

# Demography and Family Planning



# DEMOGRAPHY

- ▶ The scientific study of human populations, including their sizes, compositions, distributions, densities, growth, and other characteristics, as well as the causes and consequences of changes in these factors.

# DEMOGRAPHY

- ▶ It focuses on three readily observable human phenomena:
  - Changes in population size (**growth or decline**)
  - **Composition** of the population and,
  - **Distribution** of the population.
- ▶ It deals with five demographic processes: **fertility, mortality, marriage, migration and social mobility.**

# Demographic cycle



## Stage I: High

### Stationary

- Characterized by High birthrate and high death rate which cancel each other and population remains stationary. E.g. India till 1920.

## ▶ Stage II: Early Expanding

- Death rate begins to decline but birth rate remains unchanged as the result of improvement of health condition. E.g. many South Asian and African country currently.

# Demographic cycle



## Stage III: Late

### Expanding

- Death rate declines still further and the birth rate tends to fall resulting continuous grow of population. E.g. India has entered in this phase and China & Singapore are already in this phase.
- ▶ **Stage IV: Low stationary**
  - Characterized by low birth rate and low death rate resulting stationery population (Zero growth rate). E.g. Austria during 1980–85, UK, Denmark, Sweden 1980–85 GR: ,0.1)

# Demographic cycle



## Stage V:

### Declining

- Population becomes to decline because birth rate is lower than the death rate. E.g. Germany and Hungary.



# Family Planning

- ▶ The conscious effort of couples to regulate the number and spacing of births through artificial and natural methods of contraception. Family planning connotes conception control to avoid pregnancy and abortion, but it also includes efforts of couples to induce pregnancy.

# Family Planning

- ▶ An expert committee of the WHO (1971) defined Family Planning as “a way of thinking & living that is adopted voluntarily, upon the basis of knowledge, attitude & responsible decisions by individual & couples, in order to promote the health & welfare of the family group & this contribute effectively to the social development of a country.”



# Family planning helps individuals or couples to attain certain objectives:

- ▶ To avoid unwanted births
- ▶ To bring about wanted births
- ▶ To regulate the intervals between pregnancies
- ▶ To control the time at which birth occurs in relation to the age of the parent
- ▶ To determine the number of children in the family.

# Scope of Family Planning

1. The proper spacing and limitation of birth
2. Advice on sterility
3. Education for parenthood
4. Sex education
5. Screening for pathological conditions of RH
6. Genetic counseling
7. Premarital consultation and examination
8. Carrying out pregnancy test
9. Marriage counseling
10. Preparation of couple for the arrival of their 1<sup>st</sup> child
11. Providing service to unmarried mothers
12. Teaching home economics and nutrition
13. Providing adoption services

# Benefit of family planning

- ▶ FP is the one of the most effective and inexpensive way of improving the present and future quality of life on earth.
- ▶ FP could save the life of  $1/4^{\text{th}}$  –  $1/2$  of 5,00,000 maternal deaths.
- ▶ Also prevent the damage caused by high risk and undesired pregnancies.
- ▶ Could prevent most or all 50,000 illegal abortion/day and resulting 1,50,000 death/year.

# Benefit of family planning

- ▶ Decrease the physical and mental exhaustion resulting from large family and poorly time pregnancy.
- ▶ Women would have more time for: education, vocational development, income production, recreation and care of existing children.
- ▶ Save millions of infant lives per year by reducing the number of high risk births.
- ▶ Lead to significant improvement in infants nutrition and health.

# Benefit of family planning

- ▶ Decrease the number of teenage pregnancies
- ▶ Decrease the incidence of cervical cancer
- ▶ Decrease the incidence of sexually transmitted diseases.

# Contraceptives methods

- ▶ Contraceptive methods are preventive methods to help women avoid unwanted pregnancies including all temporary and permanent measures to prevent pregnancy resulting from coitus.

# Contraceptives methods

## 1. Spacing

- i. Barrier methods: Physical, Chemical, combined
- ii. Intrauterine devices
- iii. Hormonal methods
- iv. Post-conceptual methods
- v. Miscellaneous

## 2. Terminal methods

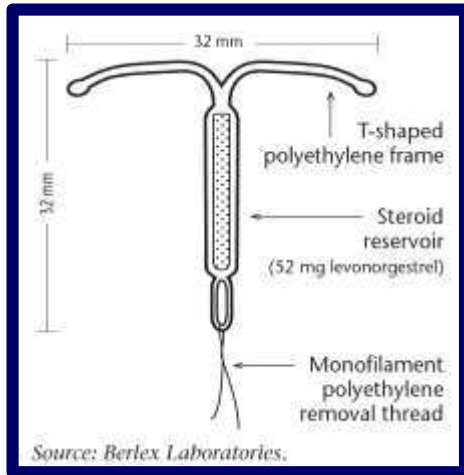
- i. Male sterilization
- ii. Female sterilization

# 1. Barrier method

- ▶ Include both physical and chemical barriers.
  - Condoms (male & female)
  - Cervical barriers (diaphragm & cervical cap)
  - Spermicidal (foam, sponge)
- ▶ Work by preventing sperm from reaching an ovum.
- ▶ Only condoms provide protection against STIs.



# IUD Mechanisms of Action



## Levonorgestrel-Releasing IUD (LNG-IUS, Mirena®)

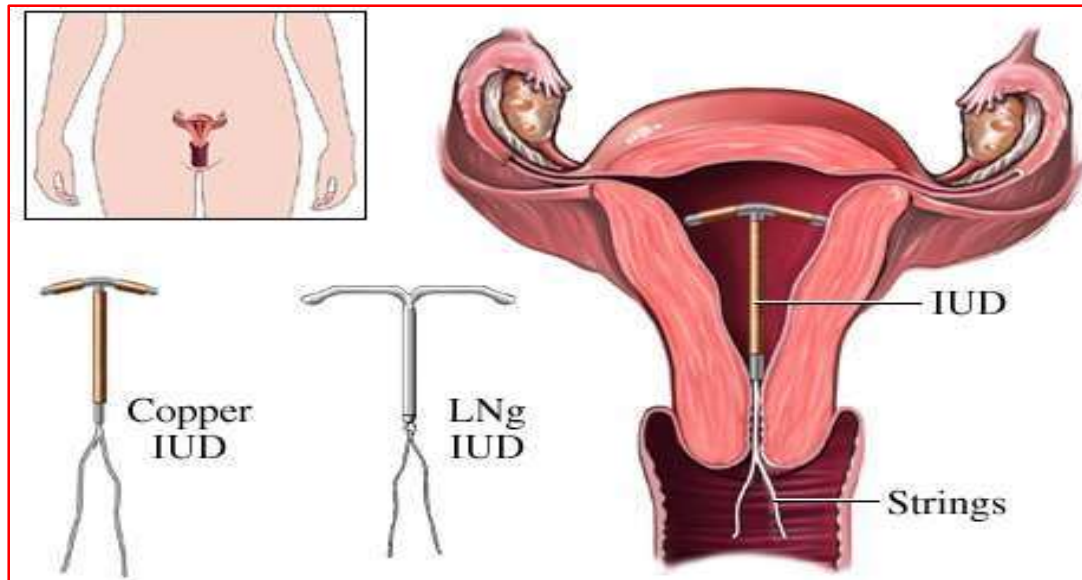
- Inhibits fertilization
- Thickens cervical mucous
- Inhibits sperm function
- Thins and suppresses the endometrium

## Copper-Releasing IUD (ParaGard® T380A)

- Inhibits fertilization
- Releases copper ions ( $\text{Cu}^{2+}$ ) that reduce sperm motility
- May disrupt the normal division of oocytes and the formation of fertilizable ova

# Intrauterine Devices (IUDs)

- ▶ Very high continuation rate compared with other methods
- ▶ Duration
  - Copper: good for up to 10 years
  - Hormone: good for up to 5 years



# Intrauterine Devices

- ▶ Bleeding and Pain
- ▶ Pelvic infection: 2–8 times higher than normal
- ▶ Uterine perforation: 1;150 to 1: 9000 insertion
- ▶ Ectopic pregnancy: 0.2/10000
- ▶ Expulsion: 12–20%
- ▶ Cancer and teratogenicity
- ▶ Mortality : 1 /100000 women – years of use
- ▶ Suspected pregnancy
- ▶ Undiagnosed vaginal bleeding
- ▶ Ca cervix, uterus
- ▶ Previous ectopic pregnancy
- ▶ Anaemia
- ▶ PIDs
- ▶ Congenital malformation of Reproductive organs

Side effects

Contraindication

# Advantages and Disadvantages

## ▶ Advantages

- Very effective (essentially no “user error”)
- Long-term protection
- No interruption of sexual activity
- Don't have to remember to use
- Can be used during breast-feeding

## ▶ Disadvantages

- No STI protection
- Risk of PID (usually within first 1–2 months following insertion)
- Rare incidence of perforating uterine wall

# 3. Hormone-based contraceptives

two types hormone based contraceptives

## 1) Oral contraceptives Pills (OCPs)

- 1) Combined pills
- 2) Progesterone only pill (POP)
- 3) Once a month (long acting pill)
- 4) Male pill

## 2) Depot (slow release) formulations

- 1) Injected hormones
- 2) Vaginal ring
- 3) Transdermal patch
- 4) Hormonal IUDs

# Oral contraceptives Pills (OCPs)

## ▶ Combined pill

- Contains both estrogen and progestin
- At present most of combined pills contain 30–35 mcg of synthetic estrogen and 0.5–1.0 mg of progesterone.
- Given daily for 21 consecutive days beginning on the fifth day of the menstrual cycle, followed by 7 days breaking during which period menstruation occurs.

## ▶ Progestin-only pill

- Low dose of progestin and no estrogen
- For women who should not take estrogen (breastfeeding, high blood pressure, at risk for blood clots, smoke)

# Oral contraceptives Pills (OCPs)



Once a

month pill

- Contains **quinestrol**, a long acting estrogen is given in combination with a short acting progesterone.
  - High pregnancy rate and also high irregular bleeding.
- ▶ **Male pill**
- Preventing **spermatogenesis**
  - Interfering sperm storage and maturation
  - Preventing sperm transport to vas
  - Affecting constituents of the seminal fluids
  - **Under investigation**

# How to use oral contraceptives

- ▶ Different types of OCPs will differ in how to begin, and other instructions: read instructions carefully & talk with health workers
- ▶ **Don't skip pills**, regardless of whether or not you are having sex
- ▶ Take pill at the **same time each day**
  - If you miss 1 pill: take missed pill as soon as you remember, and then take next pill at the regular time
  - If you miss > 1 pill: consult health care practitioner for advice; use a **backup method** for remainder of your cycle



# Possible side effects & health issues

- ▶ **Women who should not take OCs:**
  - History of blood clots, strokes, heart/circulation problems, jaundice, breast or uterine cancer, liver disease
  
- ▶ **Women considered risky for taking OCs:**
  - Women who smoke, have migraines, depression, high BP, epilepsy, diabetes, asthma, varicose veins

# Possible side effects & health issues

- ▶ Side effects of OCs can include:
  - Weight gain, decreased sexual interest, headaches, mood changes, nausea, bleeding between periods
  - May clear up after 2–3 cycles on the pill
- ▶ Rare side effect include carcinogenesis, metabolic disorder, liver disorders etc.

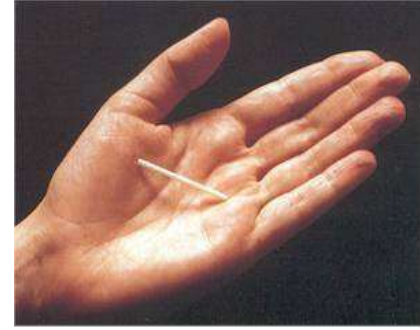
# Depot Formulations

## ▶ Injected Contraceptives

- DMPA or Depo-Provera contains 150mg/ml Depot medroxy-progestrone acetate.
- Dose: 150mg/ml every 3 weeks.
- Constraints: no STD protection, weight gain, bleeding, mood change, frequent clinic visits.
- Takes up to 10 months for a woman to get pregnant after stopping. injections



# Depot Formulations



## ▶ Contraceptive Implants

- Also known as **Norplant**, 6 silicon capsule containing **35 mg levonorgestrol** each capsule.
- Inserted under skin of upper arm
- Progestin-only
- Effective for up to **5–8 years**
- No need to daily intake
- No STD protection, weight gain, bleeding, mood change, need of surgical procedure

# Depot Formulations



## ▶ Vaginal ring

- 2" ring inserted into the vagina during period
- Containing levonorgestrel.
- Worn for 3 weeks, removed for 1 week, then replaced with new ring
- No STD protection, not effective for all women .

# Post-conception Method



## Menstrual

### regulation

- Aspiration of uterine contents 6–14 days of missed period; cervical dilation is done.
- May be uterine perforation and trauma, infertility, ectopic pregnancy etc.

## ▶ Abortion

- Termination of pregnancy before 28 weeks of pregnancy
- May have serious consequences including hemorrhage, trauma, uterine perforation, sepsis, infertility, ectopic pregnancy and even mortality.
- Legal aspect

# Miscellaneous

## Abstinence

- This is the total avoidance of sexual activity.
- It carries a 0 (zero) percent chance of getting pregnant.
- The mystery of Aspirins
- Question arising to possibilities.

# Miscellaneous

## Withdrawal/Coitus interruption

- ▶ During sex the man withdraws his penis from the vagina before he ejaculates.
- ▶ The effectiveness rate varies with the self-control of the male.
- ▶ The male must recognize he is about to ejaculate and pull out.
- ▶ With typical use about 20 out of 100 females would be pregnant after one year of using withdrawal.



# Miscellaneous

## Breast feeding

- ▶ Lactation prolongs the post partum amenorrhea and provides some degree of protection
- ▶ No more than 5–10% women becomes pregnant before 1<sup>st</sup> menstruation after delivery.
- ▶ Usually before child becomes 6 months and need to frequent breast feeding.

## Birth control vaccine

- ▶ Immunization with a vaccine prepared from **beta sub unit of human chorionic gonadotrophin (HCG)**
- ▶ Now in clinical trail and uncertainties are great.

# Sterilization

- Essentially permanent, although vasectomies are sometimes reversible.
- Does not affect hormones, desire, sexual functioning.
- Only one time method in life.
- Provides most effective protection against pregnancy.
- Very low risk of complication if performed according to the accepted medical standards.
- Includes vasectomy and minilap and laparoscopy .

# Female sterilization

- ▶ Two procedure are most common: laparoscopy and minilaparatomy
- ▶ **Laparoscopy:** specialized instrument Laparoscope inserted through abdominal approach and fallopian tubes are blocked with clip or rings.
- ▶ **Minilap:** 2.5–3 cm incision in abdomen is done under local anesthesia and fallopian tubes cut and blocked in both sides.

# Male sterilization: Vasectomy

- ▶ Simple operative procedure can be conducted even in rural PHCCs by trained junior medical officers
- ▶ Removal of 1 cm of vas after clamping.
- ▶ Needs backup method for at least 30 ejaculations.
- ▶ Approximately 100% effective method.
- ▶ Non scalpel vasectomy new technique applied today's is more effective.

# Emergency Contraceptives

- ▶ **Hormonal:** 4 tablet within 72 hours of unprotected intercourse and another 4 tablet followed by 12 hours of first dose in case of combine pills containing 30–35 ug estrogen and 2 tablet with in 72 hour and another 2 tablet followed by 12 hours of first dose in case of pills containing 50 ug oestrogen.
- ▶ **IUD:** copper T is with in 5 days of unprotected intercourse.

# Delivery Mechanisms : public sectors

- ▶ Community
- ▶ Sub health post
- ▶ Health post
- ▶ Primary Health Center
- ▶ District hospitals
- ▶ Zonal hospitals
- ▶ Regional/Sub-regional hospitals
- ▶ Central hospitals
- ▶ Family Planning Division

# Community level

## Community:

- ▶ Service provided by VHWs, MCHWs, FCHVs through home visits and PHC/ORC clinics.
- ▶ Service included are distribution of male condoms, OCPs, DMPA; referral for other methods and counseling on FP.

## Sub Health Post

- ▶ Service provided by VHWs, MCHWs, and AHWs.
- ▶ Service included are distribution of male condoms, OCPs, DMPA; referral for other methods and counseling on FP.

# Community level

## Health post

- ▶ counseling on Family planning.
- ▶ Service provided by VHWs, ANMs, AHWs and HAs.
- ▶ Service included are distribution of male condoms, OCPs, DMPA.
- ▶ Insertion of IUDs and Norplant in some HPs where trained health workers
- ▶ Referral for terminal methods.



# Community level

## Primary Health care:

- ▶ counseling on Family planning.
- ▶ Service provided by VHWs, ANMs, AHWs and HAs.
- ▶ Service included are distribution of male condoms, OCPs, DMPA.
- ▶ Insertion of IUDs and Norplant
- ▶ Terminal methods in some PHCs where trained medical officers.
- ▶ Otherwise referral for terminal methods.

# District level

- ▶ District hospital: Service provided through MCH clinic
- ▶ Include all methods: Distribution of condoms and OCPS, Injecting DMPA, Insertion of IUDs and Norplant and Vasectomy and minilap.
- ▶ Also emergency contraception and MTP (medical termination of pregnancy).
- ▶ Mobile clinics for vasectomy and minilaps.

# Zonal/Regional and National Level

- ▶ Same as district level
- ▶ Also recanalization facility for males in central level
- ▶ Also other advanced facility for example management of infertility, sex education, genetic counseling in central level.

# Delivery Mechanisms : private sectors

- ▶ NGO/INGO/ voluntary organizations
- ▶ Family Planning association of Nepal
- ▶ Suaulo Pariyar Nepal/Mary Stops center
- ▶ Nepal CRS company
- ▶ Family Health International
- ▶ Community Hospitals
- ▶ Private dispensaries, Clinics, hospitals and nursing hospitals etc.

# Delivery Mechanisms : private sectors

- ▶ Service provided epically with low charge
- ▶ Service provided with their branches and sub branches.
- ▶ Social marketing of products: condoms, OCPs, DMPAs etc.
- ▶ Medical termination of pregnancy.
- ▶ Emergency contraceptives production and commercial marketing