Good evening. I am Emiko Konishi, chair of The Radiological Nursing Society of Japan.

I am Kouji Yoshida. I finished a Master’s course in radiological nursing at Nagasaki University. Now
I teach radiation Disaster Medicine at Fukushima Medical University. It is a great honor to present our activities in response to the Fukushima nuclear accident.

The Radiological Nursing Society of Japan
日本放射線看護学会

Aim: to lead best practice and increase knowledge in radiological nursing across clinical, community, and industrial settings in daily as well as in emergency situations.

Knowledge skill on Radiation health effects is key for practice.
実践の要は放射線健康影響の知識

Our society aims to lead best practice and increase knowledge in radiological nursing across clinical, community, and industrial settings in daily as well as in emergency situations.

With the specialized knowledge and skills on radiation and its health effects, radiological nurses care for not only patients receiving radiation treatment but also for people living in accident prone communities, persons suffering radiation injuries,
The Fukushima nuclear accident and radiological nursing
福島原発事故と放射線看護

- **Triple disasters in Fukushima: earthquake, tsunami & Nuclear Power Plant accident**
  複合災害･･･地震、津波、原発事故/放射線
- **Scarcely any disaster specialist nurses to Fukushima (within nuclear evacuation zone)**
  警戒区域内へのDMATナースの派遣殆どなし
- **Active involvement of radiological nurses to support Fukushima**
  放射線看護師の福島支援活動

Four years ago, Fukushima was devastated by triple disasters: earthquake, tsunami and radiation. Scarcely any disaster specialist nurses (DMAT nurses) were deployed to Fukushima, particularly within nuclear evacuation zone. Our Society members took important roles in both initial and recovery phases of the accident.
I present our activities right after the nuclear accident.

In the initial phase, we cared for emergency workers and Fukushima residents. We worked at the Offsite Center, the emergency room of the nuclear power Plant, and so on.
This slide shows nursing activities in REMAT. National institute of Radiological Sciences, established the “Radiation Emergency Medical Assistance team”, the REMAT, in 2010. On March 12, just 17 hours after the earthquake, REMAT was dispatched from Chiba, to the off-site center of Fukushima by helicopter. We went with medicine and dosimeters.
As you see in this slide, the nurses were at the heart of emergency phase activities of the REMAT.

Health and radiation exposure management of the Plant workers who were assigned to stabilize the reactors

Establishment of a temporary medical center at J-Village.

Health care, first aid, and radiation protection teaching for evacuees’ temporary house visit.
The following two slides show my efforts in the midst of the accident.

On March 16, our Fukushima Medical University hospital received a call to treat a wounded worker from the nuclear Plant. I, together with an emergency doctor, volunteered for the mission. We rushed to the worker an emergency care and then transported the worker back to our Hospital by helicopter. The reactors were unstable and therefore the situation was scary. But we measured radiation during the work, and executed the mission with a sense of security and confidence.
On-site activities
緊急被ばく医療機関、サイト内救護室での活動

- My colleague nurses and I coordinated the set-up of a system to radiation emergency medicine and advanced trauma life support.
- We also trained the medical staff for the treatment and decontamination of contaminated patients.

These are my on-site activities

My colleague nurses and I coordinated the set-up of a system to radiation emergency medicine and advanced trauma life support. We also trained the medical staff for the treatment and decontamination of contaminated patients.

All those emergency activities demanded full energy and were extremely stressful. But what moved me to the mission was firm will towards the action and my specialized knowledge ON radiation.
The 3rd UN World Conference on Disaster Risk Reduction Public Forum
Activities of Japanese Nursing Academies related to recovery from the Great East Japan Earthquake and Tsunami, and restoration of daily living
第 3 回国連防災世界会議パブリックフォーラム「東日本大震災からの復興と生活再建のための看護系学会の活動」

March 14, 2015, 17:30-19:30, Sendai, Japan

Radiological nursing in the Recovery Phase
復旧期の放射線看護活動

- Radiation level decreasing but fears spreading
  放射線レベル低下、しかし不安は拡大

- UNSCEAR 2013 Fukushima Report: The most important health effect is on mental and social well-being, related to the fear and stigma from the perceived risk of radiation exposure
  国連科学委員会2013福島レポート: 事故の最も重要な影響は放射線そのものの生物影響ではなく、三重災害による精神的・社会的な苦痛、および各人の放射線リスクの感じ方に起因する恐れと偏見である

The Fukushima situation moved to recovery phase in early 2012. While radiation level in the environment is decreasing, radiation fear in the public are spreading. In Fukushima, people continue to follow an unhealthy and unnecessarily protective lifestyle from fears and misunderstanding about exposure. Public health nurses (PHNs) are concerned about the residents’ health problems such as children’s obesity resulting from such a lifestyle. The recent UNSCEAR Fukushima Report(4) states: “The most important health effect is on mental and social well-being, related to the enormous impact of the earthquake, tsunami and nuclear accident, and the fear and stigma related to the perceived risk of exposure to ionizing radiation”.
The 3rd UN World Conference on Disaster Risk Reduction Public Forum
Activities of Japanese Nursing Academies related to recovery from the Great East
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To deal with the persisting public health challenges in Fukushima, we are giving
face-to-face interactional lectures to resident groups such as mothers of young children
and elderly persons. We share daily life concerns such as eating, drinking and outdoor
activities in combination with the provision of updated radiation monitoring data.
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**Effects of interactions**
車座対話がもたらしているもの

- “Oh, it is ok to regain normal life! Will tell today’s knowledge to my family and neighbors”
もう普通に生活していいんだ！夫にも近所にも話す
- Also, this approach, by working with the local PHNs, has served as a practical radiation education for those nurses
保健師との協働→保健師の実践困難の共有、放射線の学び
- **Empowerment of resident/PHNs/researchers**
住民/保健師/研究者のエンパワーメント

The interactions have eased the residents’ anxieties about radiation and encouraged them to regain their normal life style.
Also, this approach, by working with the local PHNs, has served as a practical radiation education for those nurses.
In conclusion, we want to say two things
1) First, Authorization of the Certified Nurse Specialist in radiological nursing
Graduate degree program in radiological nursing has been established in 3 universities.
We, the graduates of the program have been at the heart of response to the whole process of the Fukushima nuclear accident.
It is utmost important to authorize the program as the Japanese Nursing Association defined Certified Nurse Specialist (CNS) course.
2) Radiological nursing education.

After the accident, confusion happened by the lack of knowledge about radiation and its health effects in society. Doctors’ and nurses’ lack of radiation knowledge made the problem even worse. Basic nursing education should include content related to radiation, its health effects and protection.
Preparation for emergency through daily practice and education
平常時から有事に備える

Thank you!!
The Radiological Nursing Society and the Fukushima nuclear accident

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Introduction

The Radiological Nursing Society of Japan aims to lead best practice and increase knowledge in radiological nursing across clinical, community, and industrial settings. With the specialized knowledge and skills on radiation, its health effects and protection, radiological nurses care for not only patients receiving radiation treatment but also for people living in accident prone communities, persons suffering radiation injuries, and radiation industry workers in daily as well as in emergency situations.

The Fukushima nuclear accident and radiological nursing

Fukushima prefecture (hereafter ‘Fukushima’) was devastated by the triple disasters in March 2011: earthquake, tsunami and radiation. Ever since, all the domains of daily life have been affected, i.e. health, social, psychological, cultural, ethical, environmental, etc. Scarcely any disaster specialist nurses (DMAT nurses) were deployed to Fukushima, within nuclear evacuation zone. Radiological nurses (here after, ‘the Nurse’ ) took important roles in both initial and recovery phases of the accident. Internationally, there is a paucity of literature concerning nursing activities in nuclear/radiation incidents\(^1, 2\).

Radiological nursing in the initial phase of the accident.

The Nurse cared for emergency workers and people evacuated from their houses. Places where the Nurse worked included the Offsite Center (local headquarters established by the government 5km off the accident Plant), emergency room of the Plant, Temporary Medical Center in J-Village, a local hospital designated for radiation emergency, and evacuation centers.
Activities as the REMAT® Nurse

National institute of Radiation Sciences (NIRS) established the Radiation Emergency Medical Assistance Team (REMAT®) in 2010. On March 12, 2011, REMAT®, including the Nurse, was dispatched from NIRS in Chiba to Fukushima by helicopter of Self Defense Force. Based in the Offsite Center for 100days, the Nurse engaged in the following work:

- For the Plant emergency workers: iodine tablet administration, health assessment, radiation monitoring and decontamination.
- For the affected citizens: collection of health information and provision of consultation concerning radiological health.
- Establishment of a temporary medical center in J-Village jointly with the Japanese Association for Acute Medicine (JAAM)
- Radiation protection training for doctors, nurses, etc from JAAM and other organizations
- Radiation protection teaching and nursing care for the evacuees who temporarily visited their houses.

Logistics activities by the Nurse 3)

- Emergency care and transport of a wounded worker
  On March 16, 2011, the Nurse, together with an emergency doctor, volunteered to give an emergency care and transport a wounded worker from the nuclear Plant site to Fukushima Medical University Hospital by helicopter. The reactors were unstable and therefore the situation was scary. They measured radiation during the work, and executed the mission with a sense of security and confidence.
- Activities at the emergency room of the Plant
  The Nurse coordinated the set-up of a system for accepting possible radioactively contaminated patients and advance trauma life support. The nurse also trained the deployed medical professionals for the treatment of possible radiation emergency patients and decontamination procedures.

Radiological nursing care in the Recovery Phase of the accident
With the Government’s announcement of the stabilization of the accident stricken reactors, the Fukushima situation moved to recovery phase early 2012. While environmental radiation level is decreasing, rumors, fears, concerns and anxieties about radiation exposure persist among the general public largely due to the sensational media coverage throughout the whole process of the accident. Notably in Fukushima, the residents continue to follow an unhealthy and unnecessarily protective lifestyle from fears and misunderstanding about exposure although radiation levels in their communities have been confirmed to be safe. Local public health nurses (PHNs) are concerned about the residents’ health problems such as children’s obesity resulting from such a lifestyle. The recent UNSCEAR Fukushima Report\(^4\) states: “The most important health effect is on mental and social well-being, related to the enormous impact of the earthquake, tsunami and nuclear accident, and the fear and stigma related to the perceived risk of exposure to ionizing radiation”. PHNs, while being aware of these public health challenges, have difficulty teaching the residents mainly due to the lack of detailed technical knowledge about radiation. The following efforts present an effective radiological nursing approach.

- **Dialogues with residents and PHNs by regular visit**
  Multidisciplinary researchers from radiological nursing, public health nursing, and radiation protection regularly visit communities in Fukushima to give face-to-face interactional lectures to specific target populations such as mothers of young children and elderly persons. Sharing issues in their daily life such as eating, drinking and outdoor activities in combination with the provision of updated radiation monitoring data related to those activities, the interactions have eased the residents’ anxieties about radiation and encouraged them to regain their normal lifestyle. Also, this approach, by working with the local PHNs, has served as a practical radiation education for those nurses.\(^5\).

- **Health consultation for evacuees by living in a community Lit**
  A graduate of a radiological nursing program stays in Kawauchi village for an extended period as a public health nurse in charge of health consultation concerning...
radiation. The village was completely evacuated after the nuclear accident until the end of 2011. For residents who have gradually returned home, she monitors radiation, listens to their life stories, and gives health assessment, lifestyle advice, and regular interactive lectures.\(^6\)

**Most important agenda: nursing education prepares for possible radiation/nuclear incidence**

- **Authorization of the Certified Nurse Specialist in radiological nursing**
  
  Years have passed since a graduate degree program in radiological nursing was established in 3 universities in Japan. The graduates of the program have been at the heart of the response to the whole process of the Fukushima nuclear accident. It is of urgent importance to authorize the program as the Japanese Nursing Association defined Certified Nurse Specialist (CNS) course.

- **Training of practice nurses to prepare for possible radiation/nuclear emergency**
  
  More practice nurses should be trained to prepare for possible radiation/nuclear emergency situations. The courses are provided at NIRS and Fukushima Medical University. In order to invite more nurses to these courses, this arrangement should be more widely informed to the nursing world.

- **Inclusion of radiation content in undergraduate nursing curricula**
  
  After the accident, social confusion happened by the lack of knowledge about radiation health effects. Nurses and other health professionals are expected to disseminate appropriate information about radiation health effects through everyday communications with patients and citizens. To this end, basic nursing education should include content related to radiation, its health effects and protection\(^7\).

**References**

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4. UNSCEAR 2013 Report to the General Assembly with Scientific Annexes.


福島原子力事故における日本放射線看護学会の貢献

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はじめに
日本放射線看護学会は、臨床、地域、産業等、看護活動の場を横断して、平常時より事故・異常・緊急時における放射線・原子力に関わる看護実践と知の集積を目指すことを目的としている。放射線とその影響・防護に関する専門知識は放射線看護実践の根幹をなす専門知識である。

福島原子力事故における放射線看護師の貢献
2011年3月の東日本大震災とそれに連鎖した原発事故は、心身の健康、社会、倫理、環境を含む日常生活のあらゆる側面に影響をもたらした。放射線看護師は、福島県警戒区域内にDMAT看護師の派遣がほとんどない状況下、放射線看護師は、福島県警戒区域内にDMAT看護師の派遣がほとんどない状況下、事故初期の緊急時から被ばく医療・支援活動を展開するとともに、事故に巻き込まれた一般公衆の生活上の混乱やストレス、不安に関わってきた。原子力・放射線事故・災害に対する看護職の関わりの知は世界的にも十分に集積されていない1,2）。

福島原子力事故直後の看護
放射線看護師は、原子力発電所緊急作業員及び避難指示によって避難した住民を看護した。活動場所は、オフサイトセンター（事故プラントから5kmの地点に設置された最前線の緊急事態応急対策拠点施設）、事故プラント内救急治療室、J-ビレッジ内仮設救急医療施設、福島県被ばく医療指定病院、および避難センター等である。

REMAT看護師としての最前線活動
放射線医学総合研究所（NIRS）は、2010年に緊急被ばく医療チーム（REMAT®）を整備した。今般の災害発生17時間後の3月12日朝8時に、医師、看護師等からなるREMAT®が自衛隊ヘリコプターで現地に向かった。現地に100日間滞在し、オフサイトセンターを拠点に活動した。REMAT®看護師の主な実践は以下のとおりである。

原子力発電所緊急作業員に対する安定ヨウ素剤の配布、放射能汚染の測定と除染、お
第3回国連防災世界会議パブリックフォーラム「東日本大震災からの復興と生活再建のための看護系学会の活動」

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疾患管理

- 被災者の情報収集とコンサルテーション
- Jビレッジ内への救急医療施設の設置（日本救急医学会と協働）
- 派遣された医療スタッフに対する被ばく医療・除染等のトレーニング
- さらに、長期的な避難に備え、住民がもとの自宅へ一旦戻り必要なものを持ち出すための一時立ち入りが始まり、立ち入り前の住民に対する放射線防護と健康に関わる指導やコンサルテーションを行った。

後方支援

- 負傷作業員の救急処置と搬送（2011年3月16日）：救急医と放射線看護師（大学院放射線看護コース修了生）が救助要請に応じて救急処置を行うとともに、ヘリコプターで原子力発電所から福島県立医科大学病院（指定被ばく医療機関）へ搬送した。原子炉は前日にも水素爆発があり、不安定で情報も乏しく、緊張したが、両医療者は携行した線量計で終始線量を確認、安心と安全をもって責務を遂行した。
- 原子力発電所内救急室活動：放射線看護師は、患者受け入れ・初期診療等の体制整備と、派遣医療スタッフに対する被ばく医療・除染等の教育訓練を行った。

福島原子力事故復旧期の看護

2011年12月16日、政府による原子炉安定状態が確認され、原子力事故後の状況は復旧期に移行した。除染プログラムと放射性物質の自然崩壊により、環境放射線レベルの低下が続いているいっぽう、センセーショナルなメディア報道や風評などにより、一般人の被ばく不安・恐怖が事故直後以来続いていた。とくに福島の住人は、屋外活動を避ける、水道水を避けてペットボトル水を使う、地産の食品を食べないなどの過度に防護的な生活スタイルをとる例が多く、それが小児の肥満や成人の慢性疾患の増加などの健康データにあらわれている。最近発表された国連科学委員会（UNSCEAR）の福島レポートは、「事故の最も重要な影響は放射線そのものの生物影響ではなく、大震災、津波、原発事故による精神的社会的な安寧、および各人の放射線リスクの感じかたに起因する恐れとstigmaである」（訳と抜粋は筆者）と述べており、復旧期における健康問題は保健師を含む公衆衛生の課題となっている。しかし、わが国の看護師・保健師教育は放射線教育はほとんどなく、保健師は住民に対する健康指導に困難を抱えている。これらの背景から、放射線看護師は以下のようなリスクコミュニケーションをとおり、住民と保健師に対する支援活動を行っている。
地域住民・保健師との対話・リスクコミュニケーション
福島県浜通りの市内各地区の保健師が実施しているターゲット集団ごとの小グループ健康教室（母子教室、高齢者教室等）に、放射線看護・公衆衛生看護・放射線防護の多職種研究者が定期的に出向き、参加住民への放射線のミニ講和を継続している。食べ物や水、屋外活動等の日常生活上の関心事や、保健師・地域住民・専門家の三者が車載になって共有し、地域の最新の放射線実測データを用いて研究者がわかり易く解説する。この対話で、住民は自発的に「安心した」と表出し、保健師にとっては業務に直結した放射線の知識を実際的に学ぶ機会となっている。

避難住民の帰還に向けた住民支援
大学院放射線看護専門コースを修了した放射線看護師が放射線専門の保健師として川内村に常駐し、避難所から帰還した住民のために、放射線モニタリング、傾聴とコンサルテーション、健康・ライフスタイルのアセスメントと指導、および定期的な放射線教育のを行っている。

今後の重要課題：放射線が関係する事故・災害に備えた看護教育
放射線看護専門看護師の分野特定促進
大学院放射線看護専門コースがわが国に設置されてすでに年数懸け、その修了生は、今回の原子力事故の緊急期から現在の復旧期に至る全過程で、事故対応・支援の核として重要な役割を果たした。しかし、放射線看護専門コースに対する専門看護師（CNS）としての分野特定が未だに認められていない。今回の原子力事故への日本の看護界の対応は世界の注目するところであり、放射線看護専門看護師の資格認定が焦眉の急である。

実践看護職者の被ばく医療の教育訓練
前項の大学院教育に加え、放射線が関係する事故・災害に備えた実践看護職者の教育・訓練が不可欠である。そのためのプログラムが、放射線医学総合研究所と福島県立医科大学に開設されている。当該プログラムの積極的周知により、放射線看護の知識・技術を有する実践看護職者の育成を更に進められるが有する実践看護職者の育成を更に進める必要がある。
看護基礎教育における放射線教育

今回の原子力事故による社会的混乱は、一般公衆の放射線とその影響の知識不足と誤解が大きく関係している。医療専門職者は、市民や患者との日常の関わりを通じ、放射線防護の基本を人々に伝える責任がある。看護は、その基礎教育に放射線の内容が欠如している現状を早急に改めなくてはならない。当面は、基礎看護学あるいは公衆衛生看護学等の既存カリキュラムに放射線の内容を2コマ程度以上組込むことも、現実的なアプローチと考えられる。
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