

ARMSTRONG COUNTY MEMORIAL HOSPITAL SCHOOL OF RADIOLOGIC TECHNOLOGY POLICY AND PROCEDURE MANUAL	
Policy Title: Student Pregnancy Policy	Policy Number: 31 Page 1 of 2
Original Date: 10/86	Revision Date: 10/86, 12/87, 5/91, 10/96, 5/97, 4/99, 4/12, 7/15, 7/16
Last Review Date: 7/17	

The contents of this policy were reviewed by the Radiation Safety Officer in July 2016.

Armstrong County Memorial Hospital School of Radiologic Technology recognizes the need to establish procedures regarding student pregnancy.

If a student is pregnant or becomes pregnant while in training, she will decide whether she wants to formally declare her pregnancy to school officials, thereby taking advantage of the special dose limits provided to protect the developing embryo/fetus. The student must make written declaration of her pregnancy using Form #28 – Declaration of Pregnancy Form. Instructions describing information that should be known about the radiation exposure of pregnant women is given to all students. These instructions provide information on the potential effects of declaring a pregnancy in order to help women make informed decisions on whether or not to declare their pregnancy. The information is provided in the form of answers to typical questions. These questions and answers are a summary of NRC Regulatory Guide 8.13, “*Instruction Concerning Prenatal Radiation Exposure*”.

Once a pregnancy has been declared, the School Officials, together with the Radiation Physicist, will confidentially counsel the student. The various plans of action from which the student may choose will also be discussed.

The plans of action, which are available to the student, are as follows:

1. Take a leave of absence for one year from both clinical and didactic aspects of the program, returning at the appropriate time if the maximum number of students is not exceeded in an equivalent class. The appropriate time will be determined on a case by case basis. The student must meet with school officials for advisement prior to her reinstatement.
2. The student will attend didactic classes only. The number of clinical hours that the student does not complete must be made up before she receives her certificate and before she is eligible to take the Registry examination. Didactic hours that the student does not complete must also be made up. The student will not exceed 40 hours per week or 10 hours per day when making up time. Clinical time will comply with the 1:1 technologist/student ratio.

ARMSTRONG COUNTY MEMORIAL HOSPITAL SCHOOL OF RADIOLOGIC TECHNOLOGY POLICY AND PROCEDURE MANUAL	
Policy Title: Student Pregnancy Policy	Policy Number: 31 Page 2 of 2
Original Date: 10/86	Revision Date: 10/86, 12/87, 5/91, 10/96, 5/97, 4/99, 4/12, 7/15, 7/16
Last Review Date: 7/17	

3. The student will maintain full status in both didactic and clinical areas. Strict documentation of the student's radiation exposure must be maintained. This option would be indicated if the pregnancy occurs during the final quarter of the program and no leave of absence is anticipated.
4. The student will maintain full status in both didactic and clinical areas until time of delivery. At this time a leave of absence will be given and the position in the program will be held for six weeks. This time may be extended if contraindicated in writing by your physician. The student will then return to the program to complete her clinical and didactic education.

The student's physician must approve in writing her return to the program for any of the above options.

If, at any time, the student voluntarily decides to undeclare or revoke her declaration of pregnancy, she may do so. This requires written notification to the school officials using Form #88 – Voluntary Undeclaration of Pregnancy Form. The school officials will then alert the Radiation Physicist. The students will then be monitored according to the general guidelines for radiation workers as described by the Pennsylvania Department of Environmental Protection.

All clinical and didactic requirements must be completed before the student is eligible to receive her certificate.

I have read the policies and understand their content.

I have decided to follow plan number _____.

Signature

Date

**ACMH SCHOOL OF RADIOLOGIC TECHNOLOGY
POLICY AND PROCEDURE MANUAL**

Declaration of Pregnancy Form – Form #28

To: _____
(Name of Program Official)

I am declaring that I am pregnant. I believe that I became pregnant _____
(Only the month and year need to be provided).

I understand that my occupational radiation dose during my entire pregnancy will not be allowed to exceed 0.5 rem (5 millisieverts), unless that dose has already been exceeded between the time of conception and submitting this form.

If I find out that I am no longer pregnant, or if my pregnancy is terminated, I will promptly inform you (preferably in writing) that my pregnancy has ended.

_____ Student technologist's signature

_____ Printed name of Student technologist

_____ Date

**ARMSTRONG COUNTY MEMORIAL HOSPITAL
SCHOOL OF RADIOLOGIC TECHNOLOGY
POLICY AND PROCEDURE MANUAL**

Policy Title: Making the Decision to Declare Pregnancy Guidelines	Policy Number: 57 Page 1 of 8
Original Date: 10/86	Revision Date: 8/11, 7/16
Last Review Date: 7/17	

The contents of this policy were reviewed by the Radiation Safety Officer in July 2016.

1. If I become pregnant, am I required to inform the school officials of my pregnancy?

No. It is your choice whether to declare your pregnancy to your school officials. If you choose to declare your pregnancy, a lower radiation dose limit will apply to you. If you choose not to declare your pregnancy, you will be subject to the same radiation dose limits that apply to nonpregnant workers even if you are visibly pregnant.

1. If I declare my pregnancy in writing, what happens?

The amount of radiation that you will be allowed to receive will be less because there is a lower dose limit for the embryo/fetus of female workers, who have formally declared their pregnancy in writing. Ordinarily, the radiation dose limit for a worker is 5000 millirems (mrem) (50 millisieverts) in a year.

But, if you declare in writing that you are pregnant, the dose to the embryo/fetus is limited to 500 mrem (5 millisieverts) during the 9 month pregnancy, which is one-tenth of the dose limit that an adult worker may receive in a year. In addition, efforts must be made to avoid substantial variation above a uniform monthly dose rate so that the entire dose received does not occur during a particular time of the pregnancy. (This may mean that, if you declare your pregnancy, you may not be permitted to perform some of your clinical functions).

2. Why do the regulations have a lower dose limit for a woman who has declared her pregnancy than for a normal worker?

The purpose of the lower limit is to protect her unborn child. Scientific advisory groups recommend that the dose before birth be limited to about 0.5 rem rather than the 5 rem (50 millisieverts) occupational annual dose limit because of the sensitivity of the embryo/fetus to radiation. Possible effects include deficiencies in the child's development, especially the child's neurological development, and an increase likelihood of cancer. (These effects have not yet been seen in the human in the dose ranges we are considering.)

ARMSTRONG COUNTY MEMORIAL HOSPITAL SCHOOL OF RADIOLOGIC TECHNOLOGY POLICY AND PROCEDURE MANUAL	
Policy Title: Making the Decision to Declare Pregnancy Guidelines	Policy Number: 57 Page 2 of 8
Original Date: 10/86	Revision Date: 8/11, 7/16
Last Review Date: 7/17	

3. What effects on development can be caused by radiation exposure?

The effects of large doses of radiation on human development are quite evident and easily measurable, whereas at low doses the effects are not evident or measurable and therefore must be assumed.

For example, studies of the effects of radiation on animals and humans demonstrate clearly and conclusively that large doses of radiation such as 100 rems, (100,000 mrem or 1 sievert) cause serious developmental defects in many of the body's organs when the radiation is delivered during the period of rapid organ development.

The developing human brain has been shown to be especially sensitive to large doses of radiation. Mental retardation has been observed in the survivors of the atomic bombings in Japan exposed in utero during sensitive periods.

Additionally, some other groups exposed to radiation in utero have shown lower than average intelligence scores and poor performance in school.

The sensitivity of the brain undoubtedly reflects its structural complexity and its long developmental period (and hence long sensitive period). The most sensitive period is during the 8th to 15th weeks of gestation followed by a substantially less sensitive period for the 2 months after the 15th week. There is minimal effect on the child's developing brain during the first two months of pregnancy or the last three months of pregnancy.

No developmental effects caused by radiation have been observed in groups at doses at or below the 5 rem (50 millisieverts) occupational dose limit. Scientists are uncertain whether there are developmental effects at doses below 5 rems (50 millisieverts). It may be that the effects are present but are too mild to measure because of the normal variability from one person to the next and because the tools to measure the effects are not sensitive enough, or it may be that there is some threshold dose below which there are no developmental effects whatsoever.

In view of the possibility of developmental effects, even if very mild, at doses below 5 rems (50 millisieverts), scientific advisory groups consider it prudent to limit the dose to the embryo/fetus to 0.5 rem (5 millisieverts).

ARMSTRONG COUNTY MEMORIAL HOSPITAL SCHOOL OF RADIOLOGIC TECHNOLOGY POLICY AND PROCEDURE MANUAL	
Policy Title: Making the Decision to Declare Pregnancy Guidelines	Policy Number: 57 Page 3 of 8
Original Date: 10/86	Revision Date: 8/11, 7/16
Last Review Date: 7/17	

4. How much will the likelihood of cancer be increased?

Radiation exposure has been found to increase the likelihood of cancer in many studies of adult human and animal groups. At doses below the occupational dose limit of 5 rem, an increase in cancer incidence has not been proven, but is presumed to exist even if it is too small to be measured.

The question is whether the embryo/fetus is more sensitive to radiation than an adult. Increased sensitivity of the embryo/fetus to cancer induction from radiation exposure is not able to be proven. However, it is assumed that there is some increased sensitivity. Some scientific advisory groups assume that radiation exposure before birth may be 2 to 3 times more likely to cause cancer over a person's lifetime than the same amount of radiation received as an adult. If this is true, there would be 1 radiation-induced cancer death in 200 people exposed in utero at the occupational dose limit of 5 rems (50 millisieverts).

These advisory groups have considered this risk to be too high and have thus recommended that the radiation dose to the embryo/fetus be limited to a maximum of 0.5 rem (5 millisieverts). At that dose, there would be 1 radiation-induced cancer death per 2000 people. This would be in addition to the 400 cancer deaths from all causes that one would normally expect in a group of 2000 people. (The International Commission on Radiation Protection is considering lowering the fetal dose even more.)

5. How does the risk to the embryo/fetus from occupational radiation exposure compare to other risks?

The risk to the embryo/fetus from 0.5 rem or even 5 rems of radiation exposure is relatively small compared to some other avoidable risks.

Of particular concern is excessive consumption of alcohol during pregnancy. The U. S. Public Health Service has concluded that heavy alcohol consumption during pregnancy (three drinks per day and above) is the leading known cause of mental retardation. Children whose mothers drank heavily during pregnancy may exhibit developmental problems such as hyperactivity, distractibility, short attention spans, language difficulties, and delayed maturation, even when their intelligence is normal.

**ARMSTRONG COUNTY MEMORIAL HOSPITAL
SCHOOL OF RADIOLOGIC TECHNOLOGY
POLICY AND PROCEDURE MANUAL**

Policy Title: Making the Decision to Declare Pregnancy Guidelines	Policy Number: 57 Page 4 of 8
Original Date: 10/86	Revision Date: 8/11, 7/16
Last Review Date: 7/17	

Cigarette smoking may also harm the unborn. There is a direct correlation between the amount of smoking during pregnancy and the frequency of spontaneous abortion and fetal death. Children of mothers who smoke while pregnant are more likely to have impaired intellectual and physical growth. Maternal smoking has also been associated with such behavioral problems in offspring as lack of self-control, irritability, hyperactivity, and disinterest. Long-term studies indicate that these children perform less well than matched youngsters of nonsmokers on tests of cognitive, psychomotor, language, and general academic functioning.

Alcohol and smoking are only examples of other risks in pregnancy. Many other toxic agents and drugs also present risk. In addition, many factors that cannot be controlled present risk. There is an increased risk in pregnancy with increasing age of the mother. Maternal disease may be an important risk factor. Malnutrition, toxemia, and congenital rubella may be associated with birth defects. Maternal diabetes and high blood pressure have been associated with problems in the newborn. In addition, many birth defects and developmental problems occur without an obvious cause and without any obvious risk factors. For example, viruses that we may not even be aware of can cause defects and defects can arise in spontaneous random errors in cell reproduction. But these are things that we cannot do anything about.

In summary, you are advised to keep radiation exposure of your unborn child below 0.5 rem, but you should also remember that alcohol consumption, cigarette smoking, and the use of other drugs can do a great deal of harm.

6. What if I decide that I do not want any radiation exposure at all during my pregnancy?

You may ask for clinical experiences that do not involve any exposure to occupational radiation at all, but your request may not be able to be honored. Even if you receive no occupational exposure at all, you will receive a dose typically about 0.3 rem (3 millisieverts) from natural background radiation.

7. What effect will formally declaring my pregnancy have on my clinical experience?

This must be decided on a case by case basis. As part of your radiation safety training, you were told the policies with respect to the job status of a declared pregnant woman. In addition, the PA DEP recommends that, before you declare your pregnancy, you talk to a

ARMSTRONG COUNTY MEMORIAL HOSPITAL SCHOOL OF RADIOLOGIC TECHNOLOGY POLICY AND PROCEDURE MANUAL	
Policy Title: Making the Decision to Declare Pregnancy Guidelines	Policy Number: 57 Page 5 of 8
Original Date: 10/86	Revision Date: 8/11, 7/16
Last Review Date: 7/17	

program official and ask what a declaration of pregnancy would mean specifically for you and your status. However, if you do not declare your pregnancy, the lower exposure limit of 0.5 rem (5 millisieverts) will not apply.

It is most likely that you will be told that you can continue to perform your clinical duties with no changes and still meet the limit for exposure of a declared pregnant woman.

If the dose you currently receive is above the 0.5 rem (5 millisieverts) dose allowed for a declared pregnant woman, it is quite likely that the program can and will make a reasonable accommodation that will allow you to continue performing your current clinical duties.

HOW TO DECLARE YOUR PREGNANCY

8. What information must I provide in my declaration of pregnancy?

You must provide your name, a declaration that you are pregnant, the estimated date of conception (only the month and year need to be given), and the date that you give the letter to the school official. A sample form that that you can use is included at the end of these questions and answers. You may use the sample letter or write one of your own.

9. To declare my pregnancy, do I have to have documented medical proof that I am pregnant?

No. No proof is necessary.

10. Can I tell the school officials orally rather than in writing that I am pregnant?

No, the declaration must be in writing. As far as the regulations are concerned, an oral declaration or statement is the same as not telling the school officials that you are pregnant.

11. If I have not declared my pregnancy in writing, but the school officials notice that I am pregnant, do the lower dose limits apply?

ARMSTRONG COUNTY MEMORIAL HOSPITAL SCHOOL OF RADIOLOGIC TECHNOLOGY POLICY AND PROCEDURE MANUAL	
Policy Title: Making the Decision to Declare Pregnancy Guidelines	Policy Number: 57 Page 6 of 8
Original Date: 10/86	Revision Date: 8/11, 7/16
Last Review Date: 7/17	

No, the lower dose limits for pregnant women apply only if you have declared your pregnancy in writing. The choice of whether to declare your pregnancy and thereby train under the lower dose limits is your choice, not the choice of the school officials. You may not be removed from a specific area because you appear pregnant.

12. If I am planning to become pregnant but am not yet pregnant and I inform school officials of that in writing, do the lower dose limits apply?

No. The lower limits apply only if you declare that you are already pregnant, in writing.

13. What if I have a miscarriage or find out that I am not pregnant?

If you have declared your pregnancy in writing, you should promptly inform the hospital that you are no longer pregnant. The regulations do not require that the revocation of declaration be in writing, but it is recommended that you revoke the declaration in writing to avoid confusion. Also, the program officials may insist upon a written revocation for its own protection. If you have not declared your pregnancy, there is no need to inform the school officials of your new, nonpregnant status.

If you have a miscarriage and become pregnant again before you have revoked your original declaration of pregnancy, you should submit a new declaration of pregnancy because the date of conception has changed.

14. How long is the lower dose limit in effect?

The dose to the embryo/fetus must be limited until (1) you have given birth; (2) you inform the school officials you are no longer pregnant; or (3) you inform the school officials that you no longer wish to be considered pregnant.

15. If I have declared my pregnancy in writing, can I revoke my declaration of pregnancy even if I am still pregnant?

Yes, you may. The choice is entirely yours. If you revoke you declaration of pregnancy, the lower dose limits no longer apply.

ARMSTRONG COUNTY MEMORIAL HOSPITAL SCHOOL OF RADIOLOGIC TECHNOLOGY POLICY AND PROCEDURE MANUAL	
Policy Title: Making the Decision to Declare Pregnancy Guidelines	Policy Number: 57 Page 7 of 8
Original Date: 10/86	Revision Date: 8/11, 7/16
Last Review Date: 7/17	

16. Can I tell school officials I am pregnant when I know I am not in order to work under the lower dose limits?

The purpose of the regulations is to allow pregnant women to choose a heightened level of protection from radiation exposure for the embryo/fetus during her pregnancy. That purpose would not be served by intentionally declaring yourself to be a pregnant woman when you know you are not pregnant. There are no regulatory requirements specifically addressing the actions the hospital might take if you provide a false declaration. However, nothing in the regulations would prevent the program from taking action against you for deliberately providing false information.

STEPS TO LOWER RADIATION EXPOSURE

17. What steps can I take to lower my radiation dose?

These have already been explained to you as part of the instructions that must be given to all radiation workers/students. However, you should ask your program officials or the radiation safety officer whether any additional steps can be taken.

The general principles for maintaining exposure to radiation “as low as reasonably achievable are summarized below. You should already be applying these principles in your clinical duties, but now is a good time to review them.

External Radiation Exposure: External radiation exposure is radiation you receive from radiation sources or radioactive materials that are outside your body. The basic principles for reducing external radiation exposure are time, distance, and shielding – decrease your time near radiation sources, increase your distance from radiation sources, and increase the shielding between yourself and the radiation source. You should also work quickly and efficiently in a radiation area so that you are not exposed to the radiation any longer than necessary. As the distance is increased from the source of radiation, the dose decreases. When possible, you should work behind shielding. The shielding will absorb some of the radiation, thus reducing the amount that reaches you.

Internal Radiation Exposure: Internal radiation you receive from radioactive materials that have gotten into your body, generally entering with the air you breathe, the food you eat, and the water you drink.

ARMSTRONG COUNTY MEMORIAL HOSPITAL SCHOOL OF RADIOLOGIC TECHNOLOGY POLICY AND PROCEDURE MANUAL	
Policy Title: Making the Decision to Declare Pregnancy Guidelines	Policy Number: 57 Page 8 of 8
Original Date: 10/86	Revision Date: 8/11, 7/16
Last Review Date: 7/17	

Students scheduled in the Nuclear Medicine area will have specific procedures to minimize internal radiation exposure, if applicable. Those procedures incorporate the following general precautions that should be taken when you are working with radioactive materials that are not encapsulated:

1. Wear lab coats and other protective clothing if there is a possibility of spills.
2. Use gloves while handling radioactive materials.
3. Wash hands after working with radioactive materials.
4. Do not eat, drink, smoke, or apply cosmetics in areas with unencapsulated radioactive materials.
5. Do not pipette radioactive substances by mouth.

These basic principles should be incorporated into the specific methods and procedures for doing your individual clinical assignment.

ADDITIONAL INFORMATION

18. Where can I get additional information?

Additional information can be found by calling the Pennsylvania Department of Environmental Protection – Southwest Regional Office- at (412) 442-4000.

You can find additional information on the risks of radiation in NRC’s Regulatory Guide 8.29, “Instruction Concerning Risks from Occupational Radiation Exposure”.

You can also telephone the NRC Regional Offices at the following numbers: Region I – 610-337-5000; Region II – 404-331-4503; Region III – 708-829-9500; and Region IV – 817-860-8100.

Legal questions should be directed the Regional Counsel and technical questions should be directed to the Division of Radiation Safety and Safeguards.

If you believe you have been discriminated against, you should contact the U. S. Equal Employment Opportunity Commission (EEOC), 1801 L. Street, N.W., Washington, D.C. 20507 or an EEOC Field Office by calling 800-669-4000. For individuals with hearing impairment, the EEOC’s TDD number is 800-800-3302.

ACMH SCHOOL OF RADIOLOGIC TECHNOLOGY

**RADIATION RISK EVALUATION FOR PREGNANT RADIATION WORKERS
Form #29**

Date _____

Name _____

State of Pregnancy _____

Address

Social Security Number _____

Date of Birth _____

As a student occupationally exposed to radiation, I realize there is potential risks to my unborn child from radiation exposure received during my pregnancy. I have read and understand the instructions given to me.

Student's Signature _____

School Official's Signature _____

Date _____

For any further questions pertinent to potential risks, exposure history and current work area, please contact the Radiation Safety Officer at extension _____.

**ARMSTRONG COUNTY MEMORIAL HOSPITAL
SCHOOL OF RADIOLOGIC TECHNOLOGY
POLICY AND PROCEDURE MANUAL**

VOLUNTARY UNDECLARATION OF PREGNANCY – Form #88

To: _____
(Name of Program Official)

This is written declaration that I, _____,
(Student's Name)
undeclare a previously declared pregnancy.

I have read the pregnancy policy and understand its content.

_____ Student's Signature

_____ Student's Printed Name

_____ Date