymphoma Society

provides support groups that offer mutual support and the opportunity to discuss anxieties and concerns about this disease with individuals who share the same experiences (Leukemia and Lymphoma Society, n.d.). These support groups have shown that sharing strengthens the family bond and enhances every individual's ability to cope with cancer (Leukemia and Lymphoma Society, n.d.).

Along with support groups, emotional support can include peer support and individual counseling. Individuals battling leukemia can find a safe place to talk to others, share experiences, and get personal advice (Leukemia Research Foundation, n.d.). by connecting with other patients or caregivers. One-on-one counseling is also recommended as a way to gain emotional support during a cancer diagnosis. Individual counseling can allow patients to have the chance to focus on their feelings and concerns, and has been shown to benefit the patient significantly (Leukemia Research Foundation, n.d.). Several organizations and cancer support networks offer services that can help combat loneliness and simply help emotionally. These social connections and emotional support systems are vital for assisting Anna to cope with the mental and emotional strain of her diagnosis while also allowing her to maintain her strength as a mother during this difficult time.

Additionally, many cancer patients undergo chemotherapy, which takes an emotional and physical toll on the body. The adverse effects of chemotherapy could be adding to Anna's lack of well-being during this diagnosis, leading to the need for more emotional support. A study showed that a positive mental intervention not only relieves the negative emotions a patient might have after receiving chemotherapy for leukemia but also improves their coping system. Specifically, the Rosenthal effect improves the

post-traumatic growth level of patients after receiving chemotherapy, relieves anxiety and depression, enhances coping style, and helps with physiological and psychological recovery (Wei & Li, 2022). Therefore, developing positive mental intervention methods can be critical for improving leukemia patients' well-being (Wei & Li, 2022). This can significantly benefit Anna's mental health and allow her to find beneficial emotional support.

Nutritional Support

Nutrition is a crucial component of overall health, particularly for individuals who are immunocompromised due to rigorous medical treatments such as chemotherapy, and for children experiencing essential developmental growth stages. For Anna, navigating the challenges of leukemia treatment as a single mother with limited financial resources, maintaining proper nutrition for herself and her two young children becomes even more important. A balanced diet is fundamental not only for improving her body's physical tolerance to chemotherapy and enhancing immune function during treatment, but also for positively influencing mental health by reducing stress, increasing physical strength, and supporting emotional stability during this challenging period (Munteanu et al., 2022; Lifshitz, 2009).

Chemotherapy is a severe medical treatment that significantly impacts patients' nutritional needs due to increased metabolic demands and potential treatment-related side effects such as nausea, loss of appetite, taste changes, and fatigue (Milliron et al., 2022). Adequate nutrition is essential throughout such severe treatments to support the healing process, reduce the risk of infection, and improve treatment effectiveness. Proper dietary intake can also help reduce common side effects of chemotherapy, such as mitigating

fatigue, helping sustain energy levels, and strengthening the body while healing and recovering post-treatment (National Cancer Institute, 2024a). Nutritional support has been shown to enhance overall quality of life by promoting faster recovery, improving physical function, and increasing patient tolerance to chemotherapy regimens (Munteanu et al., 2022).

Furthermore, maintaining nutritious eating habits is intricately connected to mental health and emotional well-being. Good nutrition can help lower stress and anxiety levels, conditions commonly heightened by chronic illnesses like cancer and rigorous medical treatment schedules. Nutrients play a crucial role in neurotransmitter regulation and hormonal balance, directly impacting mood, emotional stability, and resilience in the face of health-related adversity (Muscaritoli et al., 2021). Particularly for Anna, who faces both the physical strain of leukemia treatments and the psychological stress of parenting alone without familial support nearby, nutritional adequacy can offer significant emotional and mental health benefits, aiding in better management of anxiety and depressive symptoms associated with her diagnosis and treatment.

Additionally, the nutritional requirements of young children are critical during their prime developmental years, especially with children as young as Anna's who have not yet reached school age. Proper nutrition ensures optimal growth, strengthens immunity, and supports cognitive development and emotional stability, providing a better foundation for their long-term physical and mental health outcomes (Lifshitz, 2009). Given that Anna's chemotherapy treatment and associated side effects may limit her ability to earn an income due to her lack of ability to work during treatments, as well as her limited physical capability to frequently shop for groceries and prepare meals, there is an

amplified risk of food insecurity and nutritional inadequacy for her family. Anna may experience fatigue, physical weakness, or scheduling conflicts with medical appointments that hinder her ability to consistently provide balanced meals for her or her two children, since she is the sole caretaker without any nearby supporting family. Therefore, accessible nutritional support services and programs are essential resources to ensure affordable nutritional adequacy for Anna and her family.

Physical Support (Childcare)

Along with the need for social connections and support for Anna's emotional well-being, physical support for non-medical expenses is necessary. Recent research supports the need for the mentioned physical support. A systematic review draws attention to the significant financial toxicity experienced by cancer patients, highlighting that non-medical costs such as transport, childcare, and lost income contribute significantly to this burden. The review found that these costs are often not covered by insurance, leading to high out-of-pocket expenses that can detrimentally affect patients' psychosocial well-being and access to care (Ehsan et al. 2023). Since Anna is 23 years old, did not finish college, and has two small children who are not school age, she not only needs to worry about the medical expenses that come with this diagnosis, but also the non-medical expenses. Anna's parents are not nearby and cannot watch her children, so she struggles to find inexpensive childcare. Not only does she struggle to find the time and money to take care of her children, but she also struggles to provide exercise and playtime for them. Resources and organizations are necessary for her to receive this care for her children while she is undergoing cancer treatments. Along with childcare, Anna will need help finding affordable transportation to obtain her required treatments. Several

organizations provide transportation, meals, and support groups that can aid Anna with these things. Affordable transportation and childcare support are necessary for Anna as she undergoes her diagnosis of leukemia. In addition, a University of North Carolina at Chapel Hill study emphasizes the profound impact of non-medical expenses on young adult cancer patients. The study further notes that childcare and transportation expenses can be "life-changing," with the potential to disrupt treatment adherence and overall quality of life. It recommends the development of financial literacy resources and support networks tailored to the unique needs of this population (Wingate, 2024).

There is a need for holistic non-medical support, like affordable child care and transportation services for young adults, such as Anna, who is in cancer treatment.

ASSET MAP

Emotional and Mental Wellbeing Support Resources

Leukemia is not only a physically demanding diagnosis but one that carries a significant emotional and mental burden, especially for a patient in Anna's position. Anna is a young, single mother of two young children, with limited financial support and no nearby family, while navigating a life-altering diagnosis. The overwhelming nature of any cancer diagnosis, in addition to the physical toll of treatment, with the responsibility of caregiving and economic hardship, puts her at high risk for emotional distress, anxiety, and feelings of hopelessness or isolation. Several local and national resources are available free of charge to support Anna and her children's emotional wellbeing, flexible to their unique situation and needs.

Loran Smith Center for Cancer Support

The most local resource available to Anna and her family is the Loran Smith Center for Cancer Support, located at Piedmont Athens Regional. This is a central resource center that offers a variety of free services designed to support cancer patients' mental, emotional, and spiritual health in Athens. Since Piedmont is the designated hospital accepting Medicaid insurance in Athens, Anna will be receiving care at Piedmont, so she will be introduced to these services in person during her treatment, making this a highly accessible option. Licensed clinical social workers provide illness adjustment counseling, offering one-on-one support to address stress, anxiety, treatment decision-making, and family communication. Given her limited transportation options and childcare responsibilities, these sessions are available in person, over the phone, or via telehealth, which is essential for Anna. The center also facilitates a Women's Cancer Support Group, meeting monthly in a safe, confidential space to connect women facing any type of cancer diagnosis. This setting would allow Anna to share her experiences and receive encouragement from others navigating similar challenges. While transportation and childcare may make attending in-person sessions difficult, phone or virtual connection participation could still provide emotional support without the added strain of travel (Piedmont Healthcare, 2025).

In addition to counseling and support groups, the Loran Smith Center offers wellness-based classes aimed at reducing stress and supporting overall well-being. The Mindfulness for Mind and Body program teaches guided imagery, breathwork, and body awareness techniques to help manage anxiety, depression, pain, and insomnia. Similarly, the T'ai Chi class, held weekly, incorporates gentle movement and meditation to support mental clarity and physical healing. Though these are offered during weekday hours,

which may conflict with caregiving or work obligations if Anna continues to work through treatment, their physical and emotional benefits could be substantial if she can attend. If Anna can travel to this support center physically, the site also contains the Piedmont Auxiliary Healing Garden. This garden offers three acres of green space open to patients of Piedmont and their community, allowing Anna and her children to visit for moments of reflection, peace, or recreation. Though it might seem unappealing to spend additional free time at the hospital, given how much time Anna and her family will already be there for treatment, the garden's meditation labyrinth, children's playscape, and pollinator gardens offer a peaceful outdoor sanctuary, providing a break from the clinical environment and a restorative space for her family (Piedmont Healthcare, 2025).

CancerCare

Beyond local resources, several national organizations provide free virtual counseling, education, and peer support that Anna can access from home. CancerCare, a nonprofit serving people affected by cancer, offers telephone and online counseling with professional oncology social workers. These sessions are available in English and Spanish and are tailored to help patients manage the emotional and logistical challenges of living with cancer. CancerCare also facilitates virtual support groups, enabling Anna to connect with others in similar circumstances to exchange support, share coping strategies, and feel less alone. These groups are flexible and accessible, making them easily accessible while Anna simultaneously navigates treatments, doctors' appointments, and caring for her two children (CancerCare, 2025).

Additionally, CancerCare provides free Connect Education Workshops, where oncology professionals discuss current challenges in cancer care. Anna can attend these

live or listen to past recordings on her own time, helping her better understand her condition and prepare for her management of the disease. This organization also publishes easy-to-read educational materials on emotional health, caregiving, and managing side effects to improve awareness of her condition and proper management (CancerCare, 2025).

Leukemia & Lymphoma Society

The Leukemia & Lymphoma Society (LLS) offers similar support, including the First Connection Program, which matches patients with trained volunteers who have undergone a similar cancer experience. This direct peer-to-peer support is done free of charge through the phone, which can be incredibly valuable for Anna, offering firsthand insight and emotional encouragement from someone who truly understands what she is going through. This can provide insightful advice learned by others who have faced the same challenges, in addition to providing support to combat any feelings of isolation or hopelessness, as Anna will seek support from a survivor on the other side of the challenge. LLS also provides free educational podcasts, such as The Bloodline and Bloodline Breakthroughs, which Anna could listen to during rest periods, treatment, or at home with her children. These episodes feature insight from medical professionals and survivors, offering practical guidance and inspiration (The Leukemia & Lymphoma Society, 2025).

Camp Kesem

While Anna is facing the physical and emotional toll of leukemia, her two young children are also navigating the uncertainty and stress that comes with having a parent with cancer. Camp Kesem is a free, nationwide program that provides week-long

overnight summer camps and year-round emotional support for children ages 6–18 who have a parent affected by cancer. The camp experience offers children a chance to connect with peers, express emotions in a safe space, and experience the joys of childhood despite difficult circumstances. With trained volunteers, structured activities, and on-site meals, Camp Kesem provides a safe and joyful environment where Anna’s children can feel seen, supported, and less isolated through community building with children facing the same challenges.

Throughout the year, Kesem hosts “Friends and Family Days” at local venues and Club Kesem virtual events, giving families ongoing opportunities to connect with others who share their experience. Additionally, “Kesem By Your Side” offers personalized emotional support for children during significant challenges such as difficult news, a parent’s recurrence, loss, or treatment milestones. Many of Kesem’s services include transportation assistance and are entirely free, making this a realistic and impactful form of support for Anna’s children. There is also a Kesem chapter at the University of Georgia, so many events would be available locally within Athens, and events requiring transportation to farther distances would provide transportation from the centrally-located UGA campus (Kesem, 2025).

Look Good Feel Better

In addition to emotional challenges, cancer treatment often alters physical appearance, which can affect self-esteem and body image. “Look Good Feel Better” is a unique online program that helps women undergoing cancer treatment manage these changes through free virtual workshops focused on skincare, makeup, wigs, head coverings, and clothing tips. Anna could attend these sessions from her home, where

she'll learn in her environment how to care for her skin, adjust to hair loss, and dress for physical changes like infusion ports or weight fluctuation. In addition to the practical information, these workshops provide a sense of community and encouragement, as participants learn alongside other women navigating similar experiences, making the experience feel a little less isolating or vulnerable. The only available in-person workshops are several hours away, but Anna can still access a wide range of digital beauty and wellness guides on the program's website. Feeling comfortable and confident in her appearance can help Anna reclaim a sense of self during treatment, improving her emotional wellbeing and resilience (Look Good Feel Better Foundation, 2025).

Ebeauty

The website "Ebeauty" also addresses the often-overlooked emotional impact of hair loss during cancer treatment by offering free wigs to women like Anna. This service is available to any woman undergoing a medical condition that results in hair loss, including Anna, who will face hair loss as she undergoes chemotherapy for leukemia. While the closest in-person fittings are available in Charleston, SC, and Nashville, TN, requiring a significant drive, there is an option to receive the service online. EBeauty's online ordering system offers a more convenient alternative in which dedicated volunteers will work with the patient to find a wig of the appropriate look and fit, eliminating travel challenges and accommodating Anna's potential childcare and treatment constraints (EBeauty Community, 2025).

Financial Resources

Specific governmental resources are intended to aid those in need regarding low-income illnesses. Government resources such as Temporary Assistance for Needy Families (TANF) and

Medicaid waivers can offer direct aid to families with one suffering from an illness. Additionally, programs such as the Supplemental Nutrition Assistance Program (SNAP) can offer aid for costs incurred indirectly by treatment.

Temporary Assistance for Needy Families

Temporary Assistance for Needy Families (TANF) is a monthly cash assistance program for families in financial need. It is specifically intended for families with children, in order to benefit the children's outcomes of being in need. TANF also aims to reduce the dependency of financially struggling single parents. To be eligible for TANF, families must qualify as low-income, have children under eighteen, have the long-term absence of one parent, and must cooperate with the Georgia Department of Human Services (DHS) and the Division of Child Support Services (DCSS). In Anna's case, she is low-income, has two young children under eighteen, and is a single parent, making her eligible. To apply for TANF, one must either print an application off the DHS website and mail it to their local Division of Family and Children Services office or apply online through the DHS website (<https://dfcs.georgia.gov/services/temporary-assistance-needy-families>). If Anna is able to complete the application, TANF can aid her in household costs in order to support her children. This includes various costs, including rent, utilities, food, and even minor expenses such as new clothes for her growing children. Therefore, in the face of financial burdens that cancer imposes, TANF would allow Anna to maintain her children's safety, happiness, and health.

Medicaid Waivers

Medicaid waivers serve as assistance at little or no cost for individuals by providing services in their homes or communities instead of placing them out of their homes in institutions. Waivers can cover a range of services, including medical and non-medical care. These waivers

intend to amplify the resources of those unable to serve themselves sufficiently. To be eligible, one must meet disability requirements under the Elderly and Disabled Waiver Program (EDWP) or the Independent Care Waiver Program (ICWP). Additionally, one must be eligible for Medicaid if they are not already on it. To apply for EDWP or ICWP, Alliant Health Solutions must be contacted by phone at 800-982-0411 or 888-669-7195 for a screening. Based on this screening, eligibility and services are determined. For Anna, the direction of her illness determines her eligibility for Medicaid Waivers. Cancer progression can become debilitating, making it often seen as a disability in the state of Georgia since it prevents daily tasks and employment. With no partner or familial support, Anna could benefit from a waiver in her community and home health goals. In the case of Anna's condition worsening, she could require at-home care. With home health care, Anna's children wouldn't be unnecessarily displaced, as they would if she had to be taken into a more long-term care/treatment facility. Additionally, the low or no cost of the waiver allows Anna to allocate her monetary resources to livelihood costs that don't pertain to her medical condition.

Supplemental Nutrition Assistance Program

The Supplemental Nutrition Assistance Program (SNAP) provides low-income individuals and families with supplementary funds to contribute to their grocery budget. SNAP intends to increase low-income families' overall health and well-being through access to nutritional foods. The general requirements for SNAP eligibility are that the head of household must have considerably low gross and net income and be 100% of the federal poverty level. The application is available online through a form on the Georgia Division of Family & Children Services' website (<https://dfcs.georgia.gov/snap-food-stamps>) or through a phone number listed on the site (877- 423-4746). For Anna, SNAP can serve as a resource to allow her and her

children consistent access to food. Struggling financially and having two children, Anna is a strong contender for receiving SNAP benefits. In the face of numerous potential costs from treatment, childcare, and life costs, SNAP can serve as a promising, free source that ensures a lack of hunger within Anna's family.

Leukemia & Lymphoma Society

Another relevant support resource for Anna is The Leukemia and Lymphoma Society (LLS), which offers a variety of programs aimed at lessening the financial and emotional burdens associated with a blood cancer diagnosis. There are multiple ways to access the Leukemia & Lymphoma Society (LLS), either by visiting www.lls.org for comprehensive information on programs, resources, and support services or by calling 1-800-955-4572. The Georgia Chapter of LLS serves residents throughout the state, including Athens. While the main office is in Atlanta at 2859 Paces Ferry Road SE, Suite 725, Atlanta, GA 30339, support is available statewide. Through the Co-Pay Assistance Program, LLS can assist with out-of-pocket costs related to insurance premiums and treatment-related co-pays, such as prescription drugs and diagnostic tests. This is especially helpful for low-income individuals like Ana, who may struggle to balance these costs with daily living expenses. Additionally, the Patient Aid Program offers a one-time \$100 stipend that can be used for non-medical costs like transportation, food, and housing expenses that are often neglected but critical for overall well-being. For long-term planning, the LLS Scholarship for Blood Cancer Survivors can be particularly beneficial for Ana's children if they are ever affected by cancer, as it offers up to \$7,500 in tuition assistance. LLS also provides emotional support through caregiver support groups, which could offer Anna a space to connect with others in similar situations. In cases of outstanding medical debt from leukemia or lymphoma treatment, the Urgent Need Program may serve as an emergency

financial lifeline. CancerCare, a Warner Robins, GA, partner organization, offers free professional counseling and financial assistance.

While LLS offers support for leukemia patients, there might be limitations based on income thresholds or specific treatment stages. For example, they often assist people who are undergoing active treatment. If Anna is not yet receiving the level of therapy covered by LLS or if their financial assistance criteria do not align with her needs, she may not be able to access the full benefits (Leukemia & Lymphoma Society).

Cancer Financial Assistance Coalition

The Cancer Financial Assistance Coalition (CFAC) is a valuable resource that connects patients like Anna with a broad network of organizations dedicated to alleviating the financial hardships associated with cancer care. Those seeking financial assistance for cancer-related expenses can access the Cancer Financial Assistance Coalition (CFAC) through its online platform, www.cancerfac.org. CFAC has no direct contact number, as it primarily functions as a resource hub. For personalized support, Anna can connect with member organizations listed on the CFAC website, which offer various forms of financial aid and guidance. As a collaborative of national organizations, CFAC provides centralized access to financial aid programs for housing, transportation, treatment, medication, and daily living expenses. In addition to direct support, CFAC offers educational tools to help patients better understand and navigate the complex financial landscape of cancer treatment. For someone like Ana, who is balancing her leukemia diagnosis with the responsibilities of being a single mother and managing limited income, CFAC serves as both a practical and emotional lifeline. By connecting her with coordinated services and resources, CFAC helps reduce the financial burden and the overwhelming stress often accompanying serious illness.

The programs available through CFAC are sometimes limited by geographic location, and certain financial assistance programs may not apply if the specific financial need does not fall within the approved categories. For example, rent vs. treatment co-pays. Additionally, CFAC typically helps with costs directly related to the medical treatment, so they may not assist with things like general living expenses or childcare costs, which are pressing issues for Anna (Cancer Financial Assistance Coalition).

Cancer Foundation of Northeast Georgia

The Cancer Foundation of Northeast Georgia is a private, non-profit organization that alleviates financial burdens among those struggling financially following a cancer diagnosis. It is located in Athens and can be contacted by phone at (706-353-4354). The Cancer Foundation of NEGA serves 25 counties in the Northeast Georgia region, including Athens-Clarke County, Oconee County, and Oglethorpe County. Additionally, eligibility criteria extend to the family's income level being within 250% of the FPL, and recent income is utilized to assess need. This would be around \$39k a year for a family of one, increasing with family size. The income limit to qualify for a three-person family would be around \$66k. This resource can be applied for online on their website. The foundation's financial assistance is up to a one-time payment of \$1000 to any area that is needed the most, such as housing, utilities, and transportation expenses. While \$1000 is not enough money to help significantly with the financial burden of a cancer diagnosis, the aid would be beneficial for families who are struggling financially in cases like Anna's. The \$1000 could assist in paying rent or providing food for the family. Additionally, the foundation offers nutritional support, and those eligible may pick up shelf-stable food items weekly, which greatly assists those struggling to afford food.

Rx Assist

Rx Assist is an online directory of patient assistance programs run by pharmaceutical companies to assist families who need medications and cannot afford them. It can be accessed online at www.Rxassist.org. While Rx Assist is not a financial program, it is an extensive database that patients can utilize to locate prescription assistance programs. The database is a simple search for any medication, and a list of pharmacy retailers who provide the medication is obtained. The database is concise and practical with its results, specifically listing out the dosages, the prices of each quantity, the brand name, the retailer, the location, and the specific program details. Additionally, their website has multiple brochures and articles about medication assistance programs and drug discounts. Typically, patient assistance programs require those who participate to be U.S citizens or legal residents and to meet the income guidelines, which vary per Rx program. However, requirements vary, and some programs may not be available due to Medicaid coverage. Despite this, those struggling with cancer diagnoses and who are covered by Medicaid could find benefits within this directory. A directory to Rx assistance programs would be highly beneficial to those struggling with a problematic and treatment-heavy disease, such as Leukemia or other cancers. Cancer diagnoses are often accompanied by expensive prescription medications that may be difficult to afford if prescription insurance is lacking or if there are extreme financial struggles. Applications to these programs are often free of charge and are relatively accessible to those struggling to find affordable prescription medications.

Support for Non-Medical Expenses

Leukemia is a disease that comes with several medical expenses, including different treatment options and specialty care. However, this disease comes with non-medical costs such as childcare and transportation. Since Anna is a single mother with two young children and struggles financially, she has limited options for affordable childcare and transportation to her

treatments. Several organizations and programs allow individuals to access childcare and transportation services at a lower cost. Specifically for Anna, the Athens Area Homeless Shelter and the American Cancer Society provide financial and some emotional support for these non-medical expenses. These programs can offer helpful resources to Anna and her children as she undergoes her cancer diagnosis.

Athens Area Homeless Shelter

The Athens Area Homeless Shelter program believes every child should have safe and stable housing. Its mission is to provide collaborative services to homeless individuals and families working toward sustainable independence. Individuals can seek shelter options in Athens, Georgia, through the website (<https://www.helpathenshomeless.org/>) or by contacting them at 706-354-0423. Athens Area Homeless Shelter (AAHA) can help Anna and her children have a stable and safe place to live while she is receiving treatment. In addition, volunteers provide an evening meal for Athens Area Homeless Shelter families every day of the year. This option can prevent stress for Anna when thinking about what she will do about dinner every night for her children. Additionally, AAHA has a Spend Time with Kids Program where volunteers can allow kids to play outside while their parents can get much-needed rest. This program happens every Tuesday from 5:00 to 7:00 p.m. at the ARCH Village housing site and Thursday from 5:30 to 7:00 p.m. at the Barber Street Emergency Shelter. This option can allow Anna time to receive treatment or rest while providing her children exercise and outdoor time. These services provided by the Athens Area Homeless Shelter can significantly help Anna find affordable childcare for her two young kids.

American Cancer Society

The American Cancer Society is a non-profit organization with a vision to end cancer and help improve the lives of people with cancer and their families through advocacy, research, and patient support. It works to ensure that everyone has an opportunity to prevent, detect, treat, and survive cancer (American Cancer Society, n.d.). Specifically, the American Cancer Society has a program called the Road to Recovery that provides free rides to treatment for cancer patients. It has been shown that transportation barriers are the number one reason for missed cancer appointments. Due to this, Anna must have access to affordable transportation services to receive her treatment. The Road to Recovery Program can give Anna the services for this and make it one less thing for her to worry about throughout this process. Anna can contact this program by calling 1-800-227-2345 or getting more information on the website (https://www.cancer.org/involved/volunteer/road-to-recovery.html?utm_source=google&utm_medium=cpc&utm_campaign=road_to_recovery_search&gad_source=1&gclid=Cj0KCQjw16O_BhDNARIsAC3i2GDEaXHu_Z-9oQ3-VE8XFlo6NxjSkjuFaMkkF61lvwIdTC2XESS8XmsaAj4aEALw_wcB) (American Cancer Society, n.d.).

In addition to the Road for Recovery Program, the American Cancer Society has Hope Lodge Communities. Hope Lodge Communities provide free lodging for cancer patients who must travel when treatment is far away from home. Additionally, Hope Lodge volunteers support patients with daily activities, provide entertainment, plan special events and activities, and improve the facility and grounds. Hope Lodge can give Anna a community during this challenging time in her life. It can also allow her another option for transportation to treatment and emotional support during her diagnosis. Anna can find more information about Hope Lodge and the different locations on the website

(<https://www.cancer.org/support-programs-and-services/patient-lodging/hope-lodge.html>)
(American Cancer Society, n.d.).

SUSTAINABLE SOLUTIONS

Leukemia requires medical treatment that can lead to a multitude of health outcomes. Therefore, a solution cannot be found directly through the positive treatment outcomes. However, notable sustainable solutions can be derived from the external factors that impact leukemia treatment. Healthcare and childcare costs are overwhelming for those undergoing treatment, adding additional concerns to the patient outside of their well-being. Additionally, a lack of transportation and health education can further impact healthcare outcomes. Universal healthcare, Medicaid expansion, universal or income-based childcare, widespread healthcare transportation, and health education initiatives serve as sustainable solutions that would allow leukemia patients to receive treatment with minimal external stress, setting the patient up for long-term success in wellness.

Universal Healthcare

Universal healthcare is an integrated system to which all United States residents would have complete access to healthcare services, regardless of interpersonal and intrapersonal factors. This means that all people within the region would have a full range of accessible services, including health promotion, treatment, rehabilitation, and palliative care (WHO, n.d.). Universal healthcare in the U.S. can alleviate financial and emotional strain and offer attainable resources for leukemia patients and their children. For those with complex external struggles, universal healthcare would provide all aspects of care necessary to facilitate well-being.

To combat financial struggles following diagnosis, universal healthcare directly alleviates the associated economic burden. Without universal healthcare, treatment is limited by medical coverage. With insurance or Medicaid, treatment is determined by what insurance or Medicaid will cover and what insurance carriers or Medicaid deem medically necessary. Additionally, treatment is determined by whether or not providers accept the patient's insurance. Under universal healthcare, providers do not have to worry about payment coverage, as they are paid valuable wages. Overall, universal healthcare offers patients a broader range of care options, allowing them to make direct decisions in their care. For low-income Americans, universal healthcare would provide this coverage regardless of income qualifications. Therefore, those eligible for low-income-based insurance programs would not have to worry about maintaining eligibility in the presence of universal healthcare.

Cancer diagnosis and treatment coincide with emotional detriment. To address emotional struggles through diagnosis, universal healthcare would allow for complete access to psychiatric or psychological providers. Similar to medical treatment, universal healthcare offers an unlimited scope of care regardless of insurance coverage. This broadens the options for emotional care, allowing patients access to any professional they deem appropriate for their care. Additionally, this exemplifies how universal healthcare can improve cancer patients' wellness outcomes aside from medical treatment.

Universal healthcare has the capacity to address the growing chronic disease crisis, mitigate economic costs, limit socioeconomic health disparities, and increase opportunities for preventative healthcare (Zieff et al., 2020). This exemplifies how universal healthcare can alleviate financial concerns that cancer imposes, reduce disparities in diagnosis, and increase services that can lessen cancer prevalence. For cancer treatment, a comparative study showed

that cancer patients under a universal healthcare system contributed to a much lower age-standardized mortality rate (Wang et al., 2024). Universal healthcare has shown to directly contribute a .9% annual decrease in cancer induced mortality from 1990 to 2019 (Wang et al., 2024). Therefore, a universal healthcare system contributes to improved and valuable health outcomes in the face of cancer. In our current healthcare system, low-income patients often suffer due to a lack of insurance coverage. However, a European study shows that low-income patients are not undertreated in the presence of a universal healthcare system. Among low and high-income patients, surgical treatment adherence was 92.5% and 94.5%, respectively (Grosso et al., 2022). This shows that low-income patients do not experience a disparity in treatment attainment in a universal healthcare system. Additionally, the study noted no difference in time from diagnosis to treatment across varying income groups (Grosso et al., 2022). This further exemplifies the elimination of cancer treatment disparities across income groups in a universal healthcare system.

The United States' current healthcare system facilitates an increased focus on the type of coverage, poor cancer treatment options, and poor patient well-being, furthering adverse health outcomes. Cancer treatment requires a united and multidisciplinary approach, including various specialists and comprehensive care. Implementing a universal healthcare system would provide an integrated system, allowing all U.S. patients the same access to optimal care and an equal chance at achieving positive health outcomes.

Expanding Medicaid

Medicaid is a government program that provides health coverage to low-income individuals and families. All states can qualify for Medicaid based on income, household, disability, family status, and other factors. Eligibility differs by state, but in states with expanded

Medicaid coverage, one can qualify solely based on an income below 133% of the federal poverty level. Expanding Medicaid would provide crucial support for individuals who are struggling financially as well as facing serious health challenges, such as low-income single parents, people with chronic conditions, or those who have been diagnosed with life-altering conditions like cancer. Medicaid offers access to essential services, including treatment, medications, and care by a specialist, which is necessary for those who cannot afford private insurance or out-of-pocket healthcare costs. The expansion of Medicaid would help people who are going through financial struggles because of medical needs and would allow them to shift their focus toward their recovery and not constantly worry about how to afford the care they desperately need. Expanding Medicaid will make sure that these vulnerable and underserved individuals have the opportunity to receive the treatment and care they need to improve their health outcomes.

Medicaid is a government program that provides health coverage to low-income individuals and families (HealthCare.gov, 2025). All states can qualify for Medicaid based on income, household, disability, family status, and other factors. Eligibility differs by state, but in states with expanded Medicaid coverage, one can qualify solely based on an income below 133% of the federal poverty level (HealthCare.gov, 2025). Expanding Medicaid will also create a healthier and more productive society and improve economic outcomes for all. This is because people can maintain employment and support their families while reducing the strain on safety net programs such as SNAP, Women, Infants, and Children, Supplemental Security Income, etc. People who are healthy and have adequate access to care are less likely to rely on emergency services or public assistance.

Georgia has not fully expanded Medicaid under the Affordable Care Act (ACA), which leaves around 1.2 million residents uninsured. According to research, Medicaid expansion reduces mortality rates among low-income adults (Lee et al., 2022). Medicaid coverage also increases healthcare usage and improves financial security with increased access to care and a reduction of out-of-pocket costs (Long et al., 2005). On an institutional level, Medicaid improves hospitals' financial aspects by reducing uncompensated care costs, enhancing the system's sustainability (Kaiser Family Foundation, 2023). Hospitals in expansion states experience fewer financial losses. These findings demonstrate that expanding Medicaid provides a crucial safety net for low-income people and improves their economic and health well-being.

Health Education

Health education is crucial in improving community well-being by promoting knowledge and healthy practices across all ages and demographics. It addresses various health issues, from chronic diseases to mental health, and influences economic and policy outcomes. Since health education seeks to identify problems and improve a community's well-being, it impacts many areas of wellness, such as chronic disease awareness and prevention, injury and violence prevention, maternal and infant health, mental and behavioral health, and tobacco and alcohol use. Healthcare disparities can be lessened by health education, which provides educational resources and programming to a community. Health education can also extend into policy and legislation development at the state, local, and national levels, educating and influencing key decisions about community health. Additionally, health education can help benefit a community's economy by reducing lost productivity due to preventable illness and minimizing healthcare spending. Health education is critical to a healthy and beneficial community (Gagnon, 2025).

Many programs offer health education in which individuals can learn how to make essential decisions and adopt behaviors that lead them to healthier lives. Advantage Behavioral Health Systems, located in Athens, GA, provides person-centered treatment and recovery support to individuals and families experiencing behavioral health challenges. ABHS offers health education groups that implement recovery-oriented and person-centered care. This allows patients and their families to have the opportunity to learn and gain knowledge about personal health issues within a group setting (Advantage Behavioral Health Systems, 2023). Additionally, Piedmont Hospital in Athens, GA, has several wellness programs to improve the community. Programs such as Health Matters in a Community, Health Matters for Families, Health Matters for Work, Safe Kids Athens, and much more all work to better the community of Athens, GA, and allow individuals to have the opportunity to have the knowledge needed to better their health (Piedmont).

Research has shown the beneficial effects of health education for individuals. Health education is a critical consideration in the healthcare system and can improve global health. Health education programs have positively impacted attitudes and behaviors regarding global health. Specifically, evidence has shown that health education can become a significant aspect of recovery and therapy for patients with physical and mental conditions. These educational programs can influence lifestyle changes in patients suffering from chronic illnesses. With further research and improvements, health education can help ensure that interventions and programs can significantly impact a patient's recovery, life, and health (Rizvi, 2022). Additionally, much research has been done on the link between health and education for individuals. Programs that help close the gap in educational outcomes between low-income or racial and ethnic minority populations and higher-income or majority populations are essential to

promote health equity. Several public health benefits can come from implementing these educational programs for individuals (Hahn & Truman, 2015).

Transportation

Lack of adequate and accessible transportation often creates a significant barrier to accessing healthcare. It is usually a large determining factor in missed physician appointments and the likelihood of returning to the doctor (Wolfe et al., 2020). Practical and convenient transportation is significantly lacking in the United States and outside major hub cities (Prieto-Curiel & Ospina, 2024). In Athens, GA, transportation is often limited to using the public bus system and a car outside areas close to downtown and the University of Georgia campus. While the public bus system is free, it is often limited in routes and has inaccurate time schedules due to significant traffic in the Athens area. This significantly hinders transportation access in Athens or other cities similar to Athens. Attending physicians' appointments in a timely fashion becomes a challenge for those who do not have a car and directly impacts their health, especially in cases of treatment-heavy diseases such as cancer.

There are multiple routes to reduce transportation barriers that influence health. Primarily, a time-efficient and convenient transportation system would be necessary. Access to physicians' offices is less significant in large cities such as New York City, which has a highly efficient, walkable city layout and an underground metro system. However, unlike Athens, GA, public transportation in New York City costs a fare. Aside from financial and time considerations, a similar train, tram, or metro system with multiple stations throughout the city would significantly reduce concerns about transportation and access to health offices or hospitals (Noorbhai, 2022). Additionally, this could reduce car traffic and allow city buses to run more effectively.

Walkability could be a significant determining factor in access to healthcare. Cities like Athens, GA, often struggle with walkability due to suburban sprawl and infrastructure designed for car traffic instead of foot traffic. The term “Stroad” was coined and is usually defined as a multi-lane highway surrounding commercial shops and restaurants. This significantly reduces the walkability of an area, even with access to sidewalks. For those without a car or access to reliable transportation, a lack of walkability is another significant hindrance to access to health offices. Fixing this issue would require an entire restructuring of a city. New developments must focus on accessibility and compactness instead of keeping cities spread out. Residential areas must be within a short walk of all primary necessities, including hospitals and health offices. While this would be significantly difficult to achieve in a city built for suburban sprawl, it would be highly effective at reducing transportation issues regarding healthcare access.

A more affordable option to reduce transportation issues is a government-funded rideshare program that brings patients to doctors' appointments or treatments. This option is generally the easiest because it is less environmentally effective and does not require city restructuring. Additionally, it gives patients fewer freedoms to rely on a specific rideshare program for transportation to health centers. However, a program that would allow people lacking efficient transportation to apply for health-related transportation would significantly reduce missed physicians' appointments due to a lack of transportation. Chaiyachati et al. explored primary care show rates utilizing rideshares for medicaid patients. At the practice that used a rideshare program, the odds of showing up for doctors' appointments increased 2.57 times as much as the control group. Thus, decreasing transportation barriers increases the rate at which people seek medical care (Chaiyachati et al., 2018)

Universal/Income-Based Childcare

A sustainable solution for improving healthcare outcomes, particularly for low-income cancer patients, is the implementation of universal or income-based childcare. This resource would ensure childcare services are accessible to all families, regardless of socioeconomic status, through universal provision or cost-scaling according to family income. Such services would substantially reduce emotional and financial burdens on patients undergoing intensive medical treatments, such as chemotherapy, while enabling patients to support their families effectively.

Providing universal or income-based child care would significantly alleviate stress for patients by addressing the financial and logistical challenges of securing reliable childcare. The widespread lack of childcare services for parents undergoing cancer treatment presents a significant barrier, potentially compromising treatment outcomes for approximately 25% of cancer patients (Yusuf et al., 2025). This barrier is especially severe for single parents undergoing rigorous medical treatments, as inadequate child care creates substantial emotional strain, potentially hindering their overall health and treatment adherence. With universal or income-based childcare, patients would be able to consistently attend medical appointments, chemotherapy treatments, and additional resources such as therapy or support groups without added anxiety regarding the safety and well-being of their children.

Access to universal child care could also positively influence the developmental and educational outcomes of children from low-income families, particularly those affected by parental medical challenges. Quality childcare programs offer secure, structured environments that support cognitive, emotional, and social growth (McCartney et al., 2007). Parental cancer diagnoses have been shown to negatively impact children's physical and psychosocial well-being, leading to academic disruptions, anxiety, depression, and emotional distress lasting up to six years following the initial diagnosis (Morris et al., 2016). Early intervention through

childcare services could help mitigate these adverse effects, guiding children toward improved academic achievement and long-term socioeconomic stability. Additionally, this resource could disrupt the poverty cycle, which disproportionately impacts single-parent families facing chronic illness.

Research consistently demonstrates that children with early access to quality child care services exhibit greater school readiness, higher academic performance, and enhanced social and emotional development than those without adequate access (Schoch et al., 2023). Additionally, comprehensive childcare solutions would support the Medicare-eligible resources required by patients undergoing specialized oncology treatments. Leukemia treatments often involve frequent visits to specialists and advanced treatment facilities, which typically fall outside standard Medicare coverage, increasing financial burdens on patients insured by Medicaid. Lengthy treatment sessions, like chemotherapy, and frequent hospital visits necessitate consistent, affordable, and trustworthy childcare to enable patients to prioritize their health and treatment adherence. Patients may experience severe fatigue and physical weakness as treatments progress, limiting their ability to perform essential household tasks such as cooking nutritious meals. Universal or income-based childcare could include complementary support services, including access to nutritious, ready-to-eat meals for patients and their families. This ensures all family members have the necessary resources throughout the treatment and recovery.

Universal or income-based child care represents a sustainable strategy for enhancing health and socioeconomic outcomes for leukemia patients and their families. Addressing child care accessibility alleviates financial and emotional strain on parents, improves treatment adherence, and provides substantial educational and economic benefits for future generations.

RESOURCE HANDOUT

ATHENS AREA HOMELESS SHELTER

ARCH Village Housing Site Location: 205 Bray St #412, Athens, GA 30601

Barber Street Emergency Shelter Location: 620 Barber St, Athens, GA 30601

(706) 354-0423; (706) 395-6889, info@helpathenshomeless.org

The Athens Area Homeless Shelter is a non-profit organization that serves homeless individuals and families in Athens-Clarke County, Georgia. Its mission is to provide collaborative and comprehensive services to homeless individuals and families working toward sustainable independence. This program offers shelter, stability, and community to individuals facing homelessness in Athens, GA. Specifically, AAHS provides 45 days of emergency shelter in a welcoming environment for families with children under 18. Full-time childcare or after-school care is offered to those living in these shelter homes. To help further with stability, the Athens Area Homeless Shelter provides a one-year rental assistance for families moving out of homelessness and into stable housing. To reduce barriers to accessing housing, security, and utility deposits are included in the program. Community activities are also implemented through the Kids Group, family activity days, extracurricular activities, community building, and resource networks. Individuals apply for shelter options and seek more information on the Athens Area Homeless Shelter website. All of these services are at no cost.

AMERICAN CANCER SOCIETY (HOPE LODGE)

1552 Shoup Court, Decatur, GA 30033

404-327-9200, No existing email

The American Cancer Society Atlanta Hope Lodge program is a private, non-profit program that provides cancer patients undergoing active treatment with temporary housing and a supportive environment at no-cost. The Atlanta Hope Lodge offers housing that is in close proximity to treatment centers. The Hope Lodge is equipped with private bathrooms, free laundry rooms, outdoor and meditation spaces, resource/library rooms, accessible technology, community dining spaces, and frequently cooked meals.

CANCER FINANCIAL ASSISTANCE COALITION

The Cancer Financial Assistance Coalition is an online resource hub that connects individuals who are affected by cancer with national organizations offering financial help. While the CFAC does not assist or have a public phone number, its member organizations provide a wide range of support, including aid for housing, transportation, medication, and treatment costs. CFAC also offers educational tools to help patients understand complex financial challenges for cancer care.

CANCER FOUNDATION OF NORTHEAST GEORGIA (CFONEGA)

650 Oglethorpe Ave Ste 3, Athens, GA, 30606

(706) 353-4354

The Cancer Foundation of Northeast Georgia is a private non-profit organization with the goal of alleviating financial burdens among those struggling financially following a cancer diagnosis.

The Cancer Foundation of NEGA serves 25 counties in the northeast GA region. They provide a one-time payment of \$1000 to go towards any specific area of significant need, such as rent, utilities, or transportation. Additionally, they have a food pantry program for cancer patients that can be delivered if needed.

LEUKEMIA & LYMPHOMA SOCIETY (GEORGIA CHAPTER)

2859 Paces Ferry Road SE, Suite 725, Atlanta, GA 30339

1-800-955-4572

The Leukemia and Lymphoma Society, Georgia Chapter, is a non-profit organization that funds blood cancer research, provides support for patients and their families, and advocates for policies that improve the lives of those affected by leukemia, lymphoma, and other blood cancers. The Georgia Chapter offers residents in Athens a variety of community-based programs aimed at lessening financial and emotional burdens that come with a blood cancer diagnosis. The Co-pay Assistance Program helps cover insurance premiums and treatment-related costs, which can relieve financial stress. The Patient Aid Program provides a one-time \$100 stipend to help with everyday non-medical expenses for Athens residents who may have to travel to other cities in Georgia for treatment. There are free virtual support groups that are available for caregivers, as well as in-person support groups in the St Mary's Health Care System and Piedmont Regional.

PERSONAL REFLECTIONS

Nadia Janousek

Exploring Anna's case was difficult but allowed for insight and a gathering of extremely valuable information that is generalizable in the world of Public Health. Unlike many other diseases, the resources for cancer were plentiful, likely due to a lack of societal taboo as opposed to other issues such as drug abuse. However, significant problems and a lack of resources still remained, which made Anna's case significantly difficult due to her low SES.

One of the primary issues Anna faces is access to care. Despite her having Medicaid, she faces many barriers that likely prevent her from receiving timely treatment and care. Primarily, her lack of familial support and thus childcare is an extremely large barrier to treatment. Her children are not school-age, and she seemingly has no childcare. Thus, she may not be able to actually attend treatments or appointments if her children are not allowed to come with her. Additionally, we weren't told Anna's employment status, but it is likely she is employed. However, cancer treatment is long, costly, and painful, and will likely result in her having to take some sort of leave from her job. This poses an extremely difficult barrier, due to many financial resources not being significant enough to sustain somebody without a job, due to cancer treatment.

I believe Anna's case is extremely insightful and useful for my future career in medicine. As a physician, I will only be able to treat someone as long as I am accessible to them. Thus, the importance of on-site childcare in hospitals, or accessible hours in physician offices will be something I will advocate for implementation.

Going forward, I believe significant takeaways from Anna's case can be placed in many areas of Public Health. Access to care among other social determinants is a constant within this

field, and many of her needs can be translated among many other scenarios and situations. It is essential to ensure people like Anna are not falling through the cracks, and that they have every resource they need to live a long and sustainable life.

Carla Reddy

While working on Anna's case, I had to think critically to consider the real-world barriers that individuals like her face and find solutions that were practical in addressing her needs. It's eye-opening how complex and intricate social services are and how many hidden barriers exist for people who are already overwhelmed by their circumstances. Researching local resources, including housing assistance, mental health services, and employment support, allowed me to see the challenges that these individuals face in navigating this system, as it was sometimes hard to find the information I needed.

Anna's case involved the challenge of balancing her cancer treatment with her responsibilities of raising her children, limited transportation, mental health concerns, and a lack of social support. Seeing how eligibility requirements can exclude the people who need services the most was truly concerning. From this experience, I learned how important it is to take an approach that prioritizes the needs and perspectives of the individual in Public health. It is not just about pointing someone toward a service but rather about understanding the barriers they face in accessing those services.

I learned a lot about the work community organizations do and developed an appreciation for it. Understanding the gaps is just as important as knowing the services available, and I am now more aware of the need for knowing how to navigate resources. In my future career in Public Health as an epidemiologist, I want to ensure that my work is not only about providing resources but also making them accessible and comprehensible for the people who need them,

whether that's through communication being more effective, outreach, or partnerships with communities. I want to help break down the barriers that prevent people like Anna from finding help.

Moving forward, this experience gave me a real-world view of how the social determinants of health impact people's health. It also reminded me of the privilege I have in being able to access resources and support that others may struggle to obtain. I hope to keep this perspective in my career to advocate for a public health system that serves vulnerable populations.

Emma Nodine

Throughout the process of gathering resources for our needs assessment, I encountered significant difficulties in identifying accessible resources for single mothers with low socioeconomic status undergoing major medical treatments such as cancer. One of the most striking challenges I noticed was the overwhelming lack of affordable childcare options for mothers who are not only navigating the emotional and physical toll of a cancer diagnosis but are also the sole caregivers for young children. This challenge was particularly difficult in finding resources for Anna, because her children are not yet school age, so she is the primary caregiver for her two kids 24/7, without any nearby family to offer assistance.

This realization hit me especially hard because it is heartbreakingly enough to imagine a mother facing the life-altering news of a cancer diagnosis, but it is even more devastating when considering that she must simultaneously carry the full responsibility of parenting young children without adequate financial support, access to affordable childcare, or a strong social support system. Chemotherapy and recovery from treatments require time, rest, and support, and yet these mothers are forced to choose between their health and their children's well-being due to a

lack of accessible services or resources. Most of the childcare programs I found were either entirely private or required payments that would not be possible for individuals with low socioeconomic status, especially for those who must take unpaid leave or reduce their working hours just to attend treatment and recover.

I realized through this project how vast the systemic gaps in support for low-income mothers with serious health conditions like cancer are, even with Medicaid insurance. Georgia lacks programs such as universal or subsidized child care during medical treatment, as well as expanded financial assistance for medical debt, which often accumulates despite having Medicaid insurance because of varying coverage for necessary specialists. Significant health problems like cancer compound other challenges faced by individuals with low socioeconomic status, such as economic stability, caregiving responsibilities, and access to essential services. These gaps not only affect the individual fighting a disease but also extend to the developmental outcomes and emotional well-being of their children. This experience reinforced for me that without holistic, wraparound support, medical care alone is not enough.

As I move forward in my future career as a healthcare provider in the field of dentistry, the lessons from this project will encourage me to ensure I am well-informed about the financial and logistical barriers my patients may face due to insurance, particularly those from underserved backgrounds. I will prioritize improving my own understanding of how to navigate the insurance system more effectively, connecting patients with low-cost or sliding-scale services, or simply advocating for more comprehensive policies. I aim to shape my patient care beyond just treating patients clinically in the office, but to support my patients as people as best I can in my position as their provider.

Alivia Yates

As I gathered information from varying governmental and community agencies, I was provided a perspective of my own personal privilege. Being able to take the time to look through and assess potentially helpful agencies is something that those in need might not have the capability or resources to do. I have the technology to search online, I don't have children needing my attention, and I don't have the gloomy worry of finances or treatment lurking over me. Using Anna as a comparison, she may have struggled to find agencies on her own as she manages her illness and its impacts, watches her children, and may lack the resources to do a thorough search. This highlights a gap in public health, which patients may suffer due to the lack of resource dissemination and knowledge.

I personally did not notice any prevalent challenges in finding agencies that could benefit Anna. With many low-income-based agencies, this offered a substantial number of agencies that are suitable for Anna. In looking at resources for Anna, I largely focused on financial resources pertaining to her treatment and her family's naturally occurring lifestyle costs, such as food. Most of these resources I noted were governmental and showed to be appropriate for Anna's current financial standing. For example, SNAP would benefit Anna in obtaining nutritious food for her children. Additionally, TANF and Medicaid Waivers would benefit Anna by alleviating both extra incurred costs and further medical care. One issue I noted is that being insured by Medicaid limits some resources and agencies for Anna. For example, CancerCare aids in financial assistance and copayments for cancer patients. However, CancerCare excludes patients enrolled in Medicaid. This shows that some agencies take the position that Medicaid is sufficient in alleviating healthcare costs, which is not necessarily true in an unexpanded state. This gap in treatment costs exemplifies how easy it is for low-income patients to slip under the rug, even with a form of insurance.

Gathering information on resources and typical qualifications will benefit me as I enter a career in a hospital setting. My personal career goal is to become a pediatric oncology nurse. Thus, obtaining information on a number of cancer-based resources is largely beneficial to me as I work with patients, some of whom might be low-income. This provides me with an understanding of how to navigate resources, some of which I could offer patients in the future. In my attempt to grasp the depth and reality of Anna's situation, I also have a deeper perspective on how cancer treatment can cause extreme detriment in other areas of life. This means I gained insight into how financially and emotionally draining a cancer diagnosis and treatment are. This provides me with a fresh sense of empathy for the patients I will be treating one day, allowing me to better serve them and help them navigate their future.

Overall, I learned a lot regarding cancer's detriment and resources that are capable of alleviating the burden. Specifically, I understand how cancer can largely interfere with one's lifestyle, financial standing, and emotional well-being. Furthermore, I am now able to acknowledge numerous resources that can be beneficial to those suffering from a cancer diagnosis and treatment. With this understanding, I am equipped with the necessary information, empathy, and resources to be able to better serve those I encounter in my future career. This is important because it provides me with the capacity to improve the health and wellness of the patients I will one day encounter. Going forward, I now have a more holistic understanding of cancer's impact and will be able to use this knowledge as I approach my future career. Additionally, I understand what needs to be changed in the public health realm to improve the health and wellness of those enduring a cancer diagnosis and treatment. Understanding this need for improvement allows me to advocate for these changes for the betterment of public health.

Brennan Harry

Finding resources and information regarding Anna's case was very eye-opening. Her case allowed me to see the privileges and opportunities that my family and I have. My mom was diagnosed with breast cancer two years ago and has had several opportunities and resources for care. She did not have difficulty obtaining care and had constant help from other families and relatives. After having this personal experience and researching the opportunities for Anna, I felt angry at how unequal the care is among individuals. I learned that minimal affordable childcare and transportation services are available in the Athens, GA area. Due to a lack of these services, individuals like Anna lack access to quality childcare and easy transportation services to receive chemotherapy and attend doctors' appointments.

Additionally, when looking into what was needed for Anna, I found a strong need for emotional support. Many cancer diagnoses come with an emotional burden and constant stress about what is next. Specifically for Anna, I saw the challenge of needing emotional support to get her through this diagnosis. Since Anna did not have family around her, she lacked a support system and access to free childcare. This led to a further emotional, physical, and financial strain on Anna. Along with this, I noticed the problem of affordable resources around the Athens area. Although there were several beneficial resources for Anna, they were often expensive or involved traveling far. Since Anna is a single mom with two young children and no family around, she frequently does not have the time to travel far to certain facilities due to having to take care of her children. As I continued to notice these issues that Anna faced, I saw the need for more accessible and affordable organizations and resources around the Athens area for Anna.

As I pursue a career as a Physician Assistant, I plan to incorporate what I have learned from this case study into my practice. I plan to work in the oncology, cardiology, or dermatology field and treat all my patients with the same care. With this being said, I intend to think about

Anna's situation and how several individuals face these same struggles. I want to help patients get the care they need at a price they can afford. This case study has allowed me to navigate the resources needed for individuals like Anna. I now understand better how to provide better care and information to individuals with low income or who lack transportation and childcare.

Overall, this case study has allowed me to gain a deeper understanding of the inequalities faced by individuals with low incomes and limited access to specific resources. I have learned that many more resources and organizations are needed in the Athens area to meet these individuals' needs. I intend to hold what I have learned in this case study as I pursue a career as a Physician Assistant. I plan to give every patient the same type of care and provide them with resources to lessen their disease burden.

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