This course will focus on the clinician teachers and researchers in the Warsaw Ghetto. We will delve into how their resilience and research influences health care workers today.

*Instructions:* *Click the Start course above, or navigate to a section below to begin.*

Questions or comments on this module? Contact us [here](#).
What will be the focus of this course?

There is within us some hidden power, mysterious and secret, which keeps us going, keeps us alive, despite the natural law. If we cannot live on what is permitted, we live on what is forbidden.

- Chaim Kaplan, 10 March 1940, Warsaw Ghetto

Even those with knowledge of traumatic events in Nazi-occupied Europe might not be familiar with underground health professions education, research and practice during that difficult time. In ghettos, clinicians and students risked their lives to learn to care for those suffering in their community. Physicians in the Warsaw Ghetto led research, including on themselves, on the physiology of starvation. Professionals caring for ghetto residents confronted ethical questions generated by conditions of their confinement.

Learning Objectives

At the end of this course, you will be able to do the following:

1. Describe conditions of the Warsaw Ghetto and the importance of its underground clinical practice,
teaching, and research.

2 Explain the nature and scope of the influence of starvation research conducted in the Warsaw Ghetto.

3 Describe the present-day relevance of ethical questions faced by Jewish clinicians caring for fellow incarcerees in ghettos.
What Was Life Like in the Warsaw Ghetto?

Shortly after Nazi occupation in September 1939, the Warsaw Ghetto was established to enclose the local Jewish population.

Surrounded by walls built with their own hands and under strict and violent guard, Jews of Warsaw were cut off from the outside world.
Before World War II, Warsaw's Jewish population was 350,000. When the Warsaw Ghetto was established, this 30 percent of Warsaw's citizens were forced to live in this 2.4 percent of the city's area. The population of the Warsaw Ghetto eventually totaled 450,000.

Incarcerees struggled desperately to survive unbearable conditions. On average, 7 people lived in one room. Daily food rations were inhumanely inadequate and more than 100,000 people died of disease or starvation.

**Education Driven Underground**

Across Nazi-occupied Poland, education was prohibited and many faculty were sent to concentration camps. Underground university teaching continued, however, including clinical programs in Warsaw, Krakow, Vilna, and other cities of Nazi-occupied Poland.
Map: Warsaw Ghetto, 1940. Courtesy of USHMM.
The Cyste Hospital nursing school existed prior to the Ghetto’s establishment and continued until the building was destroyed. Director Luba Bielicka-Blum survived the Holocaust and was awarded the Florence Nightingale nursing school medal in 1965.
Polish Jewish physician Juliusz Zweibaum helped form the underground medical school in the Warsaw Ghetto.

The secret medical school in the Warsaw Ghetto was located at 84 Leszno Street.
Inhumane conditions of the Warsaw Ghetto meant epidemics were rampant. Under pretense of promoting sanitation and controlling contagion, Dr Juliusz Zweibaum created a clandestine medical school. Faculty were supported by colleagues beyond the Ghetto walls from Warsaw University.

“When the date of the opening the courses was established there was a strange mood in Lezno street (hospital) both in the Collegium and on the streets. The specially adapted lecture hall was filled with students. A positive mood was clearly discerned. Whoever looked at those excited faces had to believe in life, and in the future. I then understood that I had undertaken something that was essential for the lives of these young people.”
After medical students finished clinical instruction in the Cyste Hospital and the Berson Bauman Children's Hospital, with evening curfew in place, students passed Nazi checkpoints on the way to basic science classes.

Maintaining secrecy was a matter of life and death, so classrooms were often without heat or power. Classes began with infectious disease discussion. Books on approved subjects were left in view for chance Nazi surveillance. Malodorous materials were also left out to maintain the ruse that students’ inquiry was limited to sanitation.
What motivated faculty to risk teaching in the medical school?

We might suppose there was need for people living in the Ghetto to maintain some semblance of normal life amidst Nazi occupation. Because so many physicians died in the ghetto or were deported to Treblinka, perhaps faculty sought to carry on with optimism. They shaped a generation of clinicians who served people remaining in the Ghetto.
Some faculty like Dr Ludwig Stabholz later said they simply enjoyed teaching and, perhaps, did so in the Ghetto as an act of rebellion.

A Warsaw Ghetto medical student studies anatomy, c. 1941.


Learning materials for anatomy, physiology, chemistry, and histology classes were smuggled into the Ghetto
by Warsaw University colleagues, who also certified students’ examination results. Most anatomy classes took place in Ghetto hospital morgues.

After World War II, surviving students (50 of 500) continued their medical educations at the Warsaw University Medical School.

Two surviving students of the Warsaw Ghetto medical school were Drs Thaddeus Stabholz (left) and Marc Balin (right).

Key institutions assisted students and faculty in the Warsaw Ghetto.

**Instructions:** Drag the description to the appropriate establishment

- Existed prior to the Ghetto's establishment and functioned until building was destroyed
  - Cyste Hospital nursing school

- Established under the pretense of sanitation education for incarcerees
  - Clandestine Warsaw Ghetto medical school

- Learning materials were smuggled from here into the Warsaw Ghetto
  - Warsaw University
Death and Disease in the Warsaw Ghetto

Of 400,000 Warsaw Ghetto residents, more than 254,000 were deported to Treblinka in 1942 and more than 100,000 died of disease or starvation in the Ghetto.
Dr Israel Milejkowski was a Jewish physician on staff at Czyste Hospital in the Warsaw Ghetto. Milejkowski was a member of the Judenrat, a council charged with implementing Nazi policies, which placed Judenrat members in impossible situations.
With so many starvation-related deaths, 28 eminent Jewish physicians, led by Milejkowski, designed a study to examine clinical, metabolic, and pathological consequences of “hunger disease” (severe malnutrition and starvation in humans) among Ghetto incarcerees, including themselves.
Seventy adult and 40 pediatric patients suffering starvation and malnutrition were human subjects in what became known as “The Hunger Study.”

Subjects were chosen among incarcerees not suffering from potentially confounding infections, such as tuberculosis or typhus.
Equipment needed to monitor subjects and collect data were smuggled into the Ghetto.

By February 1942, The Hunger Study was formally launched in Czyste Hospital for adult patients and in Bauman-Berson Children’s Hospital for pediatric patients.

Instructions: Click the cards below to learn more.

Cyste Hospital, a training locale for students of the clandestine medical school, was also a site of The Hunger Study.
"A few last words to honor you, the Jewish doctors. What can I tell you, my beloved colleagues and companions in misery? You are a part of all of us. Slavery, hunger, deportation, those death figures in our Ghetto were also your legacy. And you by your work could give the henchmen the answer: "Non omnis moriar," I shall not wholly die."

Dr. Israel Milejkowski

Milejowski’s collection of evidence about starvation expresses Jewish physicians’ extraordinary dedication to science and to patients in the Ghetto.

*Instructions: Click each tab to learn more about the Hunger Study*

<table>
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<tr>
<th>CLINICAL OBSERVATIONS</th>
<th>PHYSIOLOGICAL RESPONSES</th>
<th>REFEEDING SYNDROME</th>
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Physiological responses to starvation, such as limb edema, effusions (collections of fluid), and changes in body temperature, blood pressure, pulse rate, vision, and skin appearance were documented in this landmark work.

Image: Two patients sharing a bed in the Czyste Hospital in the Warsaw Ghetto. Source: Ghetto Fighters House Museum
Carbohydrate metabolism, acid-base ratio, respiratory changes, basic metabolic rate, nitrogen and water metabolism, vitamin and hormone levels were measured and recorded as indicators of subjects’ physiological responses to starvation.

Image: A Jewish physician examines a patient in the Warsaw Ghetto. Source: Yad Vashem Archives, Jerusalem,
The Hunger Study was interrupted in July 1942 when the Nazis closed hospitals and deported the study's investigators and subjects and thousands of others from the Warsaw Ghetto to extermination camps.
The Hunger Study revealed many important findings, including that people who experience prolonged starvation tend to experience rapid physiologic decline when refed.

Tragically, this finding, now widely known as refeeding syndrome, was not available to prevent some deaths among emaciated concentration camp incarcerees freed by Allied and Soviet troops in 1944 and 1945.

Image: Dr Anna Braude-Heller examines a starving child. Source: Photo Archive Ghetto Fighters House.
Warsaw / Poland - Jan 28 2018: Jewish cemetery Warsaw. Part of the WWII Jewish ghetto.
Source: Thomas Persson; Shutterstock.

As deportations were taking place, researchers still continued The Hunger Study in one building of the Warsaw Ghetto’s Jewish cemetery.

From Smuggling to Publishing
Most investigators and subjects in the Hunger Study did not survive, but knowledge gained from its data did.

A manuscript describing the study's methods and key findings was smuggled from the Warsaw Ghetto before it was destroyed.

The smuggler was a Polish professor of medicine at Warsaw University, Dr Wietold Orlowski. He buried the manuscript, hiding it until the Nazis were driven out of Warsaw.
Dr Wietold Orlowski was a Polish physician at Warsaw University.
Surviving researcher, Dr Emil Apfelbaum, unearthed the manuscript from its hiding place. In 1945, he gave it to the American Jewish Joint Distribution Committee, a relief organization.
Edited by Myron Winick, the manuscript was published by John Wiley in 1979.

Ethics Insights from the Hunger Study

Today's clinical and ethical standards evolved as regulatory responses from the international community to atrocities of the Holocaust, including those perpetrated by Nazi clinicians.

Jewish physician-researchers sometimes employed invasive techniques to assess the range of physiological responses to starvation. Though no evidence suggests subjects were coerced, consent and the extent of subjects' voluntary participation are unknown.

Ethically unique hallmarks of the Hunger Study include that clinician-researchers studied themselves, suffered
the same conditions as their subjects, and faced likely death by the war's end.

A key ethical distinction between actions of Jewish physician-researchers who administered protocols of the Hunger Study and Nazi clinicians who experimented on incarcerees is that investigators in the Hunger Study were not intentionally causing harm to subjects.

The Hunger Study and Clinical Practice Today
The Hunger Study described phenomena that were then novel, including the relative rarity of signs and symptoms of vitamin deficiency among persons...
suffering acute starvation and rapid progression of some diseases (eg, tuberculosis) and less severe progression of other diseases (eg, chickenpox, measles, and scarlet fever) in people who are starving. A review in the *Journal of the Royal Society of Medicine* stated that the Hunger Study “should be read by every doctor.”

Broad reading of the Hunger Study has been recommended for clinicians looking to cultivate nutrition knowledge.

A *Journal of the American Medical Association* review of the Hunger Study in 1979 (when the Study was first published in English) noted, “Even for those experienced in the field of severe malnutrition and famine, there is much to learn.”
This article concluded that the Hunger Study “should be read by all concerned with nutrition and certainly should be obtained by libraries of all schools and centers concerned with teaching and research in this field.”
This article concluded that the Hunger Study “should be read by all concerned with nutrition and certainly should be obtained by libraries of all schools and centers concerned with teaching and research in this field.”
Hunger Disease: Studies by the Jewish Physicians in the Warsaw Ghetto

Derrick B. Jelliffe, MD

Abstract

This book is a unique blend of heroism and scientific research. It parallels various accounts by medical workers interned in World War II prisoner of war camps, especially in the Far East. It differs profoundly in the remorseless inevitability of the conditions in the Warsaw Ghetto of 1940, which had one purpose in mind—"mass extermination by mass starvation," with a diet of 800 calories, grossly deficient in fat, vitamins, and protein.

Under the leadership of Dr. Israel Milejowski, this group of Jewish physicians, nurses, and assistants, with the help of those smuggling in limited equipment, undertook remarkably detailed clinical metabolic, physiological, and autopsy studies of "hunger disease" on their fellow sufferers, combined with attempts at the best treatment practicable.

The account of their findings is of great importance, and the publishers and editor deserve congratulations on translating it from the Polish. What are detailed are the changes occurring in a

The Hunger Study has also been cited in numerous studies. This book authored by Drs Kathleen Mulligan and Morris Schambelan notes similarities between malnutrition in patients with AIDS and historical reports of death from starvation.

The Hunger Study was the first publication to describe *refeeding syndrome*, a collection of potentially fatal symptoms a malnourished person can experience upon refeeding.

Tragically, World War II’s end enabled data collection from large numbers of malnourished persons, who survived the War and the Holocaust, but did not survive refeeding.
The Hunger Study expresses core tenets of heath care ethics: self-study and contributing to the clinical...
knowledge base, even in dire circumstances, are part of health professionalism.

Knowledge check

People who experience prolonged starvation tend to experience rapid physiologic decline when refed. This is known today as ______ syndrome.

Instructions: Type your answer below and click Submit

Type your answer here

Submit

Continue
Ethics and caring for fellow incarcerees
From 1941-1943, Dr Abraham Wajnryb was incarcerated in the Vilna Ghetto. Source: Jewish Holocaust Museum and Research Centre, Melbourne.
Born in Kielce, Poland in 1912, Dr Abraham Wajnryb graduated from Warsaw University in 1936 and practiced internal medicine.

In 1943, the Nazis liquidated the Vilna Ghetto, and deported the Ghetto incarcerees, including Wajnryb, to the labor camps. Wajnryb worked in Schomberg until it was liberated.

After World War II, Wajnryb was reunited with his wife, Nellie, also a physician. They settled in Australia and continued to practice medicine. Wajnryb died in 1993.

Which factors should inform scarce resource allocation?
Shortages forced harrowing deliberations about how to allocate resources. Calcium, for example, was used to treat hemorrhage in patients with tuberculosis and was in short supply.

Wajnryb related a story in which he convened 6 men (a rabbi, a lawyer, and 3 other physicians) in the Vilna Ghetto to determine which patients should receive calcium. Two physicians left the deliberation to protest an “inhuman approach” of giving medicine only to patients most likely to recover. Wajnryb, too, felt uncertain about this criterion’s rightness and about the sources of this ad hoc group’s authority to make such decisions.

The rabbi member of the group is said to have reflected,

“It was God who gives and takes life away and He alone and nobody else knows when to give it and when to take it away [...] those present had no moral right to usurp power and exercise divine right, even if there seemed to be no other way.”
"Silence gripped the room. Nobody spoke. The silence deepened, became oppressive and demanded speech. It was the silence that frightened me," Wajnryb said, dismayed about his colleagues’ avoidance of "confronting the real problem with all the complexities, and [hiding] behind their moral scruples instead of taking a stand."


What can we learn from this today?

The situation Wajnryb described was extreme, but today, health care professionals and organizations are still often called upon to make decisions about which criteria (ie, urgency, prognostic survivability or thrivability) should be used to distribute supplies (eg,
ventilators, blood products, organs, pharmaceuticals), space (eg, ICU beds), and staff.

Under extreme conditions (eg, the COVID-19 pandemic, Hurricane Katrina), triage and scarce life-saving resource allocation decisions still divide clinical, spiritual, and other leaders.

Instructions: Click each tab to learn more about these challenging situations

Under conditions in which nearly all results will be bad ones regardless of the quality of one’s character or the laudability of one’s intention, what does it mean to preserve one’s character and express professional integrity?

In his memoirs, Wajnryb described feeling caught between his practical, lived reality and his professional ethical values:
"The religious and moral rules stating that man has no authority to decide who is to live and who is to die are only just and righteous in a world where justice and righteousness prevail. In the awful reality of the Ghetto, these rules were like an image from nowhere, an abstraction implanted in a place and a time alien to it."

**How should clinicians respond to practice pressures while expressing key professional ethical values?**

Conditions in the Vilna Ghetto were extreme, but clinicians today still experience situations in which they cannot act as they are motivated to act. These experiences are called *moral distress.*
How should clinicians’ cultivate self-knowledge they can draw upon to help patients make meaning of their fear and suffering?

Wajnryb reflected,

"We did not expect to survive but we did expect that the stories would be read and re-read, studied and re-studied, until the world would come up with an answer as to why all this happened."

Wajnryb thought that some meaning could be derived, through processes of study, learning, and teaching, from the extreme suffering he and others experienced in the Vilna Ghetto. Clinicians today must still help patients through fear, suffering, and death.

Ethics and caring for fellow incarcerees
Lucie Adelsberger was born in Nuremberg in 1895. She graduated from medical school in 1919 and became an allergic disease specialist in Berlin. By 1938, she and her Jewish colleagues were no longer permitted to practice medicine. Deported to Auschwitz in 1943, she worked in the infirmary.

After Soviet liberation of Auschwitz, Adelsberger immigrated to the United States, practiced medicine in New York City, conducted research, and made key findings in the viral origins of some cancers. In 1946, she published “Medical Observations in Auschwitz Concentration Camp.”
Adelsberger, like other physician Holocaust survivors, emphasized professional identity in their testimonies. In a forward to Adelsberger's memoir, the historian Deborah Lipstadt states,

"The juxtaposition of Mengele's use of his medical training to inflict pain and suffering on innocent victims with Adelsberger's attempt—absent the most basic tools of her profession—to alleviate suffering and preserve life demonstrates the diametrically opposed purposes to which medical skills could be put."

Dr Lucie Adelsberger


Adelsberger described her work with dying incarcerees:
"I was sent on 21 May 1943 to the gypsy camp together with two other women physician prisoners because there was a typhus epidemic. Here we were in a small block fifty feet long and thirty feet wide, where nearly one thousand prisoners were packed together. Where everything was swarming with lice, where the hygienic circumstances were catastrophic. The only thing doctors could do for their patients, emaciated, skeletal or swollen with edema of starvation and wallowing in feverish deliriums, was to comfort them. It didn’t make them any better, they still died like flies. And again, and again, rising up between the death rattles of the dying and the drawn-out moans was the gypsy call, ‘Mulo, Mulo’ (‘a corpse, a corpse’).

In Auschwitz, she and others did what they could to spare incarcerated from selection.

"The distinguishing mark of the concentration camp at Auschwitz was selection. By that I mean the sorting out of people who were relegated to the gas chambers and subsequent cremation."
Prescription written by Dr. Lucie Sara Adelsberger. Under Nazi law, Jewish doctors were forbidden to treat "Aryan" patients. The top of this prescription reads, "Exclusive authorization to treat Jews only." Courtesy of the Museum of Jewish Heritage.
Adelsberger also articulated her encounters with pregnant women in Auschwitz:

"According to SS guidelines, every Jewish child automatically condemned his mother to death. Apart from the individual chance occurrences, the camp did not keep Jewish children. They were consigned to the fire, either living or gassed, and they were not alone, for their mothers went with them. Pregnant women were frequently admitted to the camp. They included women from mixed marriages, who were generally spared the gas, and childless full Jews whose pregnancy was not detected when they arrived. A number of them were subjected to forced abortions. So it happened that a few actually gave birth in the camp. There they received medical and nursing care, at least as far as was possible in a concentration camp. However, as soon as the newborn saw the light of day, the inconceivable happened. Within a week both were sent to their deaths. Medical ethics prescribe that if, during labor, the mother and the child are in danger, the priority must be to save the life of the mother. We prisoner physicians acted quietly in accordance with this regulation. Many women never got over the shock of the death of their newborn infant and have forgiven neither themselves nor us."
In the epilogue of A Doctor’s Story, she wrote the following:

“This report tells the story of the victims. Not with the purpose of opening old wounds, but of passing it on as a legacy for Jews and for all mankind. It will fulfill its purpose only if it helps teach us, who call ourselves the children of God, to become better human beings, to truly love our neighbors and to work toward the eradication of brutality from the face of the earth.

Dr Lucie Adelsberger

Distribution of commodities

Life-saving resource allocation decisions

Determining which resources are most appropriate for dying patients

Rarely applicable in today's world

Doing research on yourself

CONTINUE
Biomedical research conducted in extreme conditions of oppression continues to influence clinical care of patients today.

Clinicians actions in the Warsaw Ghetto, Vilna Ghetto, and Auschwitz continue to suggest the importance of
legacies of the Holocaust in health care and emphasize the value of Holocaust education in health professions curricula.

Jews captured during a Warsaw Ghetto uprising are marched to the Umschlagplatz for deportation to Nazi concentration or death camps. Courtesy of: USHMM.

Learning Objectives

You will now be able to:
1. Describe conditions of the Warsaw Ghetto and the importance of its underground clinical practice, teaching, and research.

2. Explain the nature and scope of the influence of starvation research conducted in the Warsaw Ghetto.

3. Describe the present-day relevance of ethical questions faced by Jewish clinicians caring for fellow incarcerees in ghettos.
Want to earn CME credit for this activity?

Return to the AMA Ed Hub activity and click the Take Quiz tab to proceed.
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Legacies of the Holocaust in Health Care

An Underground Medical School in the Warsaw Ghetto, 1941-2

The Story of One Life

Oral History Interview of Dr. Henry Fenigstein

Hunger Disease: Studies by the Jewish Physicians in the Warsaw Ghetto
Hunger Disease: Studies by the Jewish Physicians in the Warsaw Ghetto

Ethics Talk: Rationing Critical Care During COVID Surge

How Should Integrity Preservation and Professional Growth Be Balanced during Trainees’ Professionalization?

Should Clinicians Challenge Faith-Based Institutional Values Conflicting with Their Own?

Four Communication Skills from Psychiatry
Useful in Palliative Care and How to Teach Them

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Sources

United States Holocaust Memorial Museum

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USHMM - Map: WARSAW Ghetto, 1940

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The World Holocaust Remembrance Center - Luba Bielicka Blum

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Ghetto Fighters House Archives - Dr. Israel Milejkowski

USHMM - A nurse attends to two starving children in a hospital in the Warsaw ghetto.

Wikipedia: Bersohn and Bauman Children's Hospital in Warsaw

Ghetto Fighters' House Archives - Dr Anna Braude-Heller examines a starving child.

Wikipedia - Witold Eugeniusz Orłowski
William P. Didusch Center for Urologic History - The Hunger Disease Study in the Warsaw Ghetto

Journal of the Royal Society of Medicine - Book reviews

JAMA - Hunger Disease: Studies by the Jewish Physicians in the Warsaw Ghetto

USHMM - Jews captured during the Warsaw ghetto uprising are marched to the Umschlagplatz for deportation
Museum of Jewish Heritage - Prescription written by Dr. Lucie Sara Adelsberger

Ghetto Fighters' House Archives - Jewish physicians in the Seulgau camp following its liberation

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