# Preconception Counseling for Females after Cardiac Transplantation

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# Introduction

## Preconception Counseling – Why

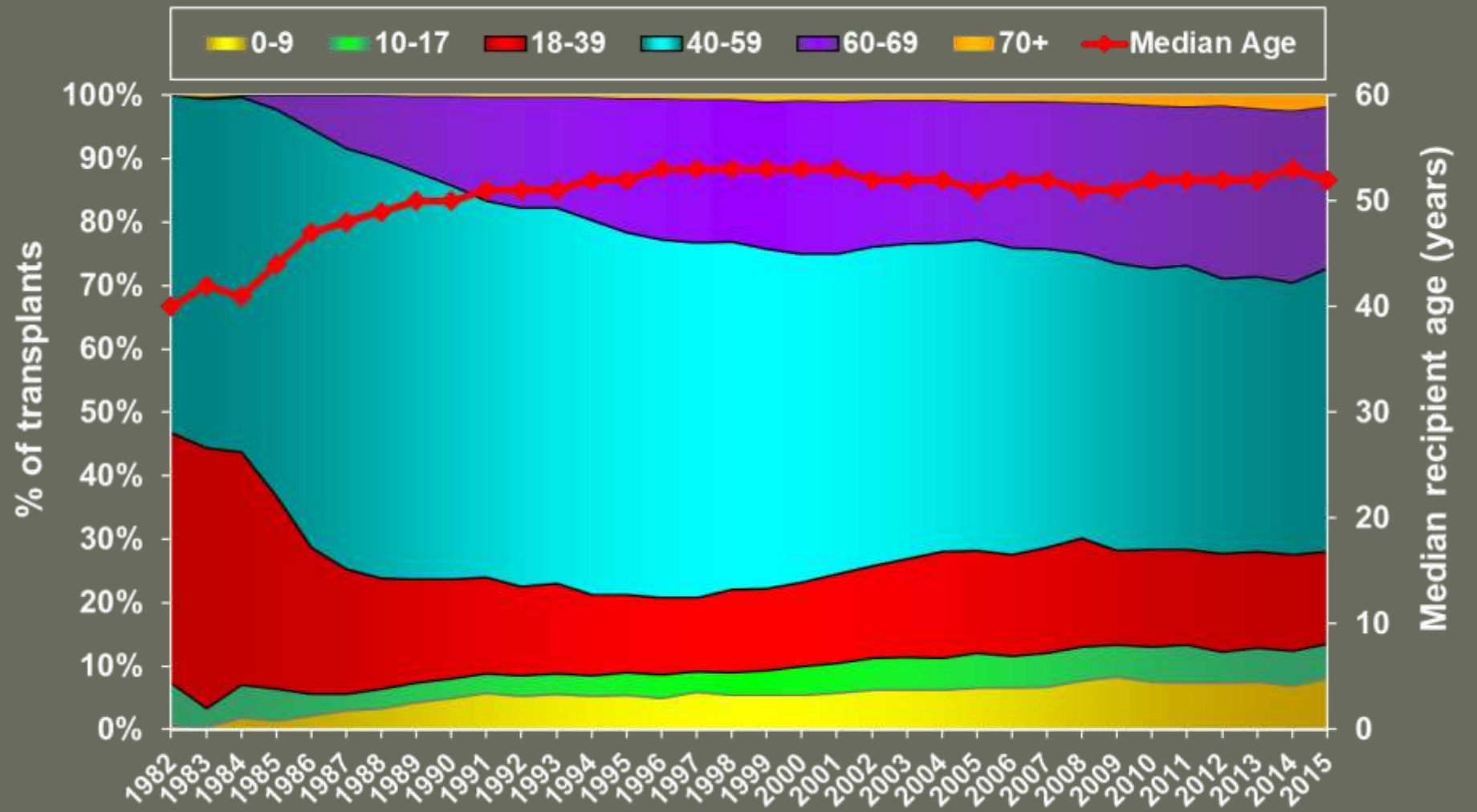
Worldwide, female patients represent approximately 20% of overall cardiac transplants;

Between 2006–2012, 25% of female cardiac transplant patients were between the ages of 18-39 years

Unintended pregnancy rate in organ transplant recipients approaches 50%;

American Society of Transplantation (AST), 2005
International Society Heart Lung Transplantation (ISHLT) 2013

# Adult and Pediatric Heart Transplants
## Recipient Age by Year of Transplant

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2017
JHLT. 2017 Oct; 36(10): 1037-1079

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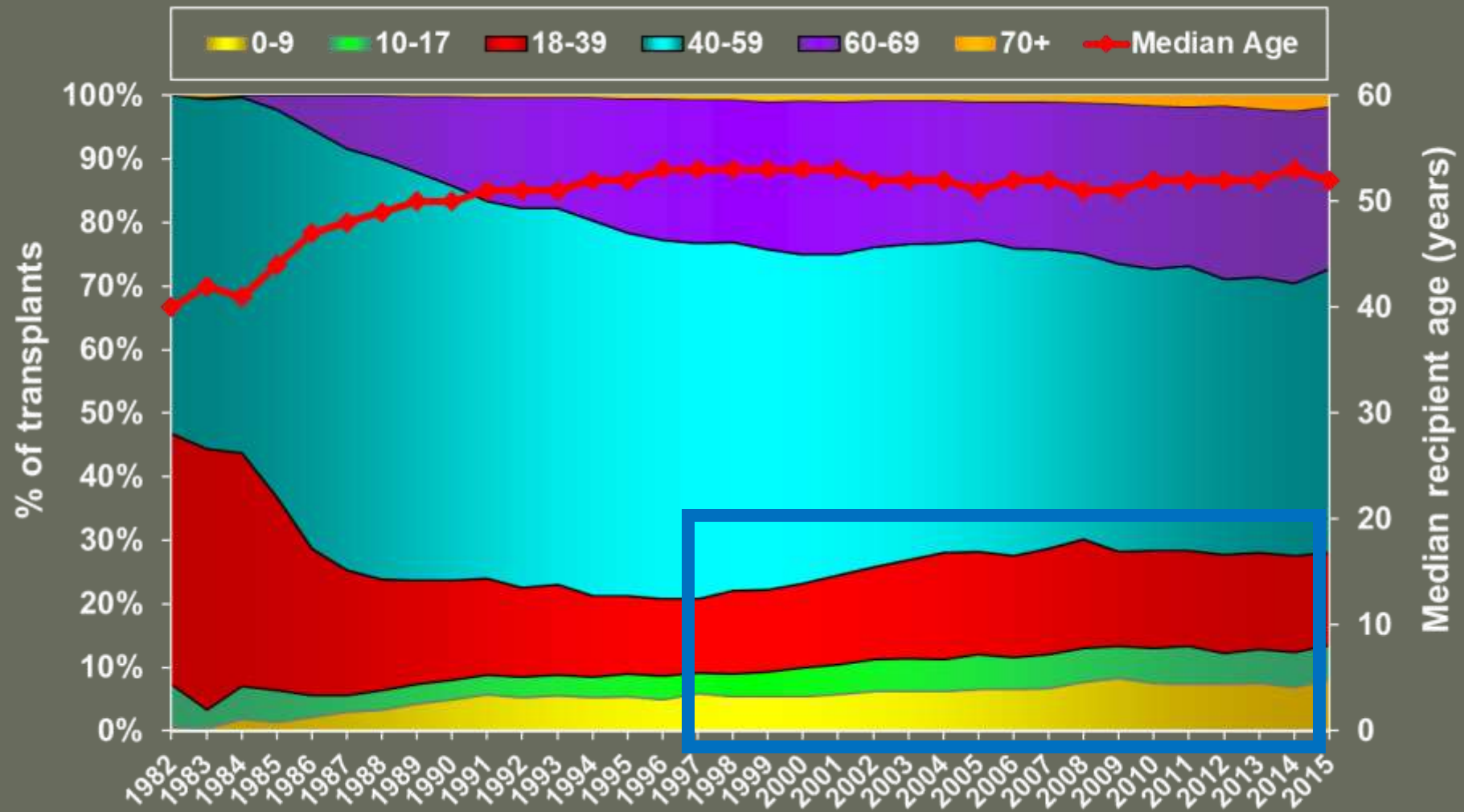


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# A Dedicated Preconception Counseling Program

Ensures that females of childbearing age who have undergone a CTX understand:

- Potential and actual risks associated with pregnancy for mother and fetus
- Importance of planned pregnancies
- Contraception choices and how to get them

For woman (and spouse) contemplating pregnancy, allows CTX team time to:

- Develop a pregnancy risk profile
- Identify the multi-disciplinary team

# Maternal-Fetal Risk

**Maternal**

- Rejection – will require close monitoring of immunosuppression
- Infection
- Hypertension
- Pre-eclampsia

**Fetal Risks**

- Fetal wastage
- IUGR
- Preterm delivery (<37wk)
- Small for gestational age
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# A Dedicated Prepregnancy Counseling Program

Multi-disciplinary team approach

- Cardiology team : CTX, electrophysiology, (EP)
- Reproductive team
  - Maternal fetal medicine (MFM)
  - Gynecologist – contraception
- Genetics

Pre-pregnancy counseling - for all females of childbearing age (12-39)

Pre-conception counseling and evaluation – for females/couples contemplating pregnancy

# Preconception counseling When to begin?

- National Transplant Pregnancy Registry
- American Society of Transplantation: Consensus summary
  - Topic should be introduced at the pre-transplant evaluation
  - Should be followed up throughout the post-transplant process
  - For female desiring to become pregnant should be offered to both patient and partner

# Preconception counseling: When to initiate


- Pre-transplant evaluation
  - Determine importance of having a pregnancy
  - Do they have a husband/partner what is his understanding and questions
  - Initiate discussion re:
    - Pregnancy planning
    - Contraception

- Every visit – annually
  - Review and update risk profile
    - Now sexually active
    - Contraception
  - Look for milestone events:
    - Serious relationship
    - Engagements
    - Marriage
      - Review reproductive life plan but with partner

# Preconception counseling: Adolescents

- Opportunities to begin dialogue
  - when menses begin
  - the “first boyfriend”
- Make it known that issues like sex, contraception and pregnancy are OK
- Don’t put teen off when questions comes up
- Parents of young girls: should be introduce to topic so they are informed and comfortable to talk to teens

# A dedicated preconception program

## For female/couple contemplating pregnancy

AST recommendation:

- Wait 1-2 years post transplant to become pregnancy
- No rejection in past year
- Adequate and stable graft function
- Maintenance immunosuppression at stable dosing

Contraception should be discussed and provided during first year post transplant

A meeting should be scheduled to develop risk profile

# Components of Preconception Counseling Pregnancy Risk Profile

- Transplant History
  - Date of CTX
  - Rejections, recent
  - Chronic allograft dysfunction
- Underlying cause leading to CTX
  - Congenital heart
  - Coronary artery disease
  - Familial /Genetic types of heart disease
    - Idiopathic dilated cardiomyopathy
  - Acquired
    - Periparatum cardiomyopathy
    - Infectious

- Medical History
  - Co-morbid factors that can influence pregnancy outcomes
    - Hypertension
    - Hypercholesteremia
    - Diabetes
    - Hepatitis B,C
    - Renal function (proteinuria)
  - At time of desired pregnancy
    - Age
    - Obesity ( BMI ≥ 35kg/m2)
    - CV and pulmonary status

# Key Components of Preconception Counseling Pregnancy Risk Profile

- Medication
- May be continued (benefits out way risks)
  - Calcineurin inhibitors (cycclosporin and tacrolimus)
  - Glucocoricoids (prednisone and Methyloprednisonole)

Must be stopped prior to conception
  - Sirolimus
  - Mycophenolate mofetil (MMF)
  - Others:
    - Statins
    - ACE inhibitors/Angiotensin receptor blocker
    - Warfarin

- Gynecologic History
  - Menarche
    - Normal : Mean 12 yrs
    - After CTX
  - Menstrual cycles since TX
    - Regular 28-30 day cycle
    - Irregular
    - Amenorrhea
  - Gyn problems
    - Polycystic ovarian disease
  - Pregnancy history
    - Pre and post CTX (LB, SAB, TAB)
    - Mother:, peripartum cardiomyopathy, arrhythmias pre-eclampsia PROM
    - Fetus: IUGR, SGA, Demise

# Components of Preconception Counseling Pregnancy Risk Profile

- Social assessment
  - Spousal/family support
    - Married/in stable relationship
    - Family
      - » Parents
      - » Children
  - Access to care :
    - Tertiary center to manage high risk PG
    - Geographically distant patient: means of establishing “shared care”
- Health risk behaviors
  - Smoking, Drugs, Alcohol
  - Non compliance behavior:
    - appointments,
    - medications
    - Use of prescribed contraceptives
  - History of unplanned pregnancies
- Mental health assessment
  - Maturity
    - Why does she want to get pregnant
  - Cognitive deficit
  - Depression/anxiety disorders

# For female/couple contemplating pregnancy

Have couple meet with each member of multidisciplinary team: CTX team , Genetics, MFM and others who have been involved in care of patient e.g. endocrinology, oncology

- Discuss actual and/or potential risks to both mother and fetus
- A summary of the cumulative concerns/ risks is prepared from each team member .
- Need to address long-term survival of CTX patients….while improved, risk of severe rejection resulting progressive decline of health and death

# For female/couple contemplating pregnancy

Based on pregnancy risk profile and meeting with individual team members the CTX team can determine additional risk factors to consider in advising patient/spouse :

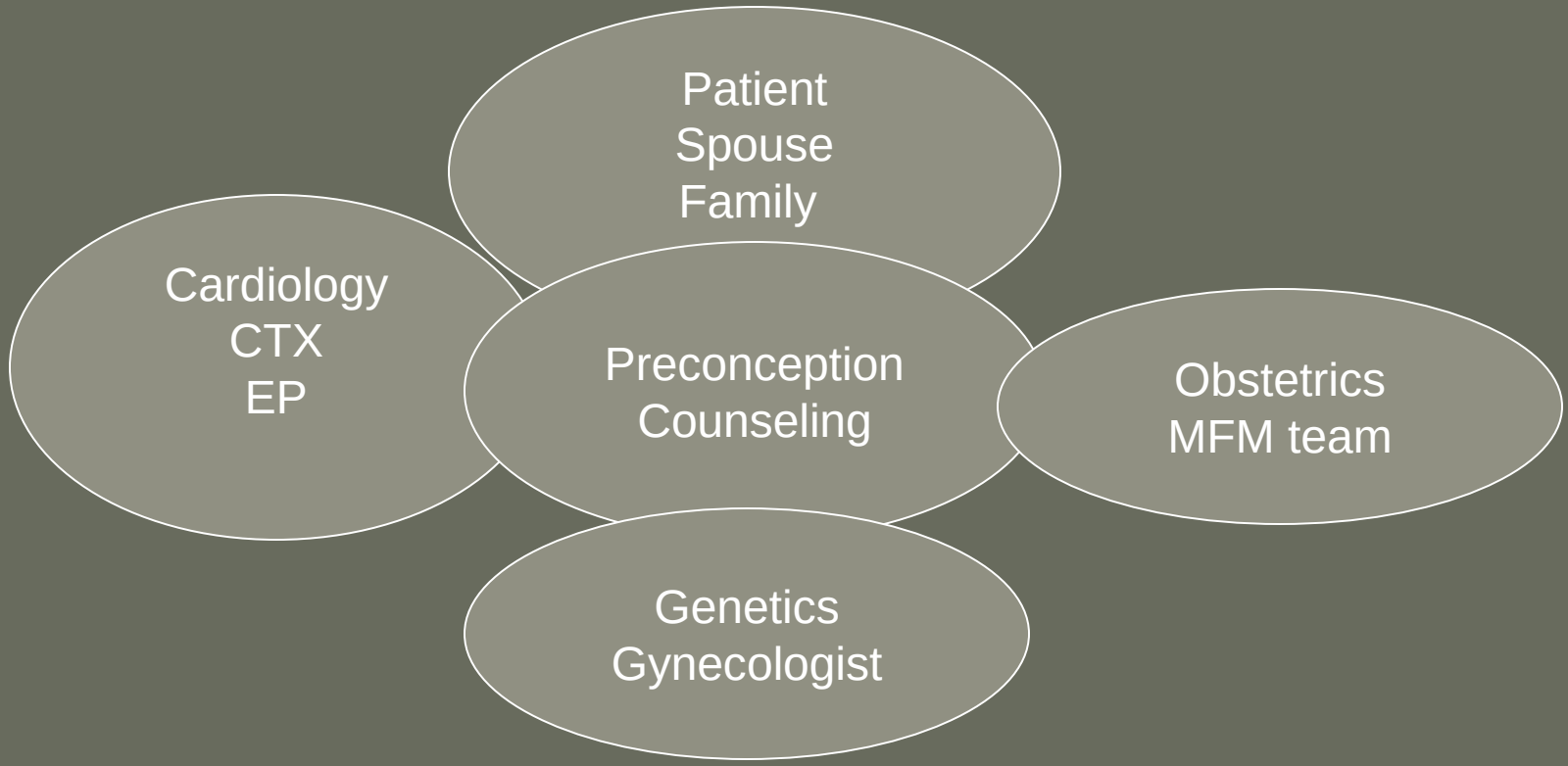
- Whether pregnancy is safe to proceed or is contraindicated;
- Can outline expected pregnancy/delivery plan
  - W here pregnancy care and delivery will take place
  - Discuss drugs that will need to be stopped or changed prior to conception and when
  - Discuss diagnostic baseline studies that may need to be done before proceeding with conception:
  - ECHO, EKG, EST, Coronary angio (possible)
  - Laboratory studies : renal , liver function

# SUMMARY
# A Dedicated Preconception Counseling Program

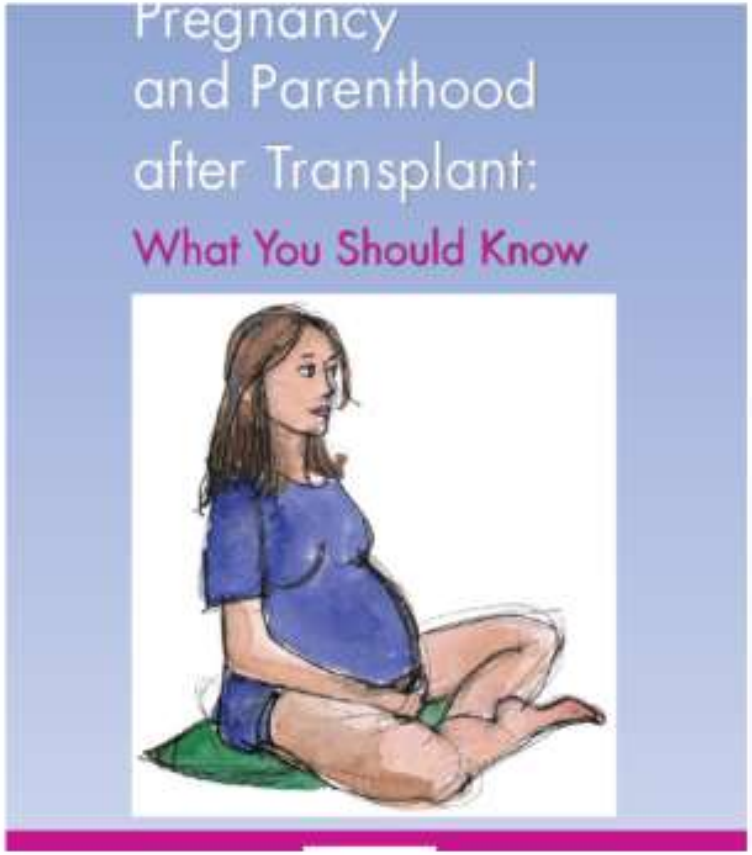
- Prevents unintended pregnancies
- Reduces maternal-fetal morbidity and mortality
- Assist patients to make informed decisions about planning, deferring or avoiding pregnancy
- Allows time to optimize medical condition
- Discussion re: appropriate types of contraception

# A Dedicated Preconception Counseling Program Requires

## Basic Multi-disciplinary team approach



# Patient Education and Counseling



# *To Ensure Happy Families*: