



NMNEC Concept: **Reproduction**

Mega Concept: Health and Illness

Category: Sexual Reproduction

Concept Name: Reproduction

Concept Definition:

Factors or concerns involving conception, pregnancy, and childbirth.

Scope and Categories:

The scope ranges from normal reproductive health (prevention of pregnancy, conception and pregnancy) to problems associated with human reproduction (infertility; maintaining a pregnancy). Reproductive age begins with puberty and ends with menopause. In the US, there were an estimated 3.8 million births in 2017 while childbirth is the number one reason for hospital admissions. Newborns are included in the reproduction concept due to being the result of childbirth as well as the fact that nurses working in childbirth settings care for both the new mother and the newborn. The scope of newborn health ranges from normal newborn health and transition at term to problems associated with problems related to genetic defects, preterm birth, and maternal and/or fetal problems during pregnancy and childbirth.

Populations at Risk:

All women during their reproductive age which begins with puberty and ends with menopause are at risk for reproductive health issues. Populations at highest risk are adolescent women. The teen birth rate in the United States is higher than many other developed countries with differences noted between ethnicities but has steadily declined almost 55% since 2007. In 2017, the birth rate for United States' Hispanics was 70:1000; for Blacks it was 50:1000; and for Whites, it was 26:1000.

Related to newborns at risk, in the United States, preterm birth affects nearly 500,000 babies (1 of every 8 newborns).

Risk Factors:

According to Bell and Jallo (2017), "Risk factors affecting successful reproduction and fertility transcend all races and nations, with third-world developing countries largely being affected greatest because of poverty" (p. 202). Risk factors affecting pregnancy and newborn health can be categorized into:



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- **Biophysical Factors:** genetic concerns, nutritional concerns, medical and obstetric disorders, changes in fertility and sexual functioning occurring with age (both men and women).
- **Psychosocial Factors:** unhealthy lifestyle behaviors such as smoking, drug (both recreational and prescription) and alcohol abuse, and addictions; psychological status including impaired mental health; interpersonal violence.
- **Sociodemographic Factors:** low income; inadequate prenatal care; urban versus rural geographic locations; ethnicity, and lack of social services, inpatient/outpatient rehabilitation services.
- **Environmental Factors:** industrial pollution; chemical exposure; bacterial and viral infections; drugs (over-the-counter [OTC], therapeutic, and illicit); stress.

Physiological Processes and Consequences:

- **Reproductive health:** Requires normal functioning of the reproductive systems of both men and women with the focus of this concept primarily on the reproductive health of women. Impairment of the reproductive system results in a number of menstrual problems including dysmenorrhea, amenorrhea, abnormal uterine bleeding, damage to reproductive organs, and infertility.
- **Prevention of pregnancy:** Requires both a desire to plan/manage fertility and access to family planning resources by both partners. Inability of plan/manage fertility can result in unplanned and/or unwanted pregnancy.
- **Pregnancy:** Requires complex developmental and physiologic events (starting with fertilization/conception through fetal development and maternal physiologic changes related to pregnancy, labor and birth, and the postpartal period) that must occur correctly and in the proper order. Pregnancy is a vulnerable period with maternal and/or neonatal outcomes potentially negatively affected in varying degrees by any of the pregnancy biophysical, psychosocial, Sociodemographic, and environmental risk factors.
- **Newborn:** Requires normal pregnancy and fetal development along with normal physiologic transitions at birth and during the newborn period. Newborn health can be negatively affected in varying degrees by any of the pregnancy biophysical, psychosocial, Sociodemographic, and environmental risk factors.

Assessment:

History:

Includes general health history with a focus on reproductive health including

- Sexual and menstrual history
- Pregnancy history (Gravida, parity [term/preterm], abortions, living children [G-TPAL])



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- Vaccination status
- Exposure to infectious diseases
- Mental health status
- Current dietary/nutrition status

Physical Examination

Includes general physical assessment with a focus on reproductive health organs. The desired norm in relation to women's health would be to have benign physical findings especially in relation to the heart, lungs, breasts, abdomen, pelvis, adnexa, and genitourinary, rectal, and lymph systems.

In pregnancy, there are presumptive (subjective); probable (objective), and positive (diagnostic) changes noted that are noted in the history and in the physical assessment. Fetal assessments are based on tracking fetal growth that meets expected norms as well as tracking fetal movements. Prenatal care includes determining the estimated date of birth (EDB) as well as screening for risk factors that have been shown to have a negative effect on pregnancy outcomes either for the mother or for her unborn child. Vital signs, weight gain patterns, uterine growth (fundal heights) and fetal growth and activity are tracked throughout pregnancy. Further details about pregnancy-related physical assessments and monitoring are discussed in the antepartum exemplar of this concept.

Physical examinations in labor and birth are general physical assessments with a focus on determining that the frequency, duration, and intensity of uterine contractions (powers) is adequate, that the fetus is successfully completing the cardinal movements (passenger) and is tolerating labor without compromise, that cervical changes are proceeding as expected (passageway), and that emotional labor support is provided and adequate (psyche).

Immediately following birth, maternal physical exams are general physical assessments that focus on determining that adaptations from a pregnant to a non-pregnant state are successful. There is a focus on uterine fundal checks for location and size to validate that involution is occurring as expected and that uterine tone is at the expected firmness to minimize risk of postpartum hemorrhage. In addition, breasts are assessed for expected changes with lactation. Further details about postpartum-related assessments are discussed in the postpartum exemplar of this concept.

Newborn physical exams are complete physical examinations that focus on successful transition from intrauterine to extrauterine life and provide a base for early identification of problems



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with adaptation to extrauterine life. It is critical that nurses working with newborns are skilled in their newborn physical assessment skills as most initial newborn exams are performed by nurses. Further details about newborn physical assessments are discussed in the newborn exemplar of this concept.

Diagnostic Tests

Will depend on the type of reproductive health concern. Diagnostic testing specific to reproductive health may include reproductive hormone levels to assessments of fetal well-being and pregnancy monitoring.

Some diagnostic tests in pregnancy include:

- Urine or serum pregnancy test
- Maternal blood type and Rh factor
- Complete blood count (CBC)
- Rubella titer
- Urinalysis
- Glucose tolerance test (GTT)
- Tests for:
 - *Neisseria gonorrhoeae*
 - *Chlamydia*
 - Hepatitis B and C
 - Group B *Streptococcus*
 - Rapid plasma regain (RPR)
 - HIV

A maternal assay to detect trisomy 21 (Down syndrome) and neural tube defects is available. Amniocentesis is an example of a diagnostic test that may be used to examine fetal cells for genetic disorders, neural tube defects, fetal hemolytic disease, or fetal lung maturity

Clinical Management - Interdisciplinary

Primary Prevention: Health promotion activities that further reproductive health and well-being

Examples: Abstinence and/or safe sex practices; family planning and contraceptive options; tobacco, alcohol, and drug cessation; avoidance of environmental toxins; folic acid supplementation; immunizations (both male and female); utilization of preconception and prenatal care; newborn feeding and care; parenting skills.

Secondary Prevention: Screening



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Examples: Numerous health screenings during preconception and/or prenatal care to provide early detection of disease and disease sequelae related to reproduction.

“Preconception health and health care focuses on taking steps now to protect the health of a baby in the future. However, preconception health is important for all women and men, whether or not they plan to have a baby one day.” (CDC, 2013). The purpose of prenatal care is to identify risk for and minimize reproductive complications for mother and fetus/newborn.

Tertiary Prevention: Treatment

Examples: Collaborative management with perinatologist and other interdisciplinary health care providers for concerns related to high risk pregnancy; assisted reproductive technologies for treatment of infertility; cesarean birth for treatment of problems occurring in childbirth; neonatal intensive care for treatment of newborn health issues.

Interrelated Concepts

Since the reproduction concept is connected with a population, all curricular concepts do relate to this concept and its exemplars. For example, nutrition links to prenatal health and to newborn feeding choices. Perfusion links to hypertension in pregnancy (preeclampsia) and to fetal monitoring. Thermoregulation links to newborn transitions. Culture links to circumcision. If providing examples for every concept, this list would be extensive. However, the main two concepts that link with every exemplar of the reproduction concept are:

- Sexuality: Sexual health contributes to reproductive and improved reproductive health outcomes.
- Health Promotion: Health promotion in the reproductive years is absolutely essential to improved reproductive health and pregnancy outcomes.

Exemplars:

New Mexico Nursing Education Consortium (NMNEC) Required Exemplars:

- Family Planning/Contraception
 - The Healthy People 2020 general goal related to family planning is to “Improve pregnancy planning and spacing, and prevent unintended pregnancy.”
- Preconception and Antepartum Health Promotion
 - Per Healthy People 2020, there are specific Maternal, Infant, and Child Health (MICH) Objectives that apply to this exemplar, including the following:
 - MICH-16: Increase the proportion of women delivering a live birth who received preconception care services and practiced key recommended preconception health behaviors



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- MICH-10 “Increase the proportion of pregnant women who receive early and adequate prenatal care
- Intrapartum and Birth Overview
 - An overview provides the link between Antepartum and Postpartum and Newborn Exemplars. This exemplar can be explored in depth in a labor and birth-focused clinical experience.
- Postpartum Health Promotion
 - Per Healthy People 2020, there are specific Maternal, Infant, and Child Health (MICH) Objectives that apply to postpartum health and behavior:
 - MICH-18: (Developmental) Reduce postpartum relapse of smoking among women who quit smoking during pregnancy
 - MICH-19: (Developmental) Increase the proportion of women giving birth who attend a postpartum care visit with a health worker
- Newborn Nutrition and Health Promotion
 - Per Healthy People 2020, there are specific Maternal, Infant, and Child Health (MICH) Objectives that apply to infant care, including the following:
 - MICH-20: Increase the proportion of infants who are put to sleep on their backs
 - MICH-21: Increase the proportion of infants who are breastfed
 - Baby-Friendly Hospital Initiative
 - Exclusive breastfeeding x 6 months
 - Rooming in between mothers and babes
 - No pacifiers
 - Prenatal, perinatal, postpartum, and community breastfeeding education
 - No formula for supplementation unless medically indicated



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References:

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Centers for Disease Control. (2013). *Preconception health and health care*. Retrieved from <http://www.cdc.gov/preconception/index.html>

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Healthy People 2020. (2012). *Maternal, child, and infant health*. Retrieved from <http://www.healthypeople.gov/2020/topicsobjectives2020/overview.aspx?topicid=26>

Resources:

Centers for Disease Control (CDC). (2012). *Preterm birth*. Retrieved from <http://www.cdc.gov/reproductivehealth/MaternalInfantHealth/PretermBirth.htm>

Lowdermilk, D. L., Perry, S. E., Cashion, K. & Alden, K. R. (Eds.). (2012). *Maternity & women's health care* (10th ed.). St Louis: Mosby Elsevier

Resolve. (2019). *Infertility 101*. Retrieved from <https://resolve.org/infertility-101/>

World Health Organization (WHO). (2012). *Sexual and reproductive health*. Retrieved from http://www.who.int/topics/reproductive_health/en/

Website Resources

Baby-Friendly USA @ <https://www.babyfriendlyusa.org/for-facilities/resources-for-professionals/>

Childbirth Connection @ <http://www.childbirthconnection.org/>

March of Dimes @ <http://www.marchofdimes.com/>

New Mexico Pregnancy Risk Assessment and Monitoring System (PRAMS) @ <https://nmhealth.org/about/phd/fhb/prams/>



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Preconception Health @ <https://www.womenshealth.gov/pregnancy/you-get-pregnant/preconception-health>

World Health Organization: *Great Expectations* @ http://www.who.int/features/great_expectations/en/index.html