

# **POTASSIUM IODIDE (KI) DISTRIBUTION TO SCHOOLS**

## **BACKGROUND INFORMATION**

### **Potassium Iodide-the Basics**

Potassium iodide (KI) is a type of salt that is added to table salt in small amounts so that people have sufficient iodine in their diet to maintain normal healthy thyroid function. KI also is an over-the-counter (OTC) non-prescription medication approved by the Food and Drug Administration (FDA) for protection of the thyroid during a nuclear emergency involving a release of radioactive iodine (RAI). If KI is taken prior to or soon after exposure to RAI, it saturates the thyroid with stable iodine and thereby blocks thyroidal uptake of harmful RAI. Blocking uptake of RAI by the thyroid is crucial for the prevention of thyroid cancer and other thyroid diseases associated with exposure to RAI.

### **Recent History**

In 2001, the Nuclear Regulatory Commission (NRC) amended its NPP emergency preparedness regulations and required states to consider providing KI as a protective measure for the general public to supplement evacuation and sheltering in place in the event of a severe nuclear power plant (NPP) accident. The effective date of that amendment was April 19, 2001. At that time, North Carolina's KI policy provided for the use of KI only for emergency workers and institutionalized populations in affected areas. On June 28, 2002 (following study of this issue by the NC Division of Public Health, the NC Radiation Protection Section, and the NC Division of Emergency Management) North Carolina requested 750,000 doses of KI. Since receiving the tablets in August 2002, the state has worked with local health and emergency response agencies to distribute KI to residents and workers in the 10-mile EPZs of the four nuclear power plants within or adjacent to North Carolina.

### **KI in Schools-Lessons Learned from the Chernobyl Accident**

The next, and perhaps most important, phase of KI distribution --distribution to schools-- is about to begin. This phase is important because scientific studies following the Chernobyl NPP accident have clearly and conclusively demonstrated that children have the greatest risk of developing thyroid cancer and other thyroid abnormalities following exposure to RAI. Following the Chernobyl disaster, thousands of children in the Ukraine, Belarus and Russia did not receive KI prophylaxis and were exposed to harmful levels of radioactive iodine. To date, approximately 2000 cases of thyroid cancer and thousands of cases of other thyroid disorders have been diagnosed in these children. In contrast, Poland provided KI to approximately 10.5 million children and 7 million adults following the accident and saw no increase in rates of thyroid cancer or other thyroid disorders in its population.

## **Precautionary Measures**

Although a serious NPP accident or a terrorist act directed at a NPP in NC is unlikely, one cannot dismiss the possibility of such an event or ignore the existence of a safe and effective tablet that can prevent damage to the thyroid from exposure to RAI. There are a significant number of schools in North Carolina located within a ten-mile radius of nuclear power plants. While evacuation remains the cornerstone of emergency response to a serious NPP event, there are good reasons why KI should be stockpiled in these schools. For example, if, for some unforeseen reason, students and staff cannot be evacuated in a timely manner and are in danger of being exposed to RAI, timely administration of KI (which necessitates it being stored at schools) will greatly reduce the risk of thyroid cancer and other thyroid diseases occurring later in these persons' lives. These considerations underlie the state's Potassium Iodide Committee's recommendation that one KI tablet be available for each student and staff person in all 10-mile EPZ schools. The American Academy of Pediatrics supports this position. In a recent Policy Statement contained in the June 2003 issue of the journal *Pediatrics*, the Academy issued several recommendations, including the following:

*"All children at risk should receive KI before exposure if possible, or immediately afterward. This will require that KI be available in homes located within 10 miles of a nuclear power plant. Child care facilities and schools within 10 miles of a nuclear power plant should plan to stockpile the agent..."*

The Food and Drug Administration is the medical authority on KI in the United States. It conducted a detailed review of the scientific literature on KI, concluding that KI is a safe and effective medication for preventing thyroid exposure to RAI. FDA endorses the use of KI (as a supplementary safety measure to evacuation or sheltering in place) if there is evidence that individuals will be exposed to harmful levels of RAI.

## **Contraindications for taking KI**

The only absolute contraindication to administration of KI is the rare condition of known allergy to iodine. There are two other very rare conditions listed in the enclosed fact sheets that are relative contraindications for administration. As evidence of its safety, of the approximately 10.5 million children and 7 million adults in Poland who took KI to protect their thyroids from harmful RAI released from Chernobyl, most did not experience any side effects. Mild side effects included gastrointestinal distress in about 2% of children and rash in about 1% of children and adults. There were only two allergic reactions, both of which were non-fatal and occurred in adults with known iodine allergy.

## **Authority- Health Directors, Teachers, Nurses and Other School Personnel**

Should a serious NPP event occur in NC, a decision to recommend administration of KI to the public would be made by the State Health Director or Local Health Director (or their designees) when review of pertinent radiological, meteorological or other

information indicates that certain populations may be exposed to harmful levels of RAI. Any public health advisory to administer KI following a release of RAI will be communicated via designated state and local emergency response agencies and the media.

The NC Attorney Generals' Office has concluded that *GS 115C-307. Duties of teachers paragraph (c)*, by interpretation, provides enabling legislation for teachers and other school staff to distribute and administer KI when authorized to do so in an emergency. The statute (cited below) also protects teachers and other staff from civil liability when acting in good faith.

*Duties of teachers. Paragraph (c) To Provide Some Medical Care to Students: "It is within the scope of duty of teachers, including substitute teachers, teacher assistants, student teachers, or other public school employee when given such authority by the board of education or its designee, (i) to administer any drugs or medications prescribed by a doctor upon written request of the parents, (ii) to give emergency health care when reasonably apparent circumstances indicate that any delay would seriously worsen the physical condition or endanger the life of the pupil, and (iii) to perform any other first aid or life saving techniques in which the employee has been trained in a program approved by the State Board of Education: Provided that no one shall be required to administer drugs or medication or attend life saving techniques programs. Any public school employee, authorized by the board of education or its designee to act under (i), (ii), or (iii) above, shall not be liable in civil damages for any such authorized act or for any omission relating to such act unless such act or omission amounts to gross negligence, wanton conduct or intentional wrongdoing. Any person, serving in a voluntary position at the request of or with the permission or consent of the board of education or its designee, who has been given the authority by the board of education or its designee to act under (ii) above shall not be liable in civil damages for any such authorized act or for any omission relating to such act unless the act amounts to gross negligence, wanton conduct or intentional wrongdoing. "*

## **Record Keeping-Opt-in versus Opt-out**

Based on discussions with legal staff in the Attorney General's Office, administration of KI in an emergency could fall under the provisions of either section (c) (i) or (c) (ii) above. **Given the OTC status of KI, its documented safety, and the desirability of keeping paperwork and record keeping to a minimum, you may wish to utilize section (c) (ii) above and make your local program an "opt-out" program in which KI would be distributed to all students except those who opt-out via the enclosed draft parental/guardian consent form. Opt-out students' names could then be kept with the KI supply. If your school has before-school or after-school activities that are regulated under the state's day care regulations, those regulations may require that you obtain signatures from parents/guardian denoting that they either opt-in or opt-out for their child. The enclosed sample form provides for that situation.**

## **School Health MOUs between Local Health Departments and Local School Boards**

From an administrative standpoint, information presented by local health directors on the KI Committee suggests that the simplest and most efficient means to assure distribution of KI to 10-mile EPZ schools and its timely administration in a real nuclear power plant emergency is to amend existing school health memoranda of understanding (MOUs) between local health departments and local school boards. The state KI Committee has developed a School Health MOU template for KI Distribution/Administration that may be helpful in this effort. Under the MOU, county health departments would make KI available to schools and provide consultation on public health related issues. Individual school principals/administrators would be responsible for developing a school KI plan and identifying staff willing to participate in the distribution/administration of KI to students in an emergency. The NC Board of Nursing has determined that distribution/administration of KI in an NPP emergency falls within the proscribed scope of practice for RNs and LPNs working as school nurses (see attached letter). All other school staff participating in an emergency would be covered by the education law cited above.

### **Additional Information**

The state's KI Committee also developed several additional materials designed to assist you in the logistics of this issue. These include a fact sheet on KI for distribution to teachers, administrators and staff and a fact sheet for distribution to parents and guardians of students. The Committee recommends that a short explanatory cover letter (see enclosed sample from Carolina Beach School noted below) from the school principal accompany the Parent Pack (KI Fact Sheet for Parents and KI Opt-in/Opt-out Form). These materials should be included in the information packets to parents/guardians that are distributed to students in August.

Following your evaluation of this issue, please contact your local health director to answer any questions and to schedule distribution of KI to your schools. We want to have this program in place for students in all 10-mile EPZ schools prior to the beginning of the 2003-2004 school year. One county, New Hanover, has already distributed KI to the sole New Hanover school (Carolina Beach School) in the 10-mile EPZ of the Brunswick NPP. The attached letter signed by Principal Vicki Hayes is an excellent example of introducing this program to parents/guardians.

If you have any questions or concerns that cannot be answered at the local level, please call Dr. Ben Matthews, Director for the Division of School Support at (919) 807-3501 or Dr. Greg Smith, Chairman of the Potassium Iodide Committee, North Carolina Division of Public Health at (919) 715-8179.

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