

NASHIM創立30周年記念シンポジウム
2022年2月20日
ポスト/ウィズコロナ災禍のグローバル時代に生きる
原爆被爆の教訓から新被ばく医療へ

長崎と世界の絆: なしむ

原爆被爆から原子力災害医療へ

量子科学技術研究開発機構放射線医学研究所 所長
福島県立医科大学理事 長特別補佐・副学長
長崎大学名誉教授
山下 俊一

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Thank you very much for this opportunity for me to speak to you at the NASHIM 30th anniversary. As one who has been involved in the operation of NASHIM from the very beginning, I am honored to play this major role in today's program. First of all, I would like to thank all of you who have sent us messages to congratulate, and those who have contributed to the operation of NASHIM over the years. The spread of this novel coronavirus is one of the most serious threats to human survival in the global community. Therefore, I would like to think about the relationship with the world, the role we should play, and the bonds we should build together through NASHIM from this place in Nagasaki, where we have experience and lessons learned from the atomic bombings and nuclear disaster medicine.

NASHIM創立記念20周年記念シンポジウム

特別講演
講師 長瀬 重信 氏
長崎大学名誉教授、放射線影響研究所元理事長
演題 【長崎を世界に】



長瀬名誉教授の講演概要
長瀬氏が長崎に赴任した1980年は、NASHIMは設立前、原研は創設17年目であった。「長崎を世界に」をモットーに、長崎から世界に発信できるテーマを求めて努力するなか、被爆した唯一の大学を再認識し、フェルンブレイク事故調査にも協力した。その経緯が福島での長崎と長崎大学の貢献として活用されている。今後も、同じ目線で国内外の様々な難題と密接に協力しながら、人材の育成、知見の共有並びに拡大を通じ、長崎大学が世界のセンターであり続けることを祈っている。

【戒名】
智照院醫王重叡居士
(1932.1.18-2016.11.12)



As people say time flies, it has already been 10 years since the late Dr. Shigenobu Nagasaki, who played a major role in the founding and operation of NASHIM, gave a special lecture at the 20th anniversary symposium. His last wish was to fulfill his mission and responsibilities here in Nagasaki, and to make a world-class contribution to the world. I would like to take this opportunity to reflect on his achievements and pray for his soul rest in peace.

被災住民の健康を見守る取り組み

平時の医療体制から緊急時対応、そして復興期の対応まで

原子力災害や放射線事故への対応と感染症対応の相違から
医療体制と資源の問題を考える

健康見守りのための
自助、共助、公助の原則

災害サイクルとして
循環思考

医学、医療以外に自然・人文社会科学と
規制科学の融合が不可欠

医療提供者、医療人からの
福島原発事故対応と
県民健康見守り事業について

環境モニタリング
健康モニタリング

放射線リスクコミュニケーション

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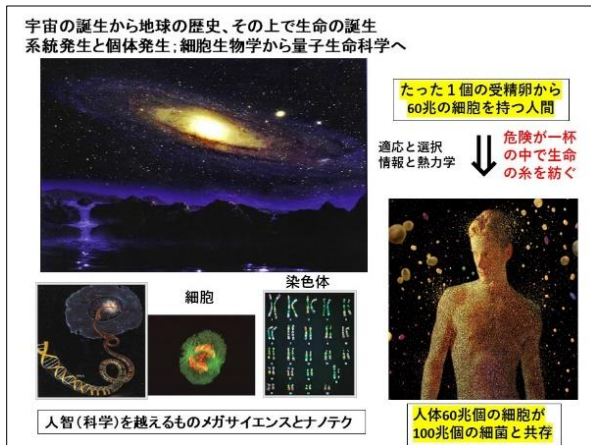
In this uncertain and unstable world, every time we encounter a health crisis, we are called upon to look after the health of the victims affected, and to make optimal use of medical resources in different phases, from the normal times to emergencies, then to the recovery phase. Self-reliance and resilience at the national, the communal, and above all, the individual level are the key: but once we encounter a crisis, we need to look at this healthcare project and conduct cyclical thinking about the capabilities to be

demonstrated in accordance with the disaster cycle, depending on the times and the phase we are in.

In particular, the Great East Japan Earthquake 11 years ago and the Fukushima Nuclear Plant Accident that followed have necessitated a health monitoring program for the citizens of the prefecture.

Environmental and health monitoring are required for the long term, and as the bearer of correct radiation risk communication, we must have the ability to understand and make correct judgments.

How the health care system should be organized and function in today's health crisis management is an important topic for this issue.

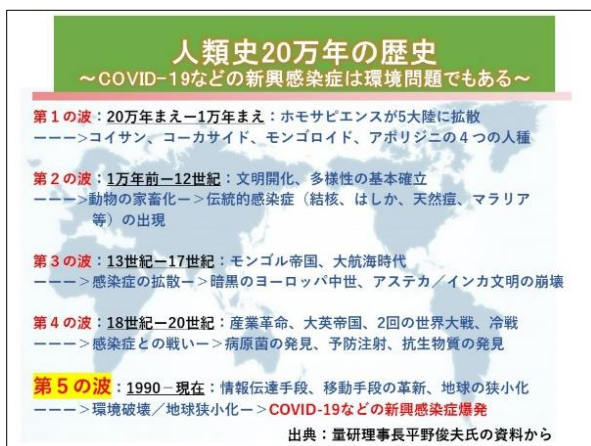


So to begin with, what is the appropriate big picture and way of thoughts when we think about the crisis of human survival?

From the birth of the universe 4.6 billion years ago, or the birth of the earth, that would be a grand space and time frame. But here, let's go ahead and think about the existence and significance of radiation and radioactivity, as well as their health risks, in the drama of the birth of life.

Let's start off with one fertilized egg. From here, we can think about the meaning of life. As each life forms through cell division and multiplication, tissues are formed from our cells,

then each organ is formed. In this process, we are simultaneously undergoing phylogenetic development as well as our ontogeny. So we have so many cells in our bodies. We have over 60 trillion cells, and live with about 100 trillion bacteria. And looking at each cell, as it says on this slide, we have chromosomes and mitochondria, and we take various risks as genetic and metabolic risks. This is where today's theme of radiation and radioactivity comes in.



So on this slide, we have the history of humans for the past 200,000 years, which was given to me by Dr. Hirano, the President of QST (National Institutes for Quantum Science and Technology).

In fact, humanity has been struck by various waves of health crises, and it is said that we are currently living in the era of the Anthropocene.

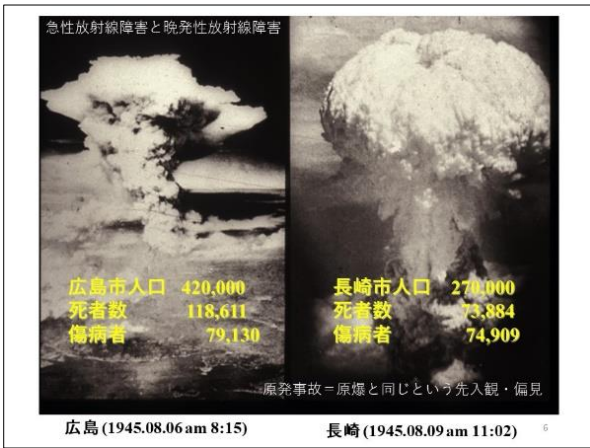
The theory of the Anthropocene, which began around 1950, proposes a crisis of mass extinction of life on the earth. With only 200,000 years of humanity, we already have experienced

waves of such health crises.

What we are witnessing now in modern society is a crisis that is mainly caused by deforestation, chemical use, overexploitation, and many other human-centered factors.

If environmental pollution and climate change are in fact the result of the Anthropocene, then the development and use of the nuclear weapons, as well as conflicts and wars, also pose a major survival risk.

In a sense, the COVID-19 pandemic is also said to be correlated with problems of environmental destruction and the shrinking of the earth.



On August 6, 1945 in Hiroshima, and on August 9 in Nagasaki, nuclear weapons were used twice in a row in the history of mankind.

It was 77 years ago that the agonizing inferno came to life. So many deaths and casualties were counted in both cities, as well as acute and late-onset radiation damages.

Yet they have overcome the difficulties and we see the thriving, peaceful cities today.

However, the acute and chronic damages caused by the atomic bombing in Hiroshima and Nagasaki were also seen in the

victims of the nuclear plant accident in Fukushima, leading people to call out the accident as the return of the Chernobyl accident.

And we also need to understand what happened during these world wars, and we cannot just let the progress of science eliminate us.



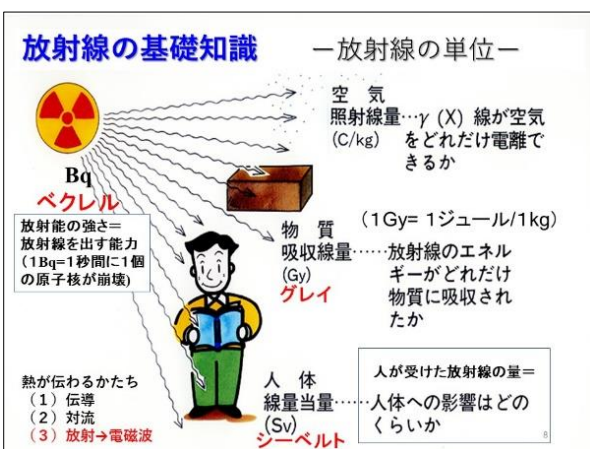
For example, during this period, Dr. Erwin Schlesinger was a quantum mechanic physicist, and one of his achievements was atomic physics, which led to the development of nuclear weapons, nuclear submarines, and the peaceful use of nuclear power. Another stream was the book "What is Life?" as shown on this slide.

The historical discovery taking all the knowledge of physics and chemistry and unraveled biology in terms of its materialism and chemical reactions.

In other words, it led to the discovery of what Dr. Watson and

Dr. Crick published in the Nature in 1953, that the double helix of DNA is the carrier of genetic information.

The elucidation of this genetic structure led to the subsequent development of molecular biology, which has contributed to the production of today's mRNA vaccines.



I would like to introduce a few basics of radiation. Everything is composed of matter.

And these elements are not all stable: some are stable but some are unstable.

And when an unstable element is converted to a stable element, the amount of energy that is generated when an atomic nucleus decays per second, such amount of radiation is called 1 becquerel.

Unlike heat, radiation is transmitted as electromagnetic waves, which is a type of lights, instead of conduction or radiation.

As a result, it ionizes the air and water, and the amount of energy absorbed by the materials exposed to it is expressed in units of Gray.

However, when we are talking about in units of Gray, the radiation sources such as alpha, beta, gamma, and neutron rays, differ in their effects on living organisms, so the artificial unit called sievert, which is the amount of effect caused on humans, was created.

Therefore, as long as we are talking in units of sievert, there is no difference in health effects, regardless of whether the exposure is artificial or natural, internal or external. At 1 Sv, anyone can be affected. The general rule of thumb is that an instantaneous exposure of 10 Sv over the whole body could kill you.

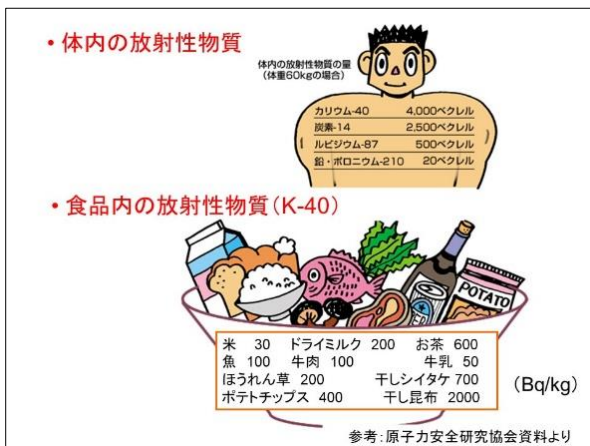
Then what about mSv, which is 1/1000 of 1 Sv, and μ Sv, which is 1/1000 of mSv, and what about the biological effects of radiation? Those who can provide a clear explanation on these things are in high demand after the accident at Fukushima nuclear power plant.



For the members of NASHIM, it may be like preaching to the choir if I told you to think about radiation doses in daily life, but maybe you can recall looking at this figure.

We are exposed to a certain amount of radiation in our daily lives.

Medical care also exposes us to radiation. For example, if we are on the space station, we would be exposed to about 100 mGy as equivalent to a population environment.



Radioactivity, which is a radioactive material, has existed everywhere on earth since the birth of the universe, and from the origin of life to the present day, we are known to have trace amounts of K-40 and other radioactivity and radiation in our food and bodies, as shown on this slide.

If we had a good education program to learn about radiation or if only we understood about these issues more properly, the chaos at the Fukushima nuclear plant accident would not have been as devastating so that there is still confusion and stupor that continue to this day. The need for NASHIM is also

strongly demanded in this area, the so-called hibakusha medical care.

放射線と健康リスクの考え方

- すべての物質は元素から成り立つ
- 宇宙も地球も人間も、元素の中に原子がある
- 不安定な原子が安定な原子に変化する
- その時放射線を出す
- 宇宙の成り立ち、地球の歴史、人類史は、すべて物質の崩壊と生物進化の調和にある
- 生まれること、病気をすること、年をとること、そして死ぬことは順番で避けられない
- 生命リスクの中で**放射線健康リスク**を考える
- すなわちリスク(確率)をどう考えるが重要
- 集団リスクから個人リスク、**リスク認知**の課題

The importance is the understanding of health risks in case of exposure to radiation.

All matter is composed of elements, including the universe, the earth, and human beings. In this case, when an unstable atom changes into a stable atom, it emits radiation.

Radiation is not the only health risk among life risks. There are various risks, and how do we consider the risks among them?

In the case of carcinogenesis risk, it is quite clear from the epidemiological studies conducted in Hiroshima and Nagasaki that the probability theory is based on the collective risk.

However, the issue of individual risk, or risk perception in terms of how we understand risk, is very diverse and involves a great deal of sensitivity and emotion, and there is also some psychological influence added to it. Conversely, the tendency to fall into radiophobia is very strong, and this can easily be fueled by fear.



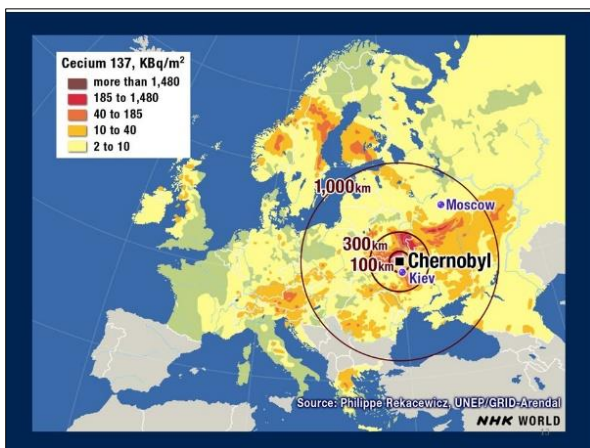
So NASHIM is to serve as a bond between the world and Nagasaki, as per the topic of the day.

As the speakers before me have pointed out, the Chernobyl nuclear power plant accident was one of the major factors that triggered the beginning of medical support activities for atomic bomb survivors overseas.

The accident occurred on April 26, 1986 in Pripyat, Chernobyl, about 60 km north of Kiev.

The figure shows a simulation of the diffusion of radioactive iodine.

The half-life of radioactive iodine is 8 days, so it was gone by the summer of the same year, but later it was reported that thyroid cancer increased in children who had contaminated food, especially milk, in the large pasture area at the beginning of spring.



After looking at this map, you will see that radioactive cesium-137 is in the soil contamination map with a half-life of 30 years.

This is the map we got at the Obninsk Institute of Radiation Medicine on May 1, 1991.

But since the half-life is 30 years, we were still able to get this contamination map although that was after 5 years since the accident. A huge area was contaminated.

Many countries including Germany declared a state of emergency and imposed restrictions on food distributions, etc.

Even looking at this map, it is easy to see that the people then must have felt so much fear and anxiety.

なしむ成立直前の長崎

1991年春先、長崎地裁と長崎新聞社に銃弾が撃ち込まれ、県民は司法と言論の自由への挑戦に怒った。

自然の脅威を思い知らされた。1990年、200年ぶりに噴火した雲仙・普賢岳は恵みの山から脅威の山へと変貌し、多くの人命と生活の糧を奪った。台風も大きなつめ跡を残した。

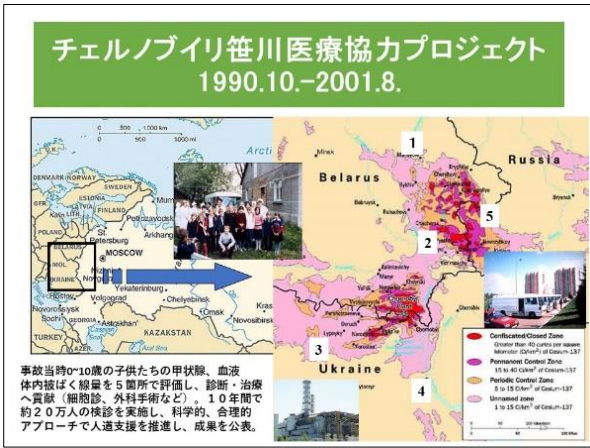
国際的な話題も多かった。統一地方選の最中、4月19日ゴルバチョフ・ソ連大統領夫妻が長崎市を訪問。ベルシャ湾への掃海艦派遣は基地の街・佐世保を揺さぶり、タイマイの禁輸問題はベトナム業界に衝撃を与えた。

離島では相次いで架橋が実現、街活性化への期待がかかる。

スポーツ界は明るいニュースが続いた。国見高サッカー部、鳴滝高バスケット部が全国制覇。都市対抗野球で準優勝した三菱重工長崎も県内を沸かせた。

Then it was 1991. I picked up some articles from newspapers just before NASHIM was established.

Many things happened. 30 years ago, in fact, it was the year after the eruption of Mount Unzen Fugendake, but there were also some good news.as I wrote in red, on April 19, 1991, the President of Soviet Union, Mikhail Gorbachev and his wife visited Nagasaki City, paid their respects at the Atomic Bomb Memorial Service, and also visited the Russian cemetery in Goshinji temple.



During this period, with the support of the then Sasakawa Memorial Health Cooperation Foundation (now known as Sasakawa Health Foundation), whose chairperson is Dr. Kita, who just gave us a speech earlier, we diagnosed and provided medical treatments at five locations in three countries, namely Russia, Belarus, and Ukraine, before the collapse of the Cold War.

We have been conducting thyroid and blood tests on children between the ages of 0 and 10 at the time of the accident, and also measured radiation levels in their bodies using Whole

Body Counters (WBC).

There were many difficulties and challenges involved in our exchange and joint projects in the former Soviet Bloc, as there was so much difference in politics, economy, culture, history, language, and sense of values from those in the West. But we also never thought that could utilize our experience there into Fukushima.



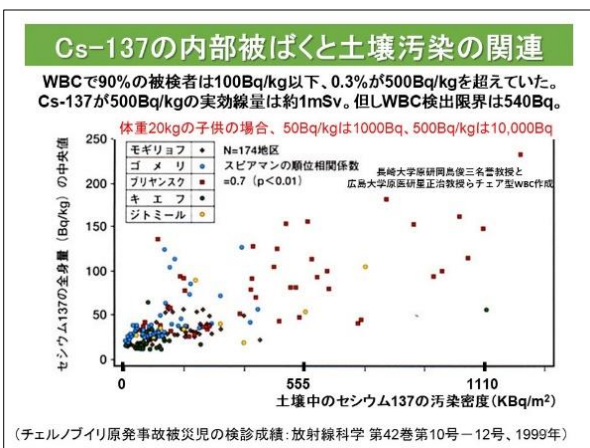
First, let me introduce the first five years of the Chernobyl-Sasakawa collaboration project.

This slide is actually a collection of presentation summaries from the five centers that went around for checkups in the extremely cold region.

It is written in both Russian and English. Five years later, about 160,000 people were screened, and 100,000 data were reported here in Chernobyl.

Diagnostic cytology was introduced in 1993, and the foundation for the international thyroid joint research that

continues to this day was laid here.



At that time between five and ten years after the accident, cesium-137 in children measured by whole body counters is shown on the vertical axis in Bq/kg, and the horizontal axis shows the mapping of the soil contamination where these people lived.

The graph shows a linear relationship, a constant proportional relationship, which makes it one of the evidences to show that the contaminated products were distributed and consumed locally, and therefore causing the contaminants to stay even five, ten years after the accident.

なしむの骨組みと実績

- ・長崎県と市、長崎大学と県医師会など関係機関とともにオール長崎医療界による世界の被ばく医療支援体制の構築と持続的運営
- ・チェルノブイリやカザフスタンの世界の被ばく医療に関わる人材育成と教育・伝承活動
- ・ソ連崩壊から初期5年間の試行錯誤の活動実績から永井隆平和希求の精神の継承
- ・なしむからNASHIMへの情報発信；出前事業、各種出版物や広報誌
- ・2011年3月11日東日本大震災と福島原発事故に関わる医療支援活動

Five years have already passed, and as for what we had done then in 1992, with cooperation of the all-Nagasaki medical community, with the efforts of then Governor Takada of Nagasaki Prefecture, Mayor Motoshima of Nagasaki City, and President Tsuchiyama of Nagasaki University, who supported the backbone of this organization, the Nagasaki Association for International Hibakusha's Medical Care, NASHIM, was established.

The primary purpose of NASHIM was to develop medical professionals and education in radiation medicine, in

conjunction with the Chernobyl-Sasakawa medical support activities.

Starting from 1995, we took the opportunity to participate in the training program of medical personnel around the Semipalatinsk nuclear test site in the Republic of Kazakhstan.

The Nagai Takashi Memorial Nagasaki Peace Prize, established in 1995 to commemorate 50 years since the atomic bombing, honors not only those who have contributed to nuclear medicine but also many other medical professionals who were active in Chernobyl and Semipalatinsk.

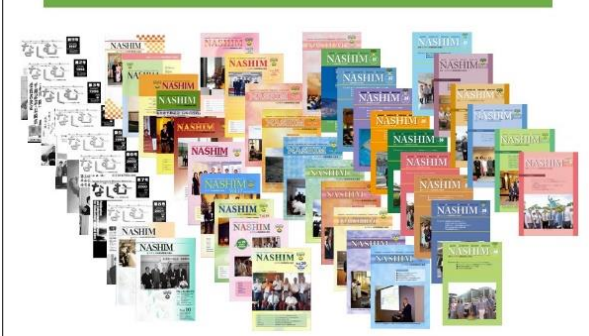
In this context, we have also made efforts to disseminate information about NASHIM.



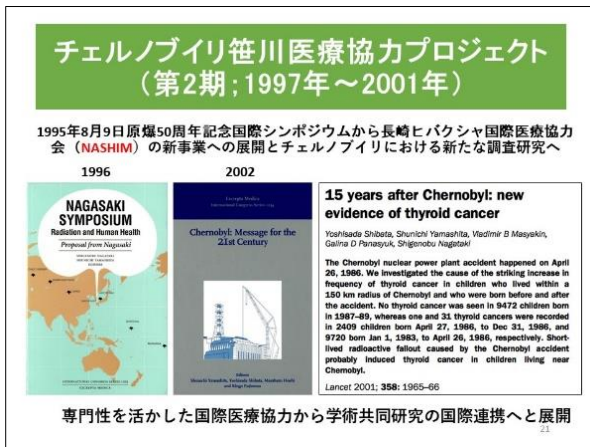
The reason why I wrote 'NASHIM' in hiragana in the title of my presentation is because we used to write NASHIM in hiragana back in the early days.

It is extremely important to raise awareness in the community, and at the same time, we have also made NASHIM available on our website so we can update the details on the trainees in nuclear medicine from the former Soviet Block every summer, as well as the trainees we invite from South Korea who are also survivor of radiation and living in Korea.

広報誌；なしむからNASHIMへ



Again, the NASHIM newsletter started in hiragana and has changed to English since its 10th issue. Naturally, we should focus on international promotional activities, and like HICARE in Hiroshima, it plays an important role in continuing activities that contribute to the development of medical professionals to confront nuclear and radiation disasters around the world. The contents of the newsletter are mainly introduction of the exchange program that I mentioned earlier. In addition to local support and assistance, we are also required to disseminate more information ourselves.



I would like to introduce a little bit about the Chernobyl-Sasakawa medical cooperation project, Chernobyl Phase II, which I mentioned earlier.

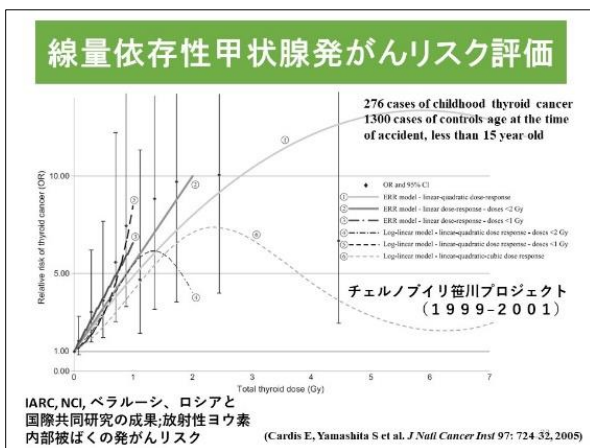
Through repeated international symposiums and other activities, we have been able to study the exposure of approximately 30,000 children in Chernobyl, those who were born before and after the accident. And we have been able to make a comparison study, which has brought to a major discovery.

The data for children born before and after the accident are

shown in the paper published on Lancet on the right.

It means that the effect of exposure to radioactive iodine immediately after the accident was suggested as the main cause of thyroid cancer in children.

This data was compiled mainly by Dr. Shibata, and his epidemiological approach has had a significant impact since then.



In particular, I will show the relationship between radiation exposure and cancer risk.

In Chernobyl, the cause of the increase in thyroid cancer in children after about 4 to 5 years from the accident was the internal exposure of the thyroid gland to a large amount of radioactive iodine through the food chain, especially through milk.

On the other hand, the victims of Hiroshima and Nagasaki were exposed externally.

The dosimetry of radioiodine, which causes internal exposure

specifically and selectively to the thyroid gland, has been very difficult.

Joint dosimetry with Belarus, Russia, or with international organizations showed very large errors or deviations, as shown on the vertical axis of this paper, and even using this type of model analysis, the effects of low-dose exposure seemed virtually nonexistent or undetectable.

These findings, or facts, have led to false understandings, preconceptions, prejudices, and rumors about subsequent accident at the Fukushima nuclear power plant.

Although thyroid doses in Chernobyl/Fukushima are completely different, and the age of onset of cancer risk is also different, it is very difficult to correctly understand the difference between the amount of radiation that affects people's health, and the amount of protection involved in regulation, and what was worst is that we were encountering shortage on the human resources with wide range of expertise across multiple professions on the front line in this issue.

The point is that exposure, especially at low dose rates, is the cause of the ongoing difficulties in radiation risk communication regarding the effects.

In this context, NASHIM has been doing a great job.



On March 11, 2011, we immediately saw the devastating images of tsunami on TV and learned of many casualties. Immediately after this unprecedented disaster, we held three public symposiums in Tokyo the following June. This slide shows some of the contents from the symposiums.



The areas designated as "not safe enough to go back" with higher contamination levels, nearly 120,000 people have been forced to evacuate for a long period of time, and up to 160,000 people, including those who voluntarily evacuated, have been forced to leave the prefecture. In fact, this situation continues with nearly 20,000 people who are still unable to come home in some areas of Hamadori. It has been almost 11 years since the accident, and the medical professionals and government officials who were active at the time have been replaced by a new generation, and it is a fact

that the situation is beginning to fade away.



In the midst of these activities, NASHIM held a roundtable discussion in 2015 to commemorate 70 years since from the atomic bombings and radiation exposure. At Nagasaki University, professors at the Atomic Bomb Disease Institute are leading the way, and many others have also supported NASHIM's activities. I believe that looking back at these milestones and re-learning the collection of records will open up future prospects for NASHIM.

21世紀の原爆後障害研究
 ー第50回原子爆弾後障害研究会 (2009.6.7)「広島・長崎と疫学」からー

被爆者対策	放射線研究
<ul style="list-style-type: none"> ・高齢化対策 ・後障害治療 ・心理的影響 ・健康管理体制 (レコードリンケージ) ・資料収集とデータベース化 	<ul style="list-style-type: none"> ・生涯健康リスク ・低線量被ばくの影響 ・がん以外の疾病・異常 ・分子生物学 (感受性・発がん・免疫) ・遺伝 (先天異常・発がん)

冷戦時代の分断と対立からグローバル社会の流動化と革新的な地政変化を受けて環境危機の時代へ
人新生から新被ばく医療学へ

As an example of learning from the past, in May 2009, before the Fukushima nuclear power plant accident, Dr. Itsuzo Shigematsu, the former president of Radiation Effects Research Foundation (RERF), gave a special lecture, "Hiroshima · Nagasaki and Epidemiology" at the 50th Atomic Bomb Damage Study Conference. As shown in the diagram, care for Hibakusha and radiation research are always paired, making proposals in response to the changing times. For the care of the aging survivors, it is important to provide care not only for cancer and non-cancer chronic diseases but

also for mental and psychological effects, maintain a health care system, collect and store data, and create databases.

On the other hand, research on radiation effects includes the continuing lifetime health risks or advancement of research on low-dose exposure effects, molecular biological approaches, and genetic effects.

21世紀のヒバクシャ

21世紀のヒバクシャ
 被爆者からヒバクシャへ
 放射線障害研究の最前線
 第13章
 被ばく医療の課題
 (大津留晶; 長崎大学病院永井隆記念
 国際ヒバクシャ医療センター
 ▶ 魯迅と藤野源九郎)
 被爆地ナガサキからのメッセージ
 (被ばく医療という歴史の検証)
 (ナガサキの心を世界に)

柴田義貞編集代表
 2011年3月

After this lecture, Dr. Shigematsu published a book on epidemiology in Japan.

Unfortunately, he passed away on February 6, 2012, 10 years ago, but he left behind an important message of "Paradigm shift to create new".

That is, the development of epidemiology in Japan progressed thanks to the years of research and study of the atomic bomb survivors, and he always stressed the importance of putting the survivors first in the scientific search for the truth, and at the same time, hoped for new innovations in this field.

Today, we live in an era of a global crisis, and this is why new perspectives are important for nuclear medicine. In fact, in line with the words from Dr. Shigematsu and Dr. Nagataki, a comprehensive book titled "Hibakusha in the 21st Century" was published by NASHIM in March 2011.

Written by volunteer professionals, the book doesn't just focus on the global nuclear accident and the issues of radiation victims.

We should particularly highlight Chapter 13, where the challenges of nuclear medicine is discussed.

Dr. Akira Otsuru, who wrote this chapter, simply stated the essence of the development of medical professionals for nuclear medicine that NASHIM should fulfill, and this was just before the Fukushima accident.

At that time, Dr. Otsuru was an associate professor at the Nagasaki University Hospital Nagai Takashi Memorial International Hibakusha Medical Center, where he supported victims overseas, especially the atomic bomb survivors in Korea, also accepting and treating radiation-exposed patients from overseas.

Perhaps because of this experience, he implied that NASHIM should take the direction to continue to develop doctors like Genkuro Fujino, who developed Lu Xun.

In other words, the development of educators and leaders who, selflessly and without discrimination, care for the exposed patients.

And as for us, the members of ABDI (Atomic Bomb Disease Institute, Nagasaki University), we ended up positively contributing as usual during the chaos and confusion immediately after the Fukushima accident, but we believe this is part of our mission and responsibility, as we represent Nagasaki.



There is no ending to the support activities from Nagasaki to Fukushima over the past almost 11 years.

So much so that we continue to dispatch personnel and support. One of the examples is our collaboration with Fukushima Medical University.

Another one is our involvement in the launch and operation of the citizens' health survey project in the prefecture.

However, many things remain challenging. There is the issue of decommissioning, tritium treated water, and interim storage, and more.

The Great East Japan Earthquake and Nuclear Disaster Memorial Museum has opened in Futaba Town as a restoration project to accelerate recovery in Fukushima, which is still in the midst of a difficult situation. We are very happy that Professor Noboru Takamura of ABDI has been appointed as the first director of the museum, and this is one of the achievements of our support from Nagasaki.



Let me introduce some of Nagasaki University's involvement that support NASHIM activities, in the reconstruction activities for Fukushima.

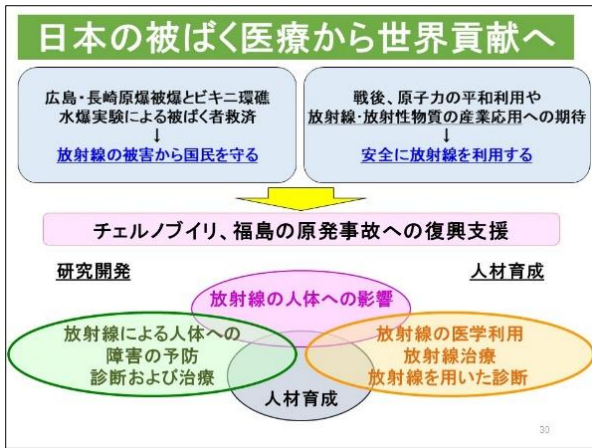
For the past 10 years, Dr. Takamura's group has been involved from the very beginning in supporting the return to the homes while staying close to the towns and villages whose entire population were forced to evacuate, while conducting environmental and food monitoring, holding informal gatherings and home visits, and providing disaster and nuclear medicine in cooperation with the Master's

Program in Joint Major in Disaster and Nuclear Medicine at Nagasaki University and Fukushima Medical University.

Starting with Kawauchi Village, he has concluded collaboration agreements with Tomioka Town, Okuma Town, and Futaba Town, and sent people to the recovery centers to work in the field.

The lower part of the slide shows the situation of the project. It is making a great contribution to the Ministry of the Environment and Reconstruction Agency's Reconstruction Knowledge Project.

The above activities to support the reconstruction of Fukushima are not limited to the field of health and medical care.



Nagasaki University has established the Fukushima Future Creation Support and Research Center, and reconstruction projects are underway at the university level, especially in the Faculty of Education.

The protection of the public from radiation damage and injury, which originated in the support activities for the atomic bomb survivors in Hiroshima and Nagasaki, in other words, the contribution is required to protect from radiation in today's risky society to nuclear medicine, which is an emergency exposure medicine, as well as medical

and industrial applications of peaceful use of radioactivity and radiation.

While reconstruction support for the nuclear accidents of Chernobyl and Fukushima is ongoing, the promotion of science and the development of medical professionals in the area of human health effects, diagnosis and treatment, and medical applications that are listed at the bottom of this slide, are of course major themes that NASHIM, as an all-Nagasaki medical community, can promote.



Another exit strategy for NASHIM activities is to continue to maintain solidarity with Fukushima and to develop human resources for nuclear medicine.

This is an important position. The Fukushima Innovation Coast Initiative, shown on this slide, has medical care and radiation as keywords, in addition to decommissioning, robotech, renewable energy, agriculture, forestry, and fisheries. In place of the hard aspects that have been in place for the past 10 years,

the next decade will require the enhancement of the soft

aspects and the development of human resources to accelerate the reconstruction process with spirit.

However, the population decline resulting from the long-term evacuation and the remaining zones restricted as "not safe enough to go back" is a very challenging issue.

In the midst of all this, expectations are high for the new Fukushima International Research and Education Organization, which is scheduled to be newly established in 2023.

However, we are facing a very difficult road ahead in terms of how far it will be able to play a commanding role in the Fukushima Innovation Coast Concept, and how it will develop its educational functions and human resource development platform.

ポスト被爆者のNASHIMへ

- 長崎県と市、長崎大学と県医師会など関係機関と連帯、連携しオール長崎医療界による世界の放射線事故や原発災害サイクルへの国防対応
- 福島との協働による世界の被ばく医療に関わる人材育成と教育・伝承活動の持続的活動
- 少子高齢化社会における“なしむからNASHIM”へのグローバル事業の新展開（交流事業）
- 被ばく医療の歴史の生き証人として、地政学的な特色を生かしたグローバル連携の強化
- …… …… ……

▶ 情報発信と連携強化

How can we pass on the lessons and wisdom from the atomic bomb survivors and apply them to the Hibakusha medical support?

In the second part of today's session, a panel of professionals will discuss this question, and I would like to summarize a few things in advance.

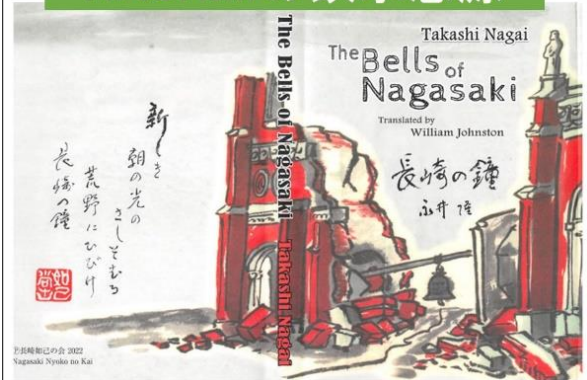
First of all, we need to evaluate the achievements of the past 30 years and sustain and develop them.

I think it is very important to incorporate the concept of national defense, or as I say here, national and individual

security, into the preparation and response to the disaster cycle of nuclear and radiological accidents.

On top of that, it is our involvement in Fukushima, and the dissemination of information and strengthening of cooperation from the affected cities in the global community.

NASHIMの飲水思源

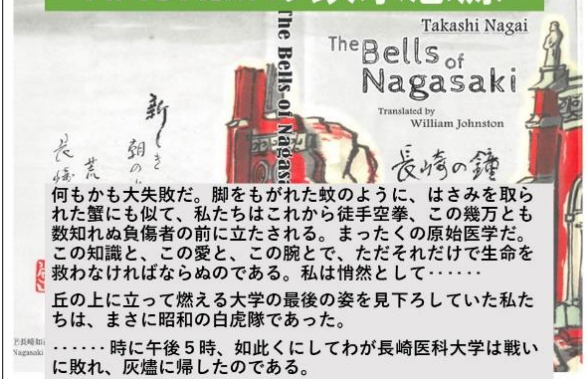


In the midst of preparing my talk for today, this book was actually sent to Fukushima.

Considering our roots, Dr. Masao Tomonaga, the chairman of the the Nagasaki Global Citizen's Assembly for the Elimination of Nuclear Weapons, and his team have published the English translation of Dr. Takashi Nagai's "The Bells of Nagasaki". Not only can we read the book in English and Japanese at the same time, but we can also learn a new thing by learning about the translator, the late Father Johnston, a professor at Sophia University.

NASHIM has already published Dr. Takashi Nagai's report on the relief efforts immediately after the atomic bombing in English, and together with the complete works of Dr. Takashi nagai, the book will serve as a reference for the starting point of NASHIM activities, as "When you drink water, think of its source."

NASHIMの飲水思源



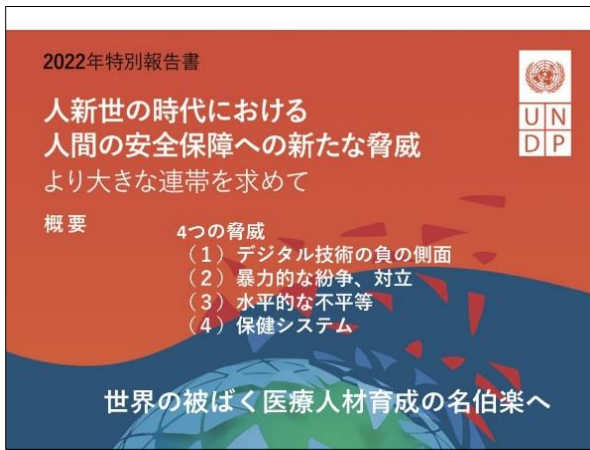
This is a passage from the Bells of Nagasaki.

The text posted here, six hours after the atomic bombing, states that the medical college was reduced to ashes.

Even in the depths of despair, Dr. Takashi Nagai's words and actions immediately after the disaster taught us the importance of living with "positive thinking" in the midst of difficulties and hardships, such as "turning the misfortune into fortune" and "the earth lies at the bottom of all of the despair".

He seems to be teaching us that it is right when we face such misfortune and bad luck, as well as absurdity and inevitable

events, that this kind of new human activity and way of being becomes a source of recovery and a great driving force to revive the individual and the earth.



Finally, I would like to share a few words about the United Nations Development Programme, UNDP Special Report in 2022.

From the philosophy of human security led by Sadako Ogata and Amartya Sen in 1994, the report spans nearly 30 years.

Four threats are summarized in the report, which says that we should act while considering the entire global ecosystem in human society, keeping in mind the crisis caused by the recent pandemic and the organisms on the planet.

One of them is the warning against the negative aspects of

digital technology and information overload.

Violent conflicts and confrontations, which are very evident in Ukraine today, and the response to these problems, as well as horizontal inequalities, and the fourth, health systems, is one of the roles of NASHIM that I would like to emphasize today.

In the new context of the Anthropocene era, it is becoming increasingly important to continue cross-border radiation care and to expand new human networks and radiation risks.

In the new context of Anthropocene era, continuation of transnational radiation exposure medicine, the expansion of new human networks, and radiation risks will become more and more important.

And the site of ongoing reconstruction in the present exposure situation is in Japan, the very place of Hamadori in Fukushima Prefecture.

I believe that expanding the framework of human security from Chernobyl to Fukushima, as both Hiroshima and Nagasaki experienced the atomic bombings, will lead to adding "solidarity" to the human security strategy of "protection" and "empowerment" originally proposed in the Ogata-Sen Report (2003).

I would like to conclude my lecture by wishing that professional resource development in nuclear medicine, which is the foundation of NASHIM activities for the next 10, 20, and even 100 years, will deepen cooperation with global society and become a greater solidarity, and that NASHIM will become a group of masterful leaders in the risk society of modern science and technology.

Thank you very much.