

# Ectopic pregnancy case management

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## Description of condition and intervention

An ectopic pregnancy is a pregnancy outside of the uterine cavity. Ectopic pregnancy is a potentially life-threatening condition. While surgical approaches are the gold-standard treatment, advances in early diagnosis in the 1980s facilitated the introduction of medical therapy with methotrexate. With the routine use of early ultrasound, diagnosis of ectopic pregnancy can be established early, and medical treatment can be administered in most cases. In select cases of early ectopic pregnancy or pregnancy of unknown location, expectant management is an option.” [Source: UpToDate]

We assess the effect and cost of ectopic pregnancy case management intervention in FairChoices: DCP Analytical tool and present details of inputs involved in the analysis in subsequent sections of this evidence brief. We consider three treatment options as part of this intervention.

*Ectopic pregnancy case management*

*Expectant management*

*Methotrexate treatment*

*Surgery for ectopic pregnancy*

**International guidelines**

Organization	Indications/recommendations	Applicability in LIC & Lower MIC settings
World Health Organization 2016	<a href="#">Recommendations on Antenatal Care for a Positive Pregnancy Experience.</a>	Yes

**Intervention attributes**

**Type of interventions & Delivery platform**

Table 1: Type of interventions & delivery platform

Intervention	Type	Delivery platform
Ectopic pregnancy case management Expectant management Methotrexate treatment Surgery for ectopic pregnancy	Curative	First-level Hospital

**Equity**

In addition to considerations like cost-effectiveness and health systems factors, dimensions of equity can be relevant for priority setting. The opportunity for a long and healthy life varies according to the severity of a health condition that individuals might have, so there are inequities in individuals' opportunities for long and healthy lives based on the health conditions they face. Metrics used to estimate the severity of illness at an individual level can be used to help prioritize those with less opportunity for lifetime health. FairChoices: DCP Analytics Tool uses Health adjusted age of death (HAAD), which is a metric that estimates the number of years lived from birth to death, discounting years lived with disability. A high HAAD thus represents a disease less severe in terms of lifetime health loss, while a low HAAD represents a disease that is severe on average, causing early death or a long period of severe disability. It is also possible to estimate the distribution of HAAD across individuals with a health condition. FairChoices shows for each intervention an average HAAD value of the conditions

that are affected by respective interventions that have health effects. Additionally, a plot shows HAAD values for around 290 conditions (Johansson KA et al 2020).

**Time dependence**

High level of urgency. Treatment outcomes highly affected by some days of delay.

**Population in need of interventions**

Table 2: Population in need of interventions

Intervention	Treated population		Affected population		Disease state addressed
	Treated age	Treated fraction	Affected age	Affected fraction	
Ectopic pregnancy case management Expectant management Methotrexate treatment Surgery for ectopic pregnancy	10 to 54 years; pregnant female, incident cases	0.3 0.6 0.1	10 to 54 years; pregnant female	Same as treated fraction	Ectopic pregnancy

**Intervention effect and safety**

Table 3: Effect and safety of interventions for ectopic pregnancy management

Effect of intervention		Certainty of evidence
Mortality (due to condition)  Ectopic pregnancy case management	0.9 (success rate of medical treatment in properly selected women). (Barnhart, Gosman , Ashby, Sammel 2003)	See appendix

**Model assumptions**

Table 4: Summary of model parameters and values used in FairChoices – DCP Analytical Tool

Category	Model parameter	Notes
Intervention	Ectopic pregnancy management	

Cost parameters		
Treated population	See Table 2	Global Burden of Disease Study 2019
Gender		
Age		
Treated fraction		
Effect parameters		
Affected population	Those with condition	
Affected gender	See Table 2	
Affected fraction age		
Affected fraction		
Comparison	No intervention	
Mortality Reduction (RRR)*	0.9 0.9 0.9	We assumed similar efficacy values for the three treatment modalities
Ectopic pregnancy case management		
Expectant management		
Methotrexate treatment		
Surgery for ectopic pregnancy		

## Intervention cost

The cost of surgical management per average case of ectopic pregnancy was estimated to be 25.95 USD in 2007 in Low-income countries (LIC) (Guttmacher report 2014).

**Commented [SA1]:** Guttmacher "Adding it up" report 2014. Appendix A: Table 8

## References

WHO Recommendations on Antenatal Care for a Positive Pregnancy Experience. Geneva: World Health Organization; 2016. PMID: 28079998.

Johansson KA et al 2020: Johansson KA, Coates MM, Økland JM, Tsuchiya A, Bukhman G, Norheim OF, Haaland Ø. Health by disease categories. Distributional Cost-Effectiveness Analysis: Quantifying Health Equity Impacts and Trade-Offs. 2020 Sep 30:105.

Barnhart KT, Gosman G, Ashby R, Sammel M. The medical management of ectopic pregnancy: a meta-analysis comparing "single dose" and "multidose" regimens. *Obstet Gynecol.* 2003;101(4):778. [https://doi.org/10.1016/S0029-7844\(02\)03158-7](https://doi.org/10.1016/S0029-7844(02)03158-7)  
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Table 39, Appendix Guttmacher report 2014: Darroch JE, Sully E, Biddlecom A. Adding it up: investing in contraception and maternal and newborn health, 2017—supplementary tables. New York, NY: The Guttmacher Institute. 2017.

Guttmacher report 2014: Table 8, Appendix Guttmacher report 2014: Darroch JE, Sully E, Biddlecom A. Adding it up: investing in contraception and maternal and newborn health, 2017—supplementary tables. New York, NY: The Guttmacher Institute. 2017.

## Appendix

### Literature Review for effectiveness & safety

This literature search is an example of Level 1 search for intervention inputs taken from DCP3 or generated in an ad hoc manner (e.g., quick google search found one study of cervical cancer screening cost-effectiveness that was used to create an effectiveness parameter for that intervention).

Level of evidence of efficacy studies:

1. low (expert opinions, case series, reports, low-quality case control studies)
2. moderate (high quality case control studies, low quality cohort studies)
3. high (high quality cohort studies, individual RCTs)

EVIDENCE BRIEF

Management of chronic illness  
(DCP4 ID: MNH01-01)

**FairChoices**  
DCP Analytic Tool

4. very high (multiple RCTs, meta-analysis, systematic review, clinical practice guidelines)