Reproductive Endocrinology Infertility (REI) Nursing:
Patient-Centered Care in the Face of Emerging Technologies

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Learning Objectives

• Describe the history of the REI nursing specialty
• Describe the contemporary role of REI nurses in caring for patients facing reproductive challenges
• Describe role of education in bridging the gap between compassionate patient-entered care and highly technical therapeutic milieu
Introducing...

First IVF babies:

• 1978 - Louise Brown (UK)

• 1981 - Elizabeth Jordan Carr (USA)
REI Nursing Timeline

1978 -
- 1st IVF baby Louise Brown is born in UK
- Jean Purdy Surgical Nurse – 1st IVF Nurse

1981 – 1985
- US IVF Clinics open and Elizabeth Carr is born in Norfolk, VA
- Role of IVF Nurse Coordinators evolves

1986 – 1987
- 1st IVF Coordinator Conference in Houston
- 1st Nursing Post Grad Course/Abstracts at ASRM/World Congress in Norfolk, VA

1989 -
- Sub-specialty certification NAACOG

1990 -
- ASRM – Nurse Professional Group is founded

1996 -
- Credentialing discontinued

2009 -
- ASRM NPG - Nurse Certificate Course

2015
- ASRM-NP facilitates NCC revisiting credentialing
## Evolution of Fertility Treatment

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td><strong>Cervical Factor</strong></td>
<td>Surgical</td>
<td>Surgical</td>
<td>IUI</td>
<td>IUI</td>
<td>IUI</td>
</tr>
<tr>
<td><strong>Endometrial Factor</strong></td>
<td>No effective Rx</td>
<td>No effective Rx</td>
<td>No effective Rx</td>
<td>No effective Rx</td>
<td>? Alternative Rx</td>
</tr>
<tr>
<td><strong>Tubal Factor</strong></td>
<td>Surgery</td>
<td>Micro-surgery</td>
<td>Laparoscopic Surgery</td>
<td>IVF</td>
<td>IVF</td>
</tr>
<tr>
<td><strong>Pelvic Adhesive Disease</strong></td>
<td>Surgery</td>
<td>Micro-surgery</td>
<td>Laparoscopic Surgery</td>
<td>IVF</td>
<td>IVF</td>
</tr>
<tr>
<td><strong>Endometriosis</strong></td>
<td>Surgery</td>
<td>Micro-Surgery</td>
<td>Laparoscopic Surgery</td>
<td>IVF</td>
<td>Short Course Ov Ind - IVF</td>
</tr>
<tr>
<td><strong>Ovulatory Dysfunction</strong></td>
<td>Ovulation Induction</td>
<td>Ovulation Induction</td>
<td>Ovulation Induction</td>
<td>Short Course Ov Ind - IVF</td>
<td>Short Course Ov Ind - IVF</td>
</tr>
<tr>
<td><strong>Male Factor</strong></td>
<td>Donor Insem</td>
<td>Donor Insem</td>
<td>Insem - IVF</td>
<td>Insem / IVF - ICSI</td>
<td>IVF - ICSI</td>
</tr>
</tbody>
</table>
Evolution of Fertility Treatment

- 1990- Pre-implantation Genetic Diagnosis (PGD)
- 1993- Intracytoplasmic Sperm Injection (ICSI)
## Statistics

<table>
<thead>
<tr>
<th>CDC Report</th>
<th>2012</th>
<th>2013</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>US Clinics</td>
<td>456</td>
<td>467</td>
<td>2.41%</td>
</tr>
<tr>
<td>ART Cycles</td>
<td>176,247</td>
<td>190,773</td>
<td>8.24%</td>
</tr>
<tr>
<td>Live Births (Delivery of 1 or more living infants)</td>
<td>51,267</td>
<td>54,323</td>
<td>5.96%</td>
</tr>
<tr>
<td>Live Born Infants</td>
<td>65,160</td>
<td>67,996</td>
<td>4.35%</td>
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</table>
Impact on Nursing

According to 2015 survey conducted by ASRM NPG:

- Estimated 2200 RNs currently work in the field
- Does not include RN’s working in pharmaceutical, insurance, higher education etc.
- 25% of all RN’s have been in the specialty for less than 2 years (at least 550 RN’s)
Demand for infertility services continues to grow

- Delayed childbearing
- Average age for first birth continues to rise
- OB/GYN and PCP staff are patient’s primary contacts
- A timely and compassionate work-up followed by cost effective treatment strategy is warranted
# Indications

<table>
<thead>
<tr>
<th>Indications for Immediate Referral</th>
<th>Indications for Expedited Referral</th>
<th>Clomid Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-year unprotected intercourse &gt; 38 years</td>
<td>Recurrent Pregnancy Loss</td>
<td>Start CC 50mg PO daily x 5 days on cycle day 3, 4 or 5</td>
</tr>
<tr>
<td>Low Ovarian Reserve - High FSH / Low AMH</td>
<td>Family History of Early Menopause ( &lt;age 40)</td>
<td>Check OPK at night starting 7 days after clomid</td>
</tr>
<tr>
<td>Low Sperm Count</td>
<td></td>
<td>Intercourse when first change noted on OPK</td>
</tr>
<tr>
<td>Abnormal HSG</td>
<td>If no other identifiable risk factors, consider treatment with Clomid for up to 3 cycles</td>
<td>If no ovulation noted, check ultrasound for dominant follicle</td>
</tr>
<tr>
<td>Genetic Predisposition to Disease</td>
<td></td>
<td>If not pregnant or no response, increase by 50 mg</td>
</tr>
</tbody>
</table>
Incidence of Infertility

Incidence of Infertility

- Female: 30%
- Male: 30%
- Both: 10%
- Unexplained: [VALUE]%
Female Factors

- Ovulatory dysfunction
- Tubal and peritoneal (pelvic) abnormalities
- Uterine abnormalities
- Unexplained
Ovarian Reserve

- Ability of a woman to reproduce declines with age
- Decline has been shown to be related to the ovary
- Diminished ovarian reserve can be defined as “the process of follicular depletion and diminished oocyte quality”
Changes in Reproduction with Maternal Age

# Oocytes

Birth | Puberty | Menopause

Reproductive Potential

Atresia
Increased Frequency of Abnormal Oocytes with Age

Percent of abnormalities of spindle and segregation of chromosomes
Male Factors

• Hormonal
  • Hypothalamic-pituitary disorders
• Physical
  • Primary gonadal disorders
• Disorders of sperm transit
• Unexplained
Diagnostic Tests

- Female Factors:
  - Hormonal Issues
  - Ovarian Reserve
- Structural Issues
  - Tubal-Peritoneal Factors
  - Uterine Factors
- Male Factors
- Prenatal Testing/Genetic Testing
# 30 Day Diagnostic Evaluation

## Diagnostic Testing

<table>
<thead>
<tr>
<th>Test</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day 3 FSH</td>
<td></td>
</tr>
<tr>
<td>Anti-Mullerian Hormone</td>
<td></td>
</tr>
<tr>
<td>Estradiol</td>
<td></td>
</tr>
<tr>
<td>Transvaginal Pelvic Ultrasound</td>
<td></td>
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</tbody>
</table>

## Transvaginal Pelvic Ultrasound

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perform</td>
<td>Basal Antral Follicle Count (4-8 min)</td>
</tr>
<tr>
<td>Rule Out</td>
<td>Hydrosalpinges, Ovarian masses, Uterine Leiomyomata</td>
</tr>
</tbody>
</table>

## Diagnostic Testing

<table>
<thead>
<tr>
<th>Test</th>
<th>Details</th>
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</thead>
<tbody>
<tr>
<td>HSG</td>
<td></td>
</tr>
<tr>
<td>Semen Analysis</td>
<td>Can be completed anytime during the cycle</td>
</tr>
</tbody>
</table>

## HSG

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Antibiotic prophylaxis if prior tubal disease or suspicion for tubal or adhesive disease</td>
</tr>
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</table>

## Diagnostic Testing

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<tr>
<th>Test</th>
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<tbody>
<tr>
<td>Ovulation Predictor Kit</td>
<td>Beginning on evening of cycle day 12</td>
</tr>
</tbody>
</table>

## Diagnostic Testing

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<td>Serum Progesterone</td>
<td>Obtain serum sample 7 to 10 days after the patient detects a mid-cycle surge</td>
</tr>
</tbody>
</table>
Female Testing

- Hormonal
  - Thyroid Stimulating Hormone (TSH)
  - Prolactin

- Ovarian Reserve Testing
  - Day 3 Follicle Stimulating Hormone (FSH)
  - Basal Antral Follicle Count (BAFC)
  - Anti-Müllerian Hormone (AMH)
Ovarian Reserve Testing

- Day 3 FSH with estradiol
- Day 3 Antral Follicle Count
- Serum AMH
- Clomid Challenge Test

Hysterosalpingogram
Saline Sonogram
Male Infertility Testing

- Semen Analysis
  - Count
  - Motility
  - Morphology
- Anti-Sperm Antibody Testing
Treatment

- Timed Intercourse
- Intrauterine Inseminations
- In Vitro Fertilization (IVF)
- Third Party Reproduction
- Fertility Preservation

- Oral Medications vs. Injectable Medications
Patient Education

Basics:
• Male & Female Anatomy
• Sexual Reproduction
• Menstrual Cycle
  • Follicular and Luteal phase
  • Surge/Ovulation
• Ovulation Predictor Kits (OPK)
• Intrauterine Insemination
High Tech:
- In Vitro Fertilization cycle
- Intracytoplasmic fertilization or ICSI
- Assisted Hatching
- Embryology
- Morula
- Blastocyst
- Dyssynchrony
- Embryo Cryopreservation
Patient Education

High Tech:
• Pre-implantation Genetic Diagnosis
• Comprehensive Chromosomal Screening
• Single Gene Screening
• Translocation Screening
• Family Balancing
Patient Education

Alternative:
• Third Party Reproduction
  • Ovum donor
  • Egg Recipient
  • Gestational Carrier
• Fertility Preservation
  • Elective
  • Cancer Survivor Strategy
Patient Education

General Education:
• Cycle Types
• Medication Instructions
• Consents/Legal Issues
• Post Egg Retrieval and Embryo Transfer Instructions
• Complementary Care
  • Counseling
  • Nutrition Therapy
    • BMI management
    • Gluten/Casein Free
• Acupuncture
• Yoga
Evolution of the Nurse’s Role in Infertility

- Expanded responsibilities in nursing practice
- High levels of proficiency
Factors Influencing the Nurse’s Role

- Hospital vs. Private Practice
- Size of the clinic
- Presence of REI Fellows
- Support Staff
- Satellite Offices
- Nursing Education Department
REI Nurse’s Job Description

“This position provides care to patients by completing a specialized nursing process; collaborating with physicians and multidisciplinary team members; providing physical and psychological support to patients, and supervising other clinical personnel as needed…”
Many Hats…

- Phlebotomist
- Ultrasound technician
- Preoperative & Operative Nurse
- Nurse Educator
- Research Nursing
- 3rd Party Coordinator
- Fertility Preservation Coordinator
- Satellite Coordinator
Many Hats…

- Legal Counselor
- Insurance Advisor
- Patient Advocate
- Patient Educator
- Informal Counselor
- Professional Association Member
Nursing Roles

• Coordinate Care
• Perform Ultrasounds (USS), intrauterine inseminations (IUI), embryo transfers (ET)

• Morning Nurse
• Triage Nurse
• On Call Nurse
Nursing Model: INDEPENDENT

- Team approach
- Physician as the Team Leader
- Holistic view
- Nurse’s opinion and knowledge is solicited, valued and relied on for decision making
Advantages of Primary Nursing in the REI setting

For the patient

• Creates a central figure in care
• Assists in navigation of care/skill development
• Strong nurse-patient relationship built on trust
• Reduction in anxiety
Advantages of Primary Nursing in the REI setting

For the RN

- Creates caring bond w/patient and partner
- Enhanced autonomy which facilitates evaluation and treatment
- Identify patient’s needs: create a proactive plan of care
Patient Response to Infertility Diagnosis
Patient’s Feelings Related to Infertility

- Shock
- Disbelief
- Anger
- Guilt
- Isolation
- Grief
- Pain
Infertility is a Crisis

- Patients are infertile
- Patients are suffering
- Patients are hoping that someone will be able to help them
REI Nurse

• Knowledgeable central figure coordinating care and providing emotional support
What Nurses can do to Facilitate the Fertility Process

- Listen
- Make time for the patient
- Treat the couple
- Provide honest and realistic expectations
- Provide appropriate education
What Nurses can do to Facilitate the Fertility Process

- Referrals:
  - Psychological counseling (individual or group)
- Complementary services
  - Yoga
  - Meditation
  - Acupuncture
  - Mind-body classes
What Nurses can do to Facilitate the Fertility Process

- Discuss alternatives when appropriate
- Treatment cessation
- Childfree living
- Adoption
Preparing Nurses for the Challenges of REI Nursing

Orientation
Continuing Education
Novice to Expert in REI

**Novice**
- < 1yr. REI experience
- 90 Day Orientation
  - Classroom
  - Shadowing Paired w/preceptor

**Advanced Beginner**
- 12 – 18 mos.
  - Practices autonomously

**Competent**
- > 18 mos.
  - Autonomous
  - Part of specialty Team
    - Third Party
    - Fertility Preservation

**Proficient**
- > 24 mos.
  - Autonomous
  - Assumes Leadership position:
    - Satellite/office Lead Nurse

**Expert**
- > 36 mos.
  - Assumes Leadership position such as:
    - Preceptor
    - Educator
    - Practice Administrator
I can see your lips are moving but all I hear is...
# Curriculum Grounded in the 3 Domains of Learning:

<table>
<thead>
<tr>
<th>COGNITIVE</th>
<th>AFFECTIVE</th>
<th>PSYCHOMOTOR</th>
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<tbody>
<tr>
<td>• Knowledge</td>
<td>• Feelings</td>
<td>• Perception</td>
</tr>
<tr>
<td>• Comprehension</td>
<td>• Emotions</td>
<td>• Readiness to act</td>
</tr>
<tr>
<td>• Application</td>
<td>• Attitudes</td>
<td>• Guided response</td>
</tr>
<tr>
<td>• Analysis</td>
<td></td>
<td>• Developing habits grounded in evidence and best</td>
</tr>
<tr>
<td>• Synthesis</td>
<td></td>
<td>practices</td>
</tr>
<tr>
<td>• Evaluation</td>
<td></td>
<td>• Creating new processes</td>
</tr>
</tbody>
</table>
Principles of Adult Learning

- WHY?
- Self-directed
- Experience
- Just-in-Time
- Encouraging

Billings & Halstead, 2009
Teach to Learners: VARK

- Auditory
- Visual
- Read/Write
- Kinesthetic

Kickbusch, 2001; Beagley, 2011; Rogowsky, Calhoun & Tallal, 2014
Promote Retention

- See
- See & Hear
- See, Hear & DO
Methods

• Adjust Teaching Methods to Learners
  • Assigned readings
  • Didactic lectures
  • Case Studies
  • ELearning
  • Mock patient-nurse interactions and phone calls
  • Clinical Rotations by department and by nurse role
Burn Out Prevention

American Nurses Association
5 Rights of Delegation

• Right task
• Right circumstances
• Right person
• Right directions and communication
• Right supervision and evaluation
Self Care

- Take breaks away from desk
- Use humor
- Debrief after a stressful event-information sharing and event processing session conducted between peers
- Leave work at work
- Take time to relax
Continuing Education

- Online education
- Networking
- Peer Review Journals
- Research publications
- Newspapers
- Professional memberships
- Attend seminars
Key Points

- Nurses can be proactive rather than reactive in patient care if they develop a close professional relationship with their patients.

- Nurses who work with infertile patients have the distinct privilege of intimately watching the evolution of a family.
Key Points

- There may be a positive or negative outcome for a patient or couple.
- Regardless of the outcome, nurses have the ability to make the experience positive by cultivating a supportive, reliable and trusting relationship with our patients.
Key Points

- Continuing education is key to professional development and career growth in the rapidly changing field of infertility
Thank You
References