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APPENDICES

A. ADDITIONAL IMMUNIZATION INFORMATION 7.010

- 5 Rights of medication administration
- Vaccines & Routes of Administration
- How to Administer Intramuscular (im) Injections
- How to Administer Subcutaneous (sc) Injections
- Emergency Supplies and Equipment
- Pharmacy Policy 3.03B, Labeling of Medications

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(Refer to Vaccine Storage and Handling Toolkit)

B. LIST OF STANDARD ABBREVIATIONS 7.020

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EMERGENCY SHELTER PROTOCOL

GENERAL INFORMATION

This protocol will be in effect **ONLY** when PHNs are working in an official capacity in emergency shelter situations. This protocol addresses basic health care needs of shelter occupants not otherwise addressed in PHN protocol, such as OTC medications. American Red Cross shelter kits contain OTC medications to treat basic health care needs. Check expiration dates on all Red Cross supplies prior to distribution.

SUBJECTIVE

Shelter occupant requests medication to treat symptom(s) for a basic health care need such as:

- headache
- nasal congestion
- cough
- sneezing
- itchy or runny eyes or nose
- heartburn or upset stomach
- constipation or diarrhea

OBJECTIVE

Shelter occupant reports and/or requests OTC medication.

May exhibit signs and symptoms of basic health condition as listed above

ASSESSMENT

Shelter occupant request OTC medication and has no contraindications

PLAN

May issue available OTC medication such as nasal decongestants, antihistamines, analgesics antacids, anti-gas products or other available medications per manufacturer's instructions listed on the container

References:

American Red Cross
TDH Strike Team Guidelines

EMERGENCY CONTRACEPTIVE PILLS (ECPs)

GENERAL INFORMATION

All clinics must have plans in place to educate clients regarding the availability of ECPs and be able to provide ECPs on site to clients who request them..

The package label for ECPs *recommends* starting treatment within 72 hours of unprotected sexual intercourse, but research shows all brands are effective if used within 120 hours.

ECPs following rape and sexual abuse

If a victim of rape or sexual abuse is underage, refer to Community Health Services (CHS) Policy 3.06 for direction regarding child abuse reporting. All citizens of Tennessee, including health care professionals, are required to report any suspicion of child abuse, including child sexual abuse. The Department of Children's Services (DCS) has established a central intake number: 1-877-237-0004 for reporting **SUSPECTED** child abuse or child sexual abuse. Tennessee citizens are required to report if they **suspect** child abuse or child sexual abuse. Refer to the DCS website: at www.tennessee.gov/youth for further information on the process for reporting suspected child abuse or child sexual abuse is described. The Child Protective Services section of the website provides the required reporting information. Clinics are discouraged from deciphering what is or is not child abuse or child sexual abuse. It is the responsibility of DCS to decide whether or not the reported suspicion warrants investigation under Tennessee's child abuse/child sexual abuse laws.

SUBJECTIVE

Client reports unprotected sexual intercourse sometime within the previous 120 hours.
Record last menstrual period if known.

Contraindications:

- A known established pregnancy (not that it is dangerous for the woman or the pregnancy, but because ECPs cannot prevent an established pregnancy).
- Undiagnosed abnormal vaginal bleeding.
- Allergy to the product.
- Ella is not recommended for breastfeeding women.

OBJECTIVE

Client is already late for her menstrual period; advise a pregnancy test.
Client is not late for her menstrual period; no pregnancy test needed.

EXCEPTION: If issuing or prescribing Ella, a pregnancy test is required.

ASSESSMENT

Client requests ECPs and has no contraindications.

PLAN

- Physical examination is not required.
- Provide ECPs and document in chart.
- Consult health department physician or APN before providing Levonorgestrel 1.5mg (Plan B or other equivalent generic product) or Levonorgestrel 0.75 mg (Next Choice or other equivalent generic product) if unprotected sexual intercourse greater than 72 hours prior to visit.§
- Because hormonal ECP is not 100% effective, check urine pregnancy test 3 weeks after ECP use.
- Offer Family Planning clinic services on same day or offer an appointment.
- Provide literature and counseling on contraceptive methods and the benefits of consistent use of a regular contraceptive method. Most methods can be supplied at time of ECP visit. Refer to Quick Start Protocol 2.010
- Document 3-4 of the Title X Office of Population Affairs required health teaching/counseling topics during each family planning visit until instruction in all required topics is complete.

ECP	Ella REQUIRES Negative pregnancy test	Plan B	Next Choice
Available over the counter	No <i>Recommended for clients over 170 pounds</i>	Yes	Yes
Active ingredient	Ulipristal acetate 30 mg	Levonorgestrel 1.5 mg	Levonorgestrel 0.75mg each tablet
Administration	One tablet as soon as possible	One tablet as soon as possible	2 tablets as soon as possible
Pill must be taken within	5 days (120 hours)	3 days (72 hours) (120 hours with MD/APN approval)	3 days (72 hours) (120 hours with MD/APN approval)
Resume/start birth control	Wait 5 days	Start immediately	Start immediately
Need for barrier method	Until next menstrual period*	7 days	7 days

§ While research has shown these products are effective when used within 120 hours after unprotected sex, use after 72 hours is outside the manufacturer suggested parameter; therefore a MD/APN consult is needed.

***Continuing hormonal contraception**

Ella may decrease the effectiveness of hormonal contraception during the same menstrual cycle. Following use of Ella, **a barrier method is recommended** for subsequent sexual intercourse until the next menstrual period.

Caution:

Instruct client to watch for **DANGER SIGNS** (“ACHES”) during the two weeks following the administration of ECPs:

- A** Abdominal pain – severe (as might be seen with liver disease, gallbladder disease, ectopic pregnancy)
- C** Chest pain - severe, (cough, shortness of breath or sharp pain on inhalation as might be seen with heart attack or pulmonary embolism)
- H** Headache - severe, dizziness, weakness, or numbness, especially if one-sided (as might be seen with migraine or stroke especially with numbness or muscle weakness)
- E** Eye disturbances vision loss or blurring, speech problems (as might be seen with retinopathy or stroke)
- S** Severe leg pain in calf or thigh (as might be seen with thrombophlebitis)

REFERENCES:

American Academy of Pediatrics Committee on Adolescence Policy Statement: Emergency Contraception. *Pediatrics*. Volume 130, Number 6, December 2012, retrieved June 28, 2016 from <http://pediatrics.aappublications.org/content/pediatrics/130/6/1174.full.pdf>

American College of Obstetricians and Gynecologists (ACOG), "Emergency Contraception", ACOG Technical Bulletin, 69, December 2005.

Center for Disease Control and Prevention. “U.S. Medical Eligibility Criteria for Contraceptive Use.” MMWR, Vol. 59, June 18, 2010.

Hatcher, RA, Trussell, J, Nelson al, et al. Contraceptive Technology. Twentieth edition. New York: Ardent Media 2011.

Zieman M., Hatcher R. A., Allen A. Z. *Managing Contraception 2015-2016*, Tiger, Georgia; Bridging the Gap Foundation, 2015

INTRAUTERINE CONTRACEPTIVES (IUC)

GENERAL INFORMATION

IUC is a very effective type of long acting reversible contraception. There are two types of IUC, the Copper T-380A (Paraguard) and those containing levonorgestrel (Mirena, Liletta, Skyla). IUC's are not abortifacients. Each device has a unique insertion procedure and must be placed by a clinician who has been trained regarding the nuances of insertion of the specific IUC.

All PHNs must be able to discuss the intrauterine contraceptives (IUC) option with clients, provide the client with written information on the safety and effectiveness of IUCs, and answer any questions the client may have. Refer client to APN/MD for consultation.

IUC	PARAGUARD	LILETTA	MIRENA	SKYLA
Hormone contents	None	52 mg LNG	52 mg LNG	52 mg LNG
Size (mm)	32 x 36	32 x 32	32 x 32	28 x 30
Approved duration (years)	10	3	5	3
Effectiveness	99.2%	99.8%	99.8%	99.8%
How quickly does it work?	Immediately	**Effective immediately if inserted within 7 days after the start of the menstrual cycle.	**Effective immediately if inserted within 7 days after the start of the menstrual cycle.	**Effective immediately if inserted within 7 days after the start of the menstrual cycle.
Is there a delay to previous fertility once removed	No	No	No	No

** If inserted at any other time in the menstrual cycle, use another method of birth control for 7 days if you have sex. Protection against pregnancy will begin 7 days after insertion.

SUBJECTIVE

- Medical history
- Reproductive life plan
- Sexual health assessment

OBJECTIVE

Pregnancy test is **required** day of insertion

ASSESSMENT

An IUC can be inserted under any of the following circumstances:

- Ideally, at time of menses
- When pregnancy can be ruled out
- Within 48 hours after delivery (vaginal or C/S)
- Immediately following first/second trimester abortion

A current medical history should be taken for each client. The history must be negative for U.S. Medical Eligibility Criteria categories 3 and 4.

Refer to the Summary Chart of U. S. Medical Eligibility Criteria for Contraceptive Use in Family Planning Reference section 2.170.

Contraindications for IUCs:

- Active pelvic infection (PID, endometritis, mucopurulent cervicitis)
- Known or suspected pregnancy
- Cervical or endometrial cancer
- Severe cervical stenosis
- Abnormal vaginal bleeding that has not been evaluated
- Severe uterine distortion (bicornuate uterus, fibroids)
- Gestational trophoblastic neoplasia
- Wilson's disease or copper allergy (Paragard only)

PLAN

- Perform pregnancy test
- Document 3-4 of the Title X Office of Population Affairs required health teaching/counseling topics during each family planning visit until instruction in all required topics is complete.
- Chlamydia and gonorrhea screening
 - Screen all sexually active women aged ≤ 25 years for chlamydia AND gonorrhea annually
 - Screen all sexually active women ≥ 26 years with risk factors for chlamydia AND gonorrhea.
 - Risk factors include; a new partner; more than one sex partner; a partner who has other concurrent partners; or a partner who has a sexually transmitted infection
- Offer condoms for improved STI protection
- Advise client when to return to the clinic for visit with provider

Teach IUC Warning Signs

- ✓ All IUC clients must be counseled to report the signs of pelvic infection. These include:
 - Malodorous vaginal discharge
 - Fever (101 F or more without obvious cause)
 - Sudden severe abdominal or suprapubic pain
 - Dyspareunia
- ✓ Other **WARNING SIGNS** that IUC clients must be instructed to report immediately include:
 - Abdominal or pelvic pain (ectopic pregnancy)
 - Prolonged or heavy bleeding/discharge/odor (infection)
 - Painful sexual intercourse

Fever or chills (infection)
Any signs of pregnancy
Known exposure to gonorrhea/chlamydia
Cannot feel strings or can feel plastic (expelled/perforated IUC)
Missed period or abnormal spotting or bleeding (infection or ectopic pregnancy)
Flu-like illness (infection)

- ✓ The following is a useful acronym for remember the IUC warning signs:
 - P** Period late (pregnancy), abnormal spotting or bleeding
 - A** Abdominal pain, pain with intercourse
 - I** Infection exposure (any STI), abnormal discharge
 - N** Not feeling well, fever, chills
 - S** String missing, shorter or longer

Preventative Health Recommendations

Clients must be advised of the importance of the recommended related family planning preventative health screening and testing.

Females:

Cervical Cytology (pap smear) refer to PHN Protocol 2.020 for screening guidelines

Genital exam should accompany cervical cancer screening

Clinical Breast Examination:

ACOG recommends annual CBE for women ages 19 and older.

Mammography:

USPSTF recommends screening mammography for women ages 50-74 every other year.

REFERENCES

Kelsey, B. & Nagtalon-Ramos, J. Midwifery & Women's Health Nurse Practitioner Certification Review Guide. Burlington, MA: Jones & Bartlett. 2016

Hatcher, R. et al. Contraceptive Technology, Twentieth Revised Edition. New York: Ardent Media 2011.

Center for Disease Control and Prevention, U.S Medical Eligibility Criteria for Contraceptive Use, 2010, MMWR, Volume 59, June 18, 2010.

ParaGard T 380A, Intrauterine Copper Contraceptive, Prescribing Information, Duramed Pharmaceuticals, Inc., May 2006.

Mirena Intrauterine System, Prescribing Information, Bayer HealthCare Pharmaceuticals, July 2008.

A Pocket Guide to Managing Contraception, Hatcher, R. A., Nelson, A. L., Ziemann, A., et al., . Tiger, Georgia: Bridging the Gap Foundation, 2010-2012.

BLOOD PRESSURE, ELEVATED CHILDREN 1-17 YEARS OF AGE

GENERAL INFORMATION

Based on the Fourth Report of the Joint National Committee on the Prevention, Detection, Evaluation, and Treatment of Hypertension in Children and Adolescents, the following definitions are provided:

Normal BP in children is defined as **both** systolic and diastolic BP $\leq 90^{\text{th}}$ percentile for gender, age and height

Prehypertension – Systolic and/or diastolic BP $\geq 90^{\text{th}}$ percentile but $< 95^{\text{th}}$ percentile, **or** if in adolescents the BP exceeds 120/80 mmHg even if $< 90^{\text{th}}$ percentile. Prehypertension is predictive of hypertension.

●Hypertension – HTN is defined as either systolic and/or diastolic BP $\geq 95^{\text{th}}$ percentile measured on three or more occasions.

In order to achieve an accurate blood pressure reading, it is recommended that:

- The child be free of stimulant drugs or food AND
- Has been sitting quietly for 5 minutes AND
- Be seated with his or her back supported, feet on the floor, and right arm supported, cubital fossa at heart level
- The right arm is preferred in repeated measures of BP for consistency and comparison with standard tables; it is also important because of the possibility of coarctation of the aorta, which might lead to false (low) readings in the left arm

PLAN

Obtain the child's height and age

Use a cuff appropriate to the size of the child's upper arm

The preferred method of measurement is auscultation

Check BP of any child over 3 years of age using the right arm*

- If BP is $\leq 90^{\text{th}}$ percentile, the BP is normal

If automatic BP cuff is used and the child is found to have elevated BP $\geq 90^{\text{th}}$ percentile, repeat BP using auscultation after sitting quietly for 5 minutes

- If BP found to be elevated ($\geq 95^{\text{th}}$ percentile) based on systolic and diastolic reading, age, gender and height (using attached chart), repeat BP in one week

If BP continues to be elevated on the second visit, check BP again in one week

*The systolic and diastolic BPs are of equal importance; if there is a disparity between the two, the higher value determines the BP category.

If the third BP check is still elevated and the average of the 3 BPs is $\geq 95^{\text{th}}$ percentile,
REFER

If the BP is > 5 mm Hg above the 99th percentile, REFER PROMPTLY

If the patient is symptomatic)REFER IMMEDIATELY, (i.e. headache, blurred vision, vertigo, chest pain, edema, nausea and vomiting, and alteration in consciousness)

Using the BP Chart

1. Obtain height and age of child
2. Measure and record BP
3. Find correct gender chart
4. Find the child's age on the left side of the chart, follow the age row horizontally across the table to the intersection of the line for the height percentile (vertical column)
5. Find the 50th, 90th, and 99th percentiles for systolic and diastolic BP in the right columns

BP < 90 th percentile	= Normal
BP between the 90 th and 95 th	= Prehypertensive
BP > 95 th percentile X 3 checks	= May Be Hypertensive
BP > 99 th percentile + 5 mm Hg	= Probably Hypertensive

Using Up To Date BP calculator

For Boys ages 2 – 17 years old

http://www.uptodate.com/contents/calculator-blood-pressure-percentiles-for-boys-2-to-17-years?source=search_result&search=blood+pressure+calculator&selectedTitle=1%7E150

For girls ages 2 – 17 years old:

http://www.uptodate.com/contents/calculator-blood-pressure-percentiles-for-girls-2-to-17-years?source=search_result&search=blood+pressure+calculator&selectedTitle=2%7E150

Health Teaching

Counsel the parent/guardian/child on prevention and health related life-styles such as:

Weight reduction

Increased physical activity

Dietary modification such as decreased sugar, salt, and an increase in fresh fruits and vegetables, regular meals, and a healthy breakfast

If pre-hypertensive counsel regarding the need for BP recheck in 6 months

Referral Indicators

BP > 99th percentile + 5 mm Hg (PROMPTLY, if symptomatic IMMEDIATE)

Average of 3 BP > 95th percentile

Symptoms of elevated BP (i.e. headache, blurred vision, vertigo, chest pain, edema, nausea and vomiting, and alteration in consciousness)

REFERENCE

The Fourth Report on the Diagnosis, Evaluation, and treatment of High Blood Pressure in Children and Adolescents, U.S. Department of Health and Human Services, National Institutes of Health, National Heart, Lung, and Blood Institute, May 2005

The Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of high Blood Pressure, US Department of Health and Human Services, National Institutes of Health, National Heart, Lung and Blood Institute, National High Blood Pressure Education Program, December 2003

<http://www.nhlbi.nih.gov/health-pro/guidelines/current/hypertension-pediatric-jnc-4/blood-pressure-tables>

http://www.uptodate.com/contents/calculator-blood-pressure-percentiles-for-boys-2-to-17-years?source=search_result&search=blood+pressure+calculator&selectedTitle=1%7E150

http://www.uptodate.com/contents/calculator-blood-pressure-percentiles-for-girls-2-to-17-years?source=search_result&search=blood+pressure+calculator&selectedTitle=2%7E150

Blood Pressure Levels for Boys by Age and Height Percentile

Age (Year)	BP Percentile D	Systolic BP (mmHg)							Diastolic BP (mmHg)						
		Percentile of Height							Percentile of Height						
		5th	10th	25th	50th	75th	90th	95th	5th	10th	25th	50th	75th	90th	95th
1	50th	80	81	83	85	87	88	89	34	35	36	37	38	39	39
	90th	94	95	97	99	100	102	103	49	50	51	52	53	53	54
	95th	98	99	101	103	104	106	106	54	54	55	56	57	58	58
	99th	105	106	108	110	112	113	114	61	62	63	64	65	66	66
2	50th	84	85	87	88	90	92	92	39	40	41	42	43	44	44
	90th	97	99	100	102	104	105	106	54	55	56	57	58	58	59
	95th	101	102	104	106	108	109	110	59	59	60	61	62	63	63
	99th	109	110	111	113	115	117	117	66	67	68	69	70	71	71
3	50th	86	87	89	91	93	94	95	44	44	45	46	47	48	48
	90th	100	101	103	105	107	108	109	59	59	60	61	62	63	63
	95th	104	105	107	109	110	112	113	63	63	64	65	66	67	67
	99th	111	112	114	116	118	119	120	71	71	72	73	74	75	75
4	50th	88	89	91	93	95	96	97	47	48	49	50	51	51	52
	90th	102	103	105	107	109	110	111	62	63	64	65	66	66	67
	95th	106	107	109	111	112	114	115	66	67	68	69	70	71	71
	99th	113	114	116	118	120	121	122	74	75	76	77	78	78	79
5	50th	90	91	93	95	96	98	98	50	51	52	53	54	55	55
	90th	104	105	106	108	110	111	112	65	66	67	68	69	69	70
	95th	108	109	110	112	114	115	116	69	70	71	72	73	74	74
	99th	115	116	118	120	121	123	123	77	78	79	80	81	81	82
6	50th	91	92	94	96	98	99	100	53	53	54	55	56	57	57
	90th	105	106	108	110	111	113	113	68	68	69	70	71	72	72
	95th	109	110	112	114	115	117	117	72	72	73	74	75	76	76
	99th	116	117	119	121	123	124	125	80	80	81	82	83	84	84
7	50th	92	94	95	97	99	100	101	55	55	56	57	58	59	59
	90th	106	107	109	111	113	114	115	70	70	71	72	73	74	74
	95th	110	111	113	115	117	118	119	74	74	75	76	77	78	78
	99th	117	118	120	122	124	125	126	82	82	83	84	85	86	86
8	50th	94	95	97	99	100	102	102	56	57	58	59	60	60	61
	90th	107	109	110	112	114	115	116	71	72	72	73	74	75	76
	95th	111	112	114	116	118	119	120	75	76	77	78	79	79	80
	99th	119	120	122	123	125	127	127	83	84	85	86	87	87	88
9	50th	95	96	98	100	102	103	104	57	58	59	60	61	61	62
	90th	109	110	112	114	115	117	118	72	73	74	75	76	76	77
	95th	113	114	116	118	119	121	121	76	77	78	79	80	81	81
	99th	120	121	123	125	127	128	129	84	85	86	87	88	88	89
10	50th	97	98	100	102	103	105	106	58	59	60	61	61	62	63
	90th	111	112	114	115	117	119	119	73	73	74	75	76	77	78
	95th	115	116	117	119	121	122	123	77	78	79	80	81	81	82
	99th	122	123	125	127	128	130	130	85	86	86	88	88	89	90

Blood Pressure Levels for Boys by Age and Height Percentile (continued)

Age (Year)	BP Percentile	Systolic BP (mmHg)							Diastolic BP (mmHg)						
		Percentile of Height							Percentile of Height						
		5th	10th	25th	50th	75th	90th	95th	5th	10th	25th	50th	75th	90th	95th
11	50th	99	100	102	104	105	107	107	59	59	60	61	62	63	63
	90th	113	114	115	117	119	120	121	74	74	75	76	77	78	78
	95th	117	118	119	121	123	124	125	78	78	79	80	81	82	82
	99th	124	125	127	129	130	132	132	86	86	87	88	89	90	90
12	50th	101	102	104	106	108	109	110	59	60	61	62	63	63	64
	90th	115	116	118	120	121	123	123	74	75	75	76	77	78	79
	95th	119	120	122	123	125	127	127	78	79	80	81	82	82	83
	99th	126	127	129	131	133	134	135	86	87	88	89	90	90	91
13	50th	104	105	106	108	110	111	112	60	60	61	62	63	64	64
	90th	117	118	120	122	124	125	126	75	75	76	77	78	79	79
	95th	121	122	124	126	128	129	130	79	79	80	81	82	83	83
	99th	128	130	131	133	135	136	137	87	87	88	89	90	91	91
14	50th	106	107	109	111	113	114	115	60	61	62	63	64	65	65
	90th	120	121	123	125	126	128	128	75	76	77	78	79	79	80
	95th	124	125	127	128	130	132	132	80	80	81	82	83	84	84
	99th	131	132	134	136	138	139	140	87	88	89	90	91	92	92
15	50th	109	110	112	113	115	117	117	61	62	63	64	65	66	66
	90th	122	124	125	127	129	130	131	76	77	78	79	80	80	81
	95th	126	127	129	131	133	134	135	81	81	82	83	84	85	85
	99th	134	135	136	138	140	142	142	88	89	90	91	92	93	93
16	50th	111	112	114	116	118	119	120	63	63	64	65	66	67	67
	90th	125	126	128	130	131	133	134	78	78	79	80	81	82	82
	95th	129	130	132	134	135	137	137	82	83	83	84	85	86	87
	99th	136	137	139	141	143	144	145	90	90	91	92	93	94	94
17	50th	114	115	116	118	120	121	122	65	66	66	67	68	69	70
	90th	127	128	130	132	134	135	136	80	80	81	82	83	84	84
	95th	131	132	134	136	138	139	140	84	85	86	87	87	88	89
	99th	139	140	141	143	145	146	147	92	93	93	94	95	96	97

BP, blood pressure

* The 90th percentile is 1.28 SD, 95th percentile is 1.645 SD, and the 99th percentile is 2.326 SD over the mean.

For research purposes, the standard deviations in Appendix Table B-1 allow one to compute BP Z-scores and percentiles for boys with height percentiles given in Table 3 (i.e., the 5th, 10th, 25th, 50th, 75th, 90th, and 95th percentiles). These height percentiles must be converted to height Z-scores given by (5% = -1.645; 10% = -1.28; 25% = -0.68; 50% = 0; 75% = 0.68; 90% = 1.28%; 95% = 1.645) and then computed according to the methodology in steps 2-4 described in Appendix B. For children with height percentiles other than these, follow steps 1-4 as described in Appendix B.

Blood Pressure Levels for Girls by Age and Height Percentile

Age (Year)	BP Percentile D	Systolic BP (mmHg)							Diastolic BP (mmHg)						
		Percentile of Height							Percentile of Height						
		5th	10th	25th	50th	75th	90th	95th	5th	10th	25th	50th	75th	90th	95th
1	50th	83	84	85	86	88	89	90	38	39	39	40	41	41	42
	90th	97	97	98	100	101	102	103	52	53	53	54	55	55	56
	95th	100	101	102	104	105	106	107	56	57	57	58	59	59	60
	99th	108	108	109	111	112	113	114	64	64	65	65	66	67	67
2	50th	85	85	87	88	89	91	91	43	44	44	45	46	46	47
	90th	98	99	100	101	103	104	105	57	58	58	59	60	61	61
	95th	102	103	104	105	107	108	109	61	62	62	63	64	65	65
	99th	109	110	111	112	114	115	116	69	69	70	70	71	72	72
3	50th	86	87	88	89	91	92	93	47	48	48	49	50	50	51
	90th	100	100	102	103	104	106	106	61	62	62	63	64	64	65
	95th	104	104	105	107	108	109	110	65	66	66	67	68	68	69
	99th	111	111	113	114	115	116	117	73	73	74	74	75	76	76
4	50th	88	88	90	91	92	94	94	50	50	51	52	52	53	54
	90th	101	102	103	104	106	107	108	64	64	65	66	67	67	68
	95th	105	106	107	108	110	111	112	68	68	69	70	71	71	72
	99th	112	113	114	115	117	118	119	76	76	76	77	78	79	79
5	50th	89	90	91	93	94	95	96	52	53	53	54	55	55	56
	90th	103	103	105	106	107	109	109	66	67	67	68	69	69	70
	95th	107	107	108	110	111	112	113	70	71	71	72	73	73	74
	99th	114	114	116	117	118	120	120	78	78	79	79	80	81	81
6	50th	91	92	93	94	96	97	98	54	54	55	56	56	57	58
	90th	104	105	106	108	109	110	111	68	68	69	70	70	71	72
	95th	108	109	110	111	113	114	115	72	72	73	74	74	75	76
	99th	115	116	117	119	120	121	122	80	80	80	81	82	83	83
7	50th	93	93	95	96	97	99	99	55	56	56	57	58	58	59
	90th	106	107	108	109	111	112	113	69	70	70	71	72	72	73
	95th	110	111	112	113	115	116	116	73	74	74	75	76	76	77
	99th	117	118	119	120	122	123	124	81	81	82	82	83	84	84
8	50th	95	95	96	98	99	100	101	57	57	57	58	59	60	60
	90th	108	109	110	111	113	114	114	71	71	71	72	73	74	74
	95th	112	112	114	115	116	118	118	75	75	75	76	77	78	78
	99th	119	120	121	122	123	125	125	82	82	83	83	84	85	86
9	50th	96	97	98	100	101	102	103	58	58	58	59	60	61	61
	90th	110	110	112	113	114	116	116	72	72	72	73	74	75	75
	95th	114	114	115	117	118	119	120	76	76	76	77	78	79	79
	99th	121	121	123	124	125	127	127	83	83	84	84	85	86	87
10	50th	98	99	100	102	103	104	105	59	59	59	60	61	62	62
	90th	112	112	114	115	116	118	118	73	73	73	74	75	76	76
	95th	116	116	117	119	120	121	122	77	77	77	78	79	80	80
	99th	123	123	125	126	127	129	129	84	84	85	86	86	87	88

Blood Pressure Levels for Girls by Age and Height Percentile (continued)

Age (Year)	BP Percentile D	Systolic BP (mmHg)							Diastolic BP (mmHg)						
		Percentile of Height							Percentile of Height						
		5th	10th	25th	50th	75th	90th	95th	5th	10th	25th	50th	75th	90th	95th
11	50th	100	101	102	103	105	106	107	60	60	60	61	62	63	63
	90th	114	114	116	117	118	119	120	74	74	74	75	76	77	77
	95th	118	118	119	121	122	123	124	78	78	78	79	80	81	81
	99th	125	125	126	128	129	130	131	85	85	86	87	87	88	89
12	50th	102	103	104	105	107	108	109	61	61	61	62	63	64	64
	90th	116	116	117	119	120	121	122	75	75	75	76	77	78	78
	95th	119	120	121	123	124	125	126	79	79	79	80	81	82	82
	99th	127	127	128	130	131	132	133	86	86	87	88	88	89	90
13	50th	104	105	106	107	109	110	110	62	62	62	63	64	65	65
	90th	117	118	119	121	122	123	124	76	76	76	77	78	79	79
	95th	121	122	123	124	126	127	128	80	80	80	81	82	83	83
	99th	128	129	130	132	133	134	135	87	87	88	89	89	90	91
14	50th	106	106	107	109	110	111	112	63	63	63	64	65	66	66
	90th	119	120	121	122	124	125	125	77	77	77	78	79	80	80
	95th	123	123	125	126	127	129	129	81	81	81	82	83	84	84
	99th	130	131	132	133	135	136	136	88	88	89	90	90	91	92
15	50th	107	108	109	110	111	113	113	64	64	64	65	66	67	67
	90th	120	121	122	123	125	126	127	78	78	78	79	80	81	81
	95th	124	125	126	127	129	130	131	82	82	82	83	84	85	85
	99th	131	132	133	134	136	137	138	89	89	90	91	91	92	93
16	50th	108	108	110	111	112	114	114	64	64	65	66	66	67	68
	90th	121	122	123	124	126	127	128	78	78	79	80	81	81	82
	95th	125	126	127	128	130	131	132	82	82	83	84	85	85	86
	99th	132	133	134	135	137	138	139	90	90	90	91	92	93	93
17	50th	108	109	110	111	113	114	115	64	65	65	66	67	67	68
	90th	122	122	123	125	126	127	128	78	79	79	80	81	81	82
	95th	125	126	127	129	130	131	132	82	83	83	84	85	85	86
	99th	133	133	134	136	137	138	139	90	90	91	91	92	93	93

BP, blood pressure

* The 90th percentile is 1.28 SD, 95th percentile is 1.645 SD, and the 99th percentile is 2.326 SD over the mean.

For research purposes, the standard deviations in Appendix Table B-1 allow one to compute BP Z-scores and percentiles for girls with height percentiles given in Table 4 (i.e., the 5th, 10th, 25th, 50th, 75th, 90th, and 95th percentiles). These height percentiles must be converted to height Z-scores given by (5% = -1.645; 10% = -1.28; 25% = -0.68; 50% = 0; 75% = 0.68; 90% = 1.28%; 95% = 1.645) and then computed according to the methodology in steps 2-4 described in Appendix B. For children with height percentiles other than these, follow steps 1-4 as described in Appendix B.

ORAL HEALTH RISK ASSESSMENT & FLUORIDE VARNISH

General Information

The bacteria associated with dental caries have been identified as Streptococcus Mutans. The presence of these bacteria along with certain foods allows the process of decay to begin on the tooth surface. Untreated decay progresses through stages of tooth destruction. As the decay progresses, the affected area becomes larger.

Tooth decay (cavities) is one of the most common chronic conditions of childhood in the United States. Dental care is the most common unmet health need in most communities. Primary care providers should incorporate oral health into their practices.

Dental oral health risk assessments and referrals are recommended for every child

There has been a well-documented decline in dental caries in children in the United States, which has been attributed to widespread use of various forms of fluoride. The use of fluoride varnish, a high-concentration of fluoride in a small amount, when painted directly onto the teeth contributes to this decline.

Even people living in communities where water supplies are fluoridated benefit from exposure to fluoride found in toothpaste, mouth rinses, professionally applied fluoride, and in foods processed in cities where water supplies are fluoridated (i.e., the “halo” phenomenon).

The use of topical fluoride application is one alternative means of providing protection to the teeth of children 0 months old to 21¹ years of age who are at risk for dental caries.

Proper application technique reduces the possibility that a patient will swallow varnish during its application and limits the total amount of fluoride swallowed as the varnish wears off the teeth over several hours.

A combination of various types of fluoride use (e.g. optimally fluoridated water, prescription fluoride supplements, and professionally applied topical fluoride) reduces dental caries significantly more than any one method alone.

No published evidence indicates that professionally applied fluoride varnish is a risk factor for enamel fluorosis for children 0 through 8 years of age.

Applying the fluoride varnish to any and all tooth surfaces reduces the risk of decay.

A helpful tip for applying fluoride varnish to the teeth of young children is to sit knee-to-knee with parent or caregiver, and have the child lay their head in the health care provider’s lap.

¹ Topical application of fluoride varnish is safe for the prenatal patient

SUBJECTIVE

Age 0 – 21 years of age, with teeth present

ASK about oral health risk factors and symptoms of oral disease:

- Mother, primary caregiver, or sibling have active decay
- Lack of adequate fluoride exposure
- Continual bottle/sippy cup use with fluid other than water
- Frequent snacking
- Special health care needs
- Does the family have a Dental Home
- Low socioeconomic status
- Condition(s) impairing saliva flow
- Drink fluoridated water

OBJECTIVE

Look for signs of oral health risk or active disease:

- Obvious Decay
- White, chalky spots on teeth
- Restorations (fillings) Present
- Visible Plaque Accumulation
- Gingivitis
- Healthy Teeth

ASSESSMENT

(MUST BE PERFORMED BY RN)

Never apply varnish without first performing an oral assessment (an assessment may not always warrant varnish application)

- ✓ High risk
 - Obvious Decay
 - Restorations (fillings) present
 - White chalky spots/decalcifications
- ✓ Medium risk
 - Plaque Accumulation
 - Gingivitis
- ✓ Low Risk
 - Has a dental home
 - Brushes twice daily

PLAN

Public Health Nurse (RN) performs dental oral health risk assessment

Plan is the same regardless of risk status, (high, medium or low):

- Fluoride varnish should be applied at a minimum of twice annually but may be applied as often as every 3 months once teeth are present
 - ✓ Maximum 0.25ml-primary dentition (baby teeth, milk teeth)
 - ✓ Maximum 0.40ml-mixed and permanent dentition (big teeth, adult teeth)

- Provide home care instructions and stress importance of following instructions
- Provide active referral to a dentist (dental home)

Health Teaching:

- Patient can leave immediately after application
- Child should not brush for 4 hours
- Eat a soft diet for 4 hours
- Avoid hot drinks and products containing alcohol (beverages, oral rinses) for 4 hours
- Instruct parent/guardian on the correct care of child's teeth until the next day
- Provide parent/guardian with appropriate information sheet for care of child's teeth following fluoride varnish application
- Instruct parent or guardian on the need for additional applications of fluoride varnish
- Counsel parent/guardian to closely supervise tooth brushing by young children in order to prevent their ingestion of fluoride toothpaste and to ensure that only very small quantities (pea-sized amounts) are used (so as to reduce the risk of dental fluorosis)
- Counsel parent/guardian regarding the risks that contributes to dental decay
- Instruct parent/guardian about proper diet and feeding habits, as well as the daily care of the child's teeth to contribute to the prevention of dental decay

Follow-Up:

Provide dental oral health risk assessment at least twice annually.

Based upon oral health screening and risk assessment, fluoride varnish applied twice per year is optimal for children at minimal and normal risk.

At the nurses discretion, more frequent application (as often as every 3 months) may be recommended for children at high risk such as those with no community water fluoridation and/or lack of available dental services.

Contraindications

- Ulcerative gingivitis and stomatitis (trench mouth)
- Known allergies or reactions to colophony (Rosin- the sap or sticky substance that comes from pine and spruce trees. Found in cosmetics, adhesives, medicines, and chewing gum).
- Professional fluoride application within the past 3 months
- Low risk children who consume optimally fluoridated water or receive routine fluoride treatments through a dental office

REFERENCE

Tenn. Code Ann. § 63-5-109

Hagan JF, Shaw JS, Duncan PM, eds. 2008 *Bright Futures: Guidelines for Health Supervision of Infants, Children, and Adolescents*, Third edition. Elk Grove Village, IL: American Academy of Pediatrics.

American Academy of Pediatrics, Tennessee Chapter. Education, EPSDT and Coding-Oral Health. June 2015. www.tnaap.org

Centers for Disease Control and Prevention. Division of Oral Health-Children's Oral Health. November 10, 2014. www.cdc.gov/oralhealth

HEPATITIS A VACCINE

GENERAL INFORMATION

Hepatitis A disease is a serious liver infection caused by the Hepatitis A virus (HAV). HAV is found in the stool of persons with Hepatitis A. It is not often fatal, but is highly contagious with transmission occurring primarily by the fecal-oral route.

Hepatitis A vaccine is inactivated and contains no live organisms; Hepatitis A vaccine is not licensed for children younger than 1 year of age. Hepatitis A vaccine may be administered simultaneously with other vaccines.

To determine if a patient in an ACIP-recommended group is eligible for free, Federal vaccine, please see the current Tennessee Immunization Program Policy on the use of Federal vaccine.

Recommended Populations who should be vaccinated include:

- All children 12-23 months
- Previously unvaccinated children 23 months through 18 years of age
- Any person requesting protection from Hepatitis A virus infection
- Members of households planning to adopt a child, or care for a newly arriving adopted child, from a country where hepatitis A is common (see www.cdc.gov/travel).
- People who use street drugs.
- Men who have sex with men
- Persons who have blood clotting-factor disorders or chronic liver disease
- International travelers (refer)
- Persons working with hepatitis A-infected non-human primates (refer)
- Persons who work with hepatitis A in research laboratories (refer)

Contraindications to giving the vaccine include the following:

Persons with a history of severe reaction to a prior dose of hepatitis A vaccine or to any hepatitis A vaccine component

Precautions (risks and benefits of vaccination should be carefully evaluated for individuals under the following circumstances):

Moderate to severe acute illness (defer until illness resolves)

Adverse Reactions:

Severe allergic reaction to vaccine (rare)
 Injection site soreness, tenderness, redness, swelling (common)
 Fatigue, fever, malaise, anorexia, nausea, headache (systemic)

PLAN

1. Ask patient/guardian about contraindications
2. Have patient/guardian read Vaccine Information Statement
3. Administer the appropriate pediatric or adult formulation of the vaccine according to Manufacturer instructions
4. Counsel regarding side effects of vaccine
5. Advise patient or parent/guardian to return for the second dose in 6-12 months
6. Advise to wait in clinic for 20 minutes after injection
7. Document vaccine administration on the immunization clinic record
8. Instruct patient/guardian to contact Health Department if adverse reaction occurs

Dosage:

VAQTA (Merck) **or** HAVRIX (GlaxoSmithKline) hepatitis A vaccines:

Pediatric Formulation (ages 12 mos. to 19 years), 2 doses required

Administer 0.5 cc IM

Administer second dose 6-12 months later.

Adult Formulation (≥ 19 years), 2 doses required

Administer 1.0 cc IM

Administer second dose 6-12 months later.

TWINRIX Combination Hepatitis A and B vaccine (GlaxoSmithKline):

(Licensed for adults ≥ 18 years only, 3 doses required)

Administer 1.0 cc IM,

Administer second dose 1 month after the first dose.

Administer third dose 6 months after the first dose.

Referral Indicators:

Severe reaction to previous vaccine (consult MD)

REFERENCES

CDC. Epidemiology and Prevention of Vaccine-Preventable Diseases. 12th edition, May 2012: pp 101-114.

<http://www.cdc.gov/vaccines/hcp/vis/vis-statements/hep-a.html#who>

CDC. Advisory Committee on Immunizations Practices (ACIP) Recommended Immunization Schedule for Adults Aged 19 years and older - United States, 2013. MMWR, February 1, 2013/62(01);9-19.

<http://www.cdc.gov/mmwr/preview/mmwrhtml/su6201a3.htm>

HEPATITIS A INACTIVATED, HEPATITIS B RECOMBINANT VACCINE (Twinrix®, GSK), Adult (age 18 years and up)

GENERAL INFORMATION

Twinrix® (inactivated hepatitis A and hepatitis B recombinant vaccine) is manufactured by GSK and licensed by the FDA for use in persons 18 years of age and up. It is typically given as a 3-dose series (although an alternative 4-dose schedule also is available).

In accordance with the general immunization guidelines of the CDC, Twinrix® may be used when protection against either disease is indicated and the other is not contraindicated. If the patient does not need vaccination against both hepatitis A and hepatitis B, then use Twinrix® only when the separate hepatitis A or B vaccine product is not available.

Twinrix® is not licensed for hepatitis A post-exposure prophylaxis (PEP).

Twinrix® may be used for anyone recommended for hepatitis A and B immunization, including, but not limited to:

Persons with chronic liver disease

Persons with an occupational risk of exposure to blood or body fluids and feces

Persons at risk because of sexual practices, including men who have sex with men

International travelers

Recreational injection drug users

Persons who are at increased risk for hepatitis A and are close contacts of persons with hepatitis B infection

Contraindications and precautions include the following:

Anaphylactic reaction to a previous dose of hepatitis A or B vaccine or vaccine component (including neomycin and yeast)

Moderate to severe febrile illness (defer until recovered)

Breast feeding are NOT contraindications if immunization is indicated

Give during pregnancy only if clearly indicated (Refer to a physician)

Persons with severe (anaphylactic) allergy to latex should not be given the vaccine in the pre-filled syringe preparation, which contains natural latex.

The single dose vial stopper is latex free and this preparation may be used for latex-allergic patients.

Administration of vaccine (see dosing schedule charts below):

Twinrix® may be administered simultaneously with any other vaccines; if not administered simultaneously, schedule next visit for deferred vaccine(s) at any time interval (does not have to be 30 days)

If any dose in the series is delayed, it should be administered when possible and the schedule resumed; DO NOT RE-START SERIES

PLAN

Read Vaccine Information Statement (VIS)

Draw up vaccine in accordance with package insert instructions

Administer vaccine IM using deltoid

Advise patient to wait 20 minutes for observation before leaving clinic

Counsel patient to return for next scheduled dose

Advise patient to report any suspected adverse events to the health department (health department to complete and submit VAERS form if necessary)

Recommended Schedule

ROUTINE	ROUTINE SCHEDULE	ALTERNATE	ALTERNATE SCHEDULE
Dose 1	1st visit	Dose 1	1st visit
Dose 2	1 month after 1 st dose	Dose 2	7 days after 1 st dose
Dose 3	6 months after 1st dose	Dose 3	21 days after 1 st dose
		Dose 4	12 months after 1 st dose

*doses administered more than 4 days earlier than any minimum interval are considered invalid

Referral Indicators:

Contraindications or precautions as noted

Return at appropriate interval

REFERENCES

GlaxoSmithKline. Prescribing Information. Twinrix (hepatitis A inactivated and hepatitis B recombinant vaccine). April 2007

CDC. A Comprehensive Immunization Strategy to Eliminate Transmission of Hepatitis B Virus Infection in the United States: Recommendations of the Advisory Committee on Immunization Practices (ACIP). Part II: Immunization of Adults. MMWR 2006;55(No. RR-16).

CDC. General Recommendations on Immunization: Recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR 2006;55(No. RR-15).

HEPATITIS B RECOMBINANT VACCINE, Adult (age 19 years and up) Pre-Exposure

GENERAL INFORMATION

Please consult current state or local health department policy concerning adults eligible to receive hepatitis B vaccine at the health department. Refer to the **current** Tennessee Immunization Program Policy on the use of Federal vaccine and any current guidance on the use of any special supplies of hepatitis B vaccine.

Immunization is recommended by CDC for the following UNVACCINATED persons:

ALL at risk adult patients (with ANY one of the following risk factors):

- All sexually-active persons not in long term, mutually-monogamous relationships
- History of more than one sex partner in the past 6 months
- Persons seeking evaluation or treatment of sexually transmitted infection
- History of injecting drug use or sexual partner(s) who use injecting drugs
- Men who have sex with men
- At risk (generally, household, sexual or needle-sharing) contacts of persons with Hepatitis B
- ALL persons served in HIV risk reduction, outreach activities
- Residents and staff of facilities for developmentally delayed persons
- Persons with end-stage renal disease, dialysis, HIV or chronic non-hepatitis B liver disease
- ALL adults younger than age 60 years with diabetes, generally as soon as possible after diagnosis
- Adults aged 60 and over with diabetes, with health department MD or APN order.
- ALL adults requesting vaccination against hepatitis B (no reported risk factor required)

To determine if a patient in an ACIP-recommended group is eligible for free, Federal vaccine, please see the current Tennessee Immunization Program Policy on the use of Federal vaccine.

Contraindications and precautions include the following:

Anaphylactic reaction to a previous dose of hepatitis B vaccine or vaccine component
 Moderate to severe febrile illness (defer until recovered)
 Pregnancy or breast feeding are NOT contraindications if immunization is indicated

Administration of vaccine (see dosing schedule charts below):

HBV may be administered simultaneously with any other vaccines; if not administered simultaneously, schedule next visit for deferred vaccine(s) at any time interval (does not have to be 30 days)

If any dose in the series is delayed, it should be administered when possible and the schedule resumed; DO NOT RE-START SERIES

PLAN

- If patient being evaluated for potential sexual or blood exposure to a person with hepatitis B infection, evaluate possible need for HBIG according to section on hepatitis.
- Read Vaccine Information Statement (VIS)
- Draw up vaccine in accordance with package insert instructions

- Administer vaccine IM using deltoid according to dosage schedule for age
- Document vaccine administration on the immunization clinic record
- Educate about post-immunization serologic testing if in a group for whom testing is recommended (health care providers, sexual or neonatal contacts of persons with hepatitis B)

Routine Recommended Schedule/Dosage for Adults 19 Years of Age

VACCINE Brand	DOSE	ROUTINE SCHEDULE	MINIMUM INTERVAL (accelerated schedule)*
Recombivax HB (Merck) 0.5 ml (5mcg) Pediatric or Adult Formula, or Engerix-B (GSK) 0.5ml (10 mcg) of Pediatric Formula, or Engerix-B Adult formulation 1.0 ml (20 mcg) ³	Dose 1	1st visit	4 weeks after 1 st dose 8 weeks after Dose 2 <i>and</i> 16 weeks after Dose 1
	Dose 2	4 weeks after 1 st dose	
	Dose 3	4-6 months after 2 nd dose	

*doses administered more than 4 days earlier than any minimum interval are considered invalid

³ The adult formulation of Engerix-B may be used in adolescents, but the approved dose is 1.0 ml (20 mcg).

Routine Recommended Schedule/Dosage for Adults 20 Years of Age and Older

VACCINE	DOSE	SCHEDULE	MINIMUM INTERVAL (accelerated schedule)*
Recombivax HB (Merck) 1.0ml (10 mcg) of Adult Formula, or Engerix-B (GSK) 1.0 ml (20mcg)	Dose 1	1st visit	4 weeks after 1 st dose 8 weeks after Dose 2 <i>and</i> 16 weeks after Dose 1
	Dose 2	4 weeks after 1 st dose	
	Dose 3	4-6 months after 2 nd dose	

*doses administered more than 4 days earlier than any minimum interval are considered invalid

Recommended Schedule/Dosage for Hemodialysis and Immunocompromised Patients Aged 20 Years or Older (<20 years, recommendations same as general population)

VACCINE	DOSE	SCHEDULE	MINIMUM INTERVAL (accelerated schedule)*
Recombivax HB (Merck): 1.0ml (40 mcg) of <u>Dialysis</u> Formulation, or	Dose 1	1st visit	None given
	Dose 2	4 weeks after 1st dose	
	Dose 3	6 months after 1st dose	
	Booster	If annual serologic testing <10 mIU/mL	
Engerix-B (GSK): each dose requires 40 mcg. Use two doses of the 1.0 ml (20 mcg) Adult Formulation	Dose 1	1st visit	None given
	Dose 2	1 month after 1st dose	
	Dose 3	2 months after 1st dose	
	Dose 4	6 months after 1st dose	
	Booster	If annual serologic testing <10 mIU/mL	

*doses administered more than 4 days earlier than any minimum interval are considered invalid

Recommended schedule/dosage for previously vaccinated persons with negative post vaccination serologic testing (i.e.a non-responder)

Patient may present with documentation of negative titer or may self-report. Health department does not perform serology testing.

A non responder is defined as an antiHBs level of <10 mIU/ml within one-two months after completion of three dose series.

- If initial series has been completed within the past 6 months and patient is non-responder, administer the 3 dose series again.
- If initial series completed ≥ 6 months then administer single challenge dose and refer back to PCP for titer within 1-2 months
- In an immunocompetent person has documented remote history of series ≥ 6 months, assume serology will be negative and give booster dose and refer back to PCP for titer within 1-2 months.

For non-occupational post exposure guidance, refer to Protocol 5.080

For employee post exposure guidance, refer to the Department of Health Infection Control Manual.

Referral Indicators:

Contraindications as noted under "General Information"

REFERENCES

CDC. "Epidemiology and Prevention of Vaccine-Preventable Diseases, 10th Edition", DHHS January 2007

CDC. A Comprehensive Immunization Strategy to Eliminate Transmission of Hepatitis B Virus Infection in the United States: Recommendations of the Advisory Committee on Immunization Practices (ACIP). Part II: Immunization of Adults. MMWR 2006;55(No. RR-16).

"Federally Funded Vaccines for Adults" memo from Dr. Kelly Moore and Dr. Tom Jaselskis, July 8, 2009

CDC. "CDC Guidance for Evaluating Health-Care Personnel for Hepatitis B Virus Protection and for Administering Postexposure Management. MMWR 2013;62

TETANUS PROPHYLAXIS IN WOUND MANAGEMENT

GENERAL INFORMATION

Tetanus is an acute, often fatal, disease characterized by muscle stiffness usually involving the jaw (lockjaw) and neck that becomes generalized rigidity and convulsive spasms of skeletal muscles. Transmission is primarily by contaminated minor or major wounds. The incubation period ranges from 3 to 21 days, usually about 8 days. In general the further the injury site is from the central nervous system, the longer the incubation period. The shorter the incubation period, the higher the chance of death.

SUBJECTIVE

Patient reports recent wound (could be skin burn, deep puncture wound, crush wound, otitis media (ear infections), dental infection, animal bite)

OBJECTIVE

Patient needs tetanus prophylaxis

ASSESSMENT

Review patient immunization history

PLAN

Teach wound care

Have patient or accompanying adult read Vaccine Information Statement/Vaccine Information Material

Counsel regarding benefits, side effects, and management

Administer IM 0.5cc DTaP, DT, Tdap or Td vaccine using the following schedule:

Guide to tetanus prophylaxis in routine wound management.

History of adsorbed tetanus toxoid (doses)	Clean minor wounds Tdap or Td†	Clean minor wounds TIG§	All other wounds* Tdap or Td†	All other wounds* TIG§
less than 3 or unknown	Yes	No	Yes	Yes
3 or more doses¶	No if < 10 years since last tetanus containing vaccine dose	No	No if < 5 years since last tetanus containing vaccine dose	No
	Yes if ≥ 10 years since last tetanus containing vaccine dose	No	Yes if ≥ 5 years since last tetanus containing vaccine dose	No

* Such as (but not limited to) wounds contaminated with dirt, feces, soil, and saliva; puncture wounds; avulsions; and wounds resulting from missiles, crushing, burns, and frostbite.

† DtaP is the recommended and preferred vaccine for children less than 7 years of age, (or DT if pertussis component is contraindicated)

Do not give DTaP if:

- The total number of DTaP immunizations would be in excess of the number recommended for the child's age
- They have not reached the minimum age for the next dose due

‡ For persons age 7 and up with unknown or <3 doses, Tdap is preferred if the patient has not previously received Tdap (if so, Td is preferred)

For persons 7–9 years of age who have previously completed the series, Td is recommended

¶ If patient records indicate that only three doses of fluid tetanus toxoid have been received, a fourth dose of a tetanus toxoid, preferably adsorbed, should be given. Although licensed, fluid tetanus toxoid is rarely used. Children 7-10 years with incomplete pertussis immunization may receive Tdap, see Tdap protocol for children and adolescents.

For persons >10 years, Tdap is preferred to Td if the patient has never received Tdap and has no contraindication to pertussis vaccine. For persons 7 years of age or older, if Tdap is not available or not indicated because of age, Td is preferred to TT.

§ Patients with wounds that are neither clean nor minor, AND who have had 0-2 prior doses of tetanus toxoid or have an uncertain history of prior doses should be referred for Tetanus Immune Globulin (Human) referred to as TIG. Equine tetanus antitoxin should be used when TIG is not available.

NOTE: For non-pregnant persons 11 or older (including those over age 64), Tdap should be used instead of Td if the recipient has not previously received Tdap. If Tdap is not available or was administered previously, Td should be administered.

Pregnancy:

PREGNANCY: Pregnancy is not a contraindication to Td or Tdap; if tetanus vaccination during pregnancy is indicated, Tdap is preferred, unless contraindicated. Pregnant women who have not completed their primary series should do so before delivery if possible. If there is insufficient time, 2 doses of Td should be administered at least 4 weeks apart and the second dose should be given at least 2 weeks before delivery. Tdap should be substituted for the first Td dose if Tdap has not been administered previously.

Tdap should be given to each pregnant woman, preferably during the third trimester, during EACH pregnancy, regardless of her history of Tdap vaccination. See protocol 4.260.

Referral Indicators:

Needs TIG

History of severe reaction (e.g., anaphylaxis) to DTP/DTaP/DT/Td

If a severe reaction is reported as occurring within 30 days following vaccine administered by health department personnel, VAERS Report Form must be completed.

Follow-Up:

Persons whose immunizations are incomplete should be scheduled for the remainder of the recommended series.

REFERENCES

MMWR, Vol. 40, No. RR-10, August 1991.

MMWR, Vol. 55, No. RR-3, March 24, 2006

Advisory Committee on Immunization Practice (ACIP) Votes to Recommend Use of Combined Tetanus, Diphtheria and Pertussis (Tdap) Vaccines for Adults, U.S. Department of Health and Human Services, Centers for Disease Control and Prevention (CDC), Atlanta, GA 30333, March 2, 2006 http://www.cdc.gov/nip/vaccine/tdap/tdap_adult_recs.pdf Last accessed May 12, 2006

Centers for Disease Control and Prevention, Updated Recommendations for Use of Tetanus Toxoid, Reduced Diphtheria Toxoid and Acellular Pertussis (Tdap) Vaccine from the Advisory Committee on Immunization Practices, 2010.

MMWR. <http://www.cdc.gov/mmwr/pdf/wk/mm6001.pdf> Last accessed January 14, 2011.

<http://www.cdc.gov/vaccines/pubs/pinkbook/tetanus.html#wound>

Red Book, Report of the Committee on Infectious Diseases, 29th Edition. 2012

POTASSIUM IODIDE (KI) ADMINISTRATION

GENERAL INFORMATION:

Potassium Iodide is used to block the uptake of radioactive iodine by the thyroid gland in individuals exposed to radioactive iodine

Administration of Potassium Iodide has been shown to reduce the risk of developing thyroid cancer

Its use is indicated if Rad Health has determined that radioactive iodine was released and detected and the State Health Officer has issued an order for exposed people to take KI to block the uptake of radioactive iodine

EFFECTIVENESS IS INCREASED IF POTASSIUM IODIDE IS GIVEN BEFORE, OR SOON AFTER, EXPOSURE

Contraindications include:

Allergy to iodide

Dermatitis herpetiformis, and hypocomplementemic vasculitis (extremely rare conditions associated with an increased risk of iodine hypersensitivity)

Caution should be used in:

Individuals with multinodular goiter, Graves' disease, and autoimmune thyroiditis, especially if dosing extends beyond a few days

People on lithium carbonate are more likely to have hypothyroidism if they take KI (less of an issue when only used for <10 days)

Pregnancy, if taking >10 days

PLAN

Assess the client for contraindications to KI

Educate the patient on adverse reactions:

Metallic taste

Rash

GI upset

Sialadenitis (rare inflammation of salivary gland)

Administer KI, if possible prior to exposure, in accordance with the following CDC recommendations:

Recommended Doses of KI for Different Risk Groups Orally once a day (may be crushed if necessary)			
	KI dose (mg)	# of 130 mg tablets	# of 65 mg tablets
Adults over 40 yrs	130	1	2
Adults over 18 through 40 yrs			
Pregnant or lactating women			
Adolescents over 12 through 18 yrs*	65	1/2	1
Children over 3 through 12 yrs			
Over 1 month through 3 years	32	1/4	1/2
Birth through 1 month	16	1/8	1/4

*Adolescents approaching adult size (≥ 70 kg) should receive the full adult dose (130 mg)

Below are instructions for making KI solution (liquid form) for anyone who cannot swallow tablets.

To Make KI Solution (Liquid Form), using one 130 mg or two 65 mg KI Tablet(s)

To Make the Potassium Iodide (“KI”) Solution You Will Need:

- One 130 mg KI tablet OR two 65 mg KI tablets**
- Teaspoon
- Small bowl
- Four teaspoons of water
- Four teaspoons of a drink. We recommend any one of the following:
 - White milk ■ Chocolate milk ■ Orange juice ■ Soda (For example, cola)
 - Infant formula ■ Raspberry Syrup ■ Water

Directions for Making the Potassium Iodide (“KI”) Solution:

Step 1. Soften the KI tablet(s):

- Put **one 130 mg KI tablet OR two 65 mg KI tablets** into a small bowl. Add four teaspoons of water. Soak the tablet(s) for one minute.

Step 2. Crush the softened KI tablet:

- Use the back of the teaspoon to crush the tablet(s) in the water. At the end of this step, there should not be any large pieces of KI. This makes the KI and water mixture.

Step 3. Add a drink to the KI and water mixture:

- Chose a drink from the list above. Mix four teaspoons of the desired drink with the KI and water mixture made in Step 2. Adding the desired drink makes the final KI solution.

Step 4. Give the right amount of the final KI solution, using the chart below.

How Much of the Final Potassium Iodide (“KI”) Solution to Give Each Day

The chart below tells you how many teaspoons of the final KI solution to give each day. The amount is based on the person’s age. Give this amount **once a day** until your healthcare provider or public health official says you may stop.

Age	Once Daily Dose of KI Solution
19 years and older	8 teaspoons
13 to 18 years (150 pounds or more)	8 teaspoons
13 to 18 years (149 pounds or less)	4 teaspoons
4 to 12 years	4 teaspoons
Older than 1 month to 3 years	2 teaspoons
Birth to 1 month	1 teaspoon

Storing Any Extra Prepared Final Potassium Iodide (“KI”) Solution:

Store any extra final KI solution mixed in Step 3 in a refrigerator. Any extra KI solution can be used another day. After 7 days, throw out any unused KI solution.

For more information regarding potassium iodide go to CDER’s Bioterrorism Page at the following web address:

<http://www.fda.gov/drugs/emergencypreparedness/bioterrorismanddrugpreparedness>

REFERENCES

Guidance, Potassium Iodide as a Thyroid Blocking Agent in Radiation Emergencies, U.S. Department of Health and Human Services, Food and Drug Administration Center for Drug Evaluation and Research (CDER), December 2001, Procedural

U.S. Food and Drug Administration, Emergency Preparedness, Bioterrorism and Drug Preparedness

<http://www.fda.gov/drugs/emergencypreparedness/bioterrorismanddrugpreparedness/ucm072248.htm>, accessed May 13, 2016

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