

Research Article

## A Meta-Analysis of Postpartum Copper IUD Continuation Rates in Low- and Middle-Income Countries

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### Appendix A: Search Strategy

#### Post-partum

Post-partum OR postpartum OR post-placental OR postplacental OR post-natal OR postnatal OR post-delivery OR puerperal

#### LMIC

Low-income country OR low-income countries OR middle-income country OR middle-income countries OR LMIC OR developing country OR developing countries OR third world country OR third world countries OR low resource setting OR Burundi OR comoros OR Djibouti OR Eritrea OR Ethiopia OR Kenya OR Madagascar OR Malawi OR Mozambique OR Rwanda OR Somalia OR Uganda OR Tanzania OR Zambia OR Zimbabwe OR Cameroon OR Central African Republic OR Chad OR Congo OR Sao Tome Principe OR Lesotho OR Benin OR Burkina Faso OR Cote d'Ivoire OR Ivory Coast OR Gambia OR Ghana OR Guinea OR Guinea-Bissau OR Liberia OR Mali OR Mauritania OR Niger OR Nigeria OR Senegal OR Sierra Leone OR Togo OR Egypt OR Sudan OR Western Sahara OR Korea OR Mongolia OR Kyrgyzstan OR Tajikistan OR Uzbekistan OR Afghanistan OR Bangladesh OR Bhutan OR India OR Nepal OR Pakistan OR Sri Lanka OR Cambodia OR Indonesia OR Lao OR Myanmar OR Philippines

OR Timor-Leste OR Vietnam OR Viet Nam OR Iraq OR Palestin\* OR Yemen OR Haiti OR Honduras OR Nicaragua OR Bolivia OR Melanesia OR Solomon Islands

### **LARC**

Long acting reversible contraceptive\* OR LARC OR IUD OR IUCD OR IUS OR implant\* OR Etonogestrel OR Levonorgestrel OR intrauterine device\* OR intra-uterine device\* OR Mirena OR TCU 380A OR Paragard OR Implanon OR Jadelle OR Nexplanon OR Sino-implant OR Sinoimplant OR intrauterine contraceptive\* OR intra-uterine contraceptive\* OR intrauterine system\* OR intra-uterine system\* OR LNG-IUS OR Copper T OR Kyleena OR Liletta OR Skyla OR PPIUCD

### **Continuation rate**

Continuation OR discontinuation OR discontinue OR continue OR in situ

### **Pubmed search**

(Post-partum OR postpartum OR post-placental OR postplacental OR post-natal OR postnatal OR post-delivery OR puerperal) AND (Low-income country OR low-income countries OR middle-income country OR middle-income countries OR LMIC OR developing country OR developing countries OR third world country OR third world countries OR low resource setting OR Burundi OR comoros OR Djibouti OR Eritrea OR Ethiopia OR Kenya OR Madagascar OR Malawi OR Mozambique OR Rwanda OR Somalia OR Uganda OR Tanzania OR Zambia OR Zimbabwe OR Cameroon OR Central African Republic OR Chad OR Congo OR Sao Tome Principe OR Lesotho OR Benin OR Burkina Faso OR Cote d'Ivoire OR Ivory Coast OR Gambia OR Ghana OR Guinea OR Guinea-Bissau OR Liberia OR Mali OR Mauritania OR Niger OR Nigeria OR Senegal OR Sierra Leone OR Togo OR Egypt OR Sudan OR Western Sahara OR Korea OR Mongolia OR Kyrgyzstan OR Tajikistan OR Uzbekistan OR Afghanistan OR Bangladesh OR Bhutan OR India OR Nepal OR Pakistan OR Sri Lanka OR Cambodia OR Indonesia OR Lao OR Myanmar OR Philippines OR Timor- Leste OR Vietnam OR Viet Nam OR Iraq OR Palestin\* OR Yemen OR Haiti OR Honduras OR Nicaragua OR Bolivia OR Melanesia OR Solomon Islands) AND (Long acting reversible contraceptive\* OR LARC OR IUD OR IUCD OR IUS OR implant\* OR Etonogestrel OR Levonorgestrel OR intrauterine device\* OR intra-uterine device\* OR Mirena OR TCU 380A OR Paragard OR Implanon OR Jadelle OR Nexplanon OR Sino-implant OR Sinoimplant OR intrauterine contraceptive\* OR intra-uterine contraceptive\* OR intrauterine system\* OR intra-uterine system\* OR LNG-IUS OR Copper T OR Kyleena OR Liletta OR Skyla OR PPIUCD) AND (Continuation OR discontinuation OR discontinue OR continue OR in situ)

### **Ovid medline search**

(Post-partum OR postpartum OR post-placental OR postplacental OR post-natal OR postnatal OR post-delivery OR Postpartum Period/ OR puerperal) AND (Low-income country OR low-income countries OR middle-income country OR middle-income countries OR LMIC OR developing country OR developing countries OR third world country OR third world countries OR low resource setting OR Burundi OR comoros OR Djibouti OR Eritrea OR Ethiopia OR Kenya OR Madagascar OR Malawi OR Mozambique OR Rwanda OR Somalia OR Uganda OR

Tanzania OR Zambia OR Zimbabwe OR Cameroon OR Central African Republic OR Chad OR Congo OR Sao Tome Principe OR Lesotho OR Benin OR Burkina Faso OR Cote d'Ivoire OR Ivory Coast OR Gambia OR Ghana OR Guinea OR Guinea-Bissau OR Liberia OR Mali OR Mauritania OR Niger OR Nigeria OR Senegal OR Sierra Leone OR Togo OR Egypt OR Sudan OR Western Sahara OR Korea OR Mongolia OR Kyrgyzstan OR Tajikistan OR Uzbekistan OR Afghanistan OR Bangladesh OR Bhutan OR India OR Nepal OR Pakistan OR Sri Lanka OR Cambodia OR Indonesia OR Lao OR Myanmar OR Philippines OR Timor-Leste OR Vietnam OR Viet Nam OR Iraq OR Palestin\* OR Yemen OR Haiti OR Honduras OR Nicaragua OR Bolivia OR Melanesia OR Solomon Islands OR egypt/ or africa, central/ or africa, eastern/ or africa, southern/ or africa, western/ or haiti/ or honduras/ or nicaragua/ or bolivia/ or kyrgyzstan/ or tajikistan/ or uzbekistan/ or cambodia/ or timor-leste/ or indonesia/ or laos/ or myanmar/ or philippines/ or vietnam/ or bangladesh/ or bhutan/ or india/ or afghanistan/ or iraq/ or yemen/ or nepal/ or pakistan/ or sri lanka/ or "democratic people's republic of korea"/ or mongolia/) AND (Long acting reversible contraceptive\* OR LARC OR IUD OR IUCD OR IUS OR implant\* OR Etonogestrel OR Levonorgestrel OR intrauterine device\* OR intra-uterine device\* OR Mirena OR TCU 380A OR Paragard OR Implanon OR Jadelle OR Nexplanon OR Sino-implant OR Sinoimplant OR intrauterine contraceptive\* OR intra-uterine contraceptive\* OR intrauterine system\* OR intra-uterine system\* OR LNG-IUS OR Copper T OR Kyleena OR Liletta OR Skyla OR Levonorgestrel/ OR exp Intrauterine Devices/ OR PPIUCD) AND (Continuation OR discontinuation OR discontinue OR continue OR in situ).

#### **Embase search**

(Post-partum OR postpartum OR post-placental OR postplacental OR post-natal OR postnatal OR post-delivery OR puerperal OR 'puerperium'/de) AND ('Low-income country' OR 'low-income countries' OR 'middle-income country' OR 'middle-income countries' OR LMIC OR 'developing country' OR 'developing countries' OR 'third world country' OR 'third world countries' OR 'low resource setting' OR Burundi OR comoros OR Djibouti OR Eritrea OR Ethiopia OR Kenya OR Madagascar OR Malawi OR Mozambique OR Rwanda OR Somalia OR Uganda OR Tanzania OR Zambia OR Zimbabwe OR Cameroon OR 'Central African Republic' OR Chad OR Congo OR 'Sao Tome Principe' OR Lesotho OR Benin OR 'Burkina Faso' OR 'Cote d'Ivoire' OR 'Ivory Coast' OR Gambia OR Ghana OR Guinea OR Guinea-Bissau OR Liberia OR Mali OR Mauritania OR Niger OR Nigeria OR Senegal OR 'Sierra Leone' OR Togo OR Egypt OR Sudan OR 'Western Sahara' OR Korea OR Mongolia OR Kyrgyzstan OR Tajikistan OR Uzbekistan OR Afghanistan OR Bangladesh OR Bhutan OR India OR Nepal OR Pakistan OR 'Sri Lanka' OR Cambodia OR Indonesia OR Lao OR Myanmar OR Philippines OR Timor-Leste OR Vietnam OR 'Viet Nam' OR Iraq OR Palestin\* OR Yemen OR Haiti OR Honduras OR Nicaragua OR Bolivia OR Melanesia OR 'Solomon Islands' OR 'low income country'/exp OR 'developing country'/exp OR 'middle income country'/exp OR 'Africa south of the Sahara'/exp OR 'Egypt'/exp OR 'Mauritania'/exp) AND ('Long acting reversible contraceptive' OR 'Long acting reversible contraceptives' OR LARC OR IUD OR IUCD OR IUS OR implant\* OR Etonogestrel OR Levonorgestrel OR 'intrauterine device' OR 'intra-uterine device' OR 'intrauterine devices' OR 'intra-uterine devices' OR Mirena OR 'TCU 380A' OR Paragard OR Implanon OR Jadelle OR Nexplanon OR Sino-implant OR Sinoimplant OR 'intrauterine contraceptive' OR 'intra-uterine contraceptive' OR 'intrauterine system' OR 'intra-uterine system' OR 'intrauterine contraceptives' OR 'intra-uterine contraceptives' OR 'intrauterine systems' OR 'intra-uterine systems' OR LNG-IUS OR 'Copper T' OR Kyleena OR Liletta OR Skyla OR PPIUCD OR 'intrauterine

contraceptive device'/exp OR 'progestin implant'/exp) AND (Continuation OR discontinuation OR discontinue OR continue OR 'in situ')

### **Web of science search**

(Post-partum OR postpartum OR post-placental OR postplacental OR post-natal OR postnatal OR post-delivery OR puerperal) AND ("Low-income country" OR "low-income countries" OR "middle-income country" OR "middle-income countries" OR LMIC OR "developing country" OR "developing countries" OR "third world country" OR "third world countries" OR "low resource setting" OR Burundi OR comoros OR Djibouti OR Eritrea OR Ethiopia OR Kenya OR Madagascar OR Malawi OR Mozambique OR Rwanda OR Somalia OR Uganda OR Tanzania OR Zambia OR Zimbabwe OR Cameroon OR "Central African Republic" OR Chad OR Congo OR "Sao Tome Principe" OR Lesotho OR Benin OR "Burkina Faso" OR "Cote d'Ivoire" OR "Ivory Coast" OR Gambia OR Ghana OR Guinea OR Guinea-Bissau OR Liberia OR Mali OR Mauritania OR Niger OR Nigeria OR Senegal OR "Sierra Leone" OR Togo OR Egypt OR Sudan OR "Western Sahara" OR Korea OR Mongolia OR Kyrgyzstan OR Tajikistan OR Uzbekistan OR Afghanistan OR Bangladesh OR Bhutan OR India OR Nepal OR Pakistan OR "Sri Lanka" OR Cambodia OR Indonesia OR Lao OR Myanmar OR Philippines OR Timor-Leste OR Vietnam OR "Viet Nam" OR Iraq OR Palestin\* OR Yemen OR Haiti OR Honduras OR Nicaragua OR Bolivia OR Melanesia OR "Solomon Islands") AND ("Long acting reversible contraceptive" OR "Long acting reversible contraceptives" OR LARC OR IUD OR IUCD OR IUS OR implant\* OR Etonogestrel OR Levonorgestrel OR "intrauterine device" OR "intra-uterine device" OR "intrauterine devices" OR "intra-uterine devices" OR Mirena OR "TCU 380A" OR Paragard OR Implanon OR Jadelle OR Nexplanon OR Sino-implant OR Sinoimplant OR "intrauterine contraceptive" OR "intra-uterine contraceptive" OR "intrauterine system" OR "intra-uterine system" OR "intrauterine contraceptives" OR "intra-uterine contraceptives" OR "intrauterine systems" OR "intra-uterine systems" OR LNG-IUS OR "Copper T" OR Kyleena OR Liletta OR Skyla OR PPIUCD) AND (Continuation OR discontinuation OR discontinue OR continue OR "in situ")

### **Google scholar search**

Post-partum|postpartum|post-placental|postplacental|Burundi|comoros|Djibouti|Eritrea|Ethiopia|Kenya|Madagascar|Malawi|Mozambique|Rwanda|Somalia|Uganda|Tanzania|Zambia|Zimbabwe|Cameroon|"Central African Republic"|Chad|Congo|"Sao Tome Principe"|Lesotho|Benin|"BurkinaFaso"|"CotedIvoire"|"Ivory Coast"|Gambia|Ghana|Guinea|Guinea-Bissau|Liberia|Mali|Mauritania|Niger|Nigeria|Senegal|"Sierra Leone"|"Togo|Egypt|Sudan|"Western Sahara"|Korea|Mongolia|Kyrgyzstan|Tajikistan|Uzbekistan|Afghanistan|Bangladesh|Bhutan|India|Nepal|Pakistan|"Sri Lanka"|Cambodia|Indonesia|Lao|Myanmar|Philippines|Timor-Leste|Vietnam|"Viet Nam"|Iraq|Palestine|Palestinian|Yemen|Haiti|Honduras|Nicaragua|Bolivia|Melanesia|"Solomon Islands" "Long acting reversible contraceptive"|"Long acting reversible contraceptives"|LARC|IUD|IUCD|IUS|implant|implants|"intrauterine device"|"intra-uterine device"|"intrauterine devices"|"intra-uterine devices"|"intrauterine contraceptive"|"intra-uterine contraceptive"|"intrauterine system"|"intra-uterine system"|"intrauterine contraceptives"|"intra-uterine contraceptives"|"intrauterine systems"|"intra-uterine systems" Continuation|discontinuation|discontinue|continue|"in situ"Post-partum| postpartum| post-placental|postplacental Burundi|comoros|Djibouti "Long acting reversible contraceptive"|LARC|IUD| implant|"intrauterine device"|"intra-uterine device" Continuation|discontinuation|discontinue|continue

### **Cochrane search**

(Post-partum OR postpartum OR post-placental OR postplacental OR post-natal OR postnatal OR post- delivery OR puerperal) AND ("Low-income country" OR "low-income countries" OR "middle-income country" OR "middle-income countries" OR LMIC OR "developing country" OR "developing countries" OR "third world country" OR "third world countries" OR "low resource setting" OR Burundi OR comoros OR Djibouti OR Eritrea OR Ethiopia OR Kenya OR Madagascar OR Malawi OR Mozambique OR Rwanda OR Somalia OR Uganda OR Tanzania OR Zambia OR Zimbabwe OR Cameroon OR "Central African Republic" OR Chad OR Congo OR "Sao Tome Principe" OR Lesotho OR Benin OR "Burkina Faso" OR "Cote d'Ivoire" OR "Ivory Coast" OR Gambia OR Ghana OR Guinea OR Guinea-Bissau OR Liberia OR Mali OR Mauritania OR Niger OR Nigeria OR Senegal OR "Sierra Leone" OR Togo OR Egypt OR Sudan OR "Western Sahara" OR Korea OR Mongolia OR Kyrgyzstan OR Tajikistan OR Uzbekistan OR Afghanistan OR Bangladesh OR Bhutan OR India OR Nepal OR Pakistan OR "Sri Lanka" OR Cambodia OR Indonesia OR Lao OR Myanmar OR Philippines OR Timor-Leste OR Vietnam OR "Viet Nam" OR Iraq OR Palestin\* OR Yemen OR Haiti OR Honduras OR Nicaragua OR Bolivia OR Melanesia OR "Solomon Islands") AND ("Long acting reversible contraceptive" OR "Long acting reversible contraceptives" OR LARC OR IUD OR IUCD OR IUS OR implant\* OR Etonogestrel OR Levonorgestrel OR "intrauterine device" OR "intra-uterine device" OR "intrauterine devices" OR "intra-uterine devices" OR Mirena OR "TCU 380A" OR Paragard OR Implanon OR Jadelle OR Nexplanon OR Sino-implant OR Sinoimplant OR "intrauterine contraceptive" OR "intra-uterine contraceptive" OR "intrauterine system" OR "intra-uterine system" OR "intrauterine contraceptives" OR "intra-uterine contraceptives" OR "intrauterine systems" OR "intra-uterine systems" OR LNG-IUS OR "Copper T" OR Kyleena OR Liletta OR Skyla OR PPIUCD) AND (Continuation OR discontinuation OR discontinue OR continue OR "in situ")

### **Popline search**

("Post partum" OR postpartum OR "post placental" OR postplacental OR "post natal" OR postnatal OR "post delivery" OR puerperal) AND ("Long acting reversible contraceptive" OR "Long acting reversible contraceptives" OR LARC OR IUD OR IUCD OR IUS OR implant\* OR Etonogestrel OR Levonorgestrel OR "intrauterine device" OR "intra uterine device" OR "intrauterine devices" OR "intra uterine devices" OR Mirena OR "TCU 380A" OR Paragard OR Implanon OR Jadelle OR Nexplanon OR "Sino implant" OR Sinoimplant OR "intrauterine contraceptive" OR "intra uterine contraceptive" OR "intrauterine system" OR "intra uterine system" OR "intrauterine contraceptives" OR "intra uterine contraceptives" OR "intrauterine systems" OR "intra uterine systems" OR "LNG IUS" OR "Copper T" OR Kyleena OR Liletta OR Skyla OR PPIUCD) AND (Continuation OR discontinuation OR discontinue OR continue OR "in situ")

### **Global health (CABI) search (<https://www.cabdirect.org/cabdirect/search>)**

(Post-partum OR postpartum OR post-placental OR postplacental OR post-natal OR postnatal OR post- delivery OR puerperal) AND ("Low-income country" OR "low-income countries" OR "middle-income country" OR "middle-income countries" OR LMIC OR "developing country" OR "developing countries" OR "third world country" OR "third world countries" OR "low resource setting" OR Burundi OR comoros OR Djibouti OR Eritrea OR Ethiopia OR Kenya OR Madagascar OR Malawi OR Mozambique OR Rwanda OR Somalia OR Uganda OR Tanzania OR

Zambia OR Zimbabwe OR Cameroon OR "Central African Republic" OR Chad OR Congo OR "Sao Tome Principe" OR Lesotho OR Benin OR "Burkina Faso" OR "Cote d'Ivoire" OR "Ivory Coast" OR Gambia OR Ghana OR Guinea OR Guinea-Bissau OR Liberia OR Mali OR Mauritania OR Niger OR Nigeria OR Senegal OR "Sierra Leone" OR Togo OR Egypt OR Sudan OR "Western Sahara" OR Korea OR Mongolia OR Kyrgyzstan OR Tajikistan OR Uzbekistan OR Afghanistan OR Bangladesh OR Bhutan OR India OR Nepal OR Pakistan OR "Sri Lanka" OR Cambodia OR Indonesia OR Lao OR Myanmar OR Philippines OR Timor-Leste OR Vietnam OR "Viet Nam" OR Iraq OR Palestin\* OR Yemen OR Haiti OR Honduras OR Nicaragua OR Bolivia OR Melanesia OR "Solomon Islands") AND ("Long acting reversible contraceptive" OR "Long acting reversible contraceptives" OR LARC OR IUD OR IUCD OR IUS OR implant\* OR Etonogestrel OR Levonorgestrel OR "intrauterine device" OR "intra-uterine device" OR "intrauterine devices" OR "intra-uterine devices" OR Mirena OR "TCU 380A" OR Paragard OR Implanon OR Jadelle OR Nexplanon OR Sino-implant OR Sinoimplant OR "intrauterine contraceptive" OR "intra-uterine contraceptive" OR "intrauterine system" OR "intra-uterine system" OR "intrauterine contraceptives" OR "intra-uterine contraceptives" OR "intrauterine systems" OR "intra-uterine systems" OR LNG-IUS OR "Copper T" OR Kyleena OR Liletta OR Skyla OR PPIUCD) AND (Continuation OR discontinuation OR discontinue OR continue OR "in situ")

#### **LILACS search**

Post-partum OR postpartum OR post-placental OR postplacental OR post-natal OR postnatal OR post- delivery OR puerperal AND "Low-income country" OR "low-income countries" OR "middle-income country" OR "middle-income countries" OR LMIC OR "developing country" OR "developing countries" OR "third world country" OR "third world countries" OR "low resource setting" OR Burundi OR comoros OR Djibouti OR Eritrea OR Ethiopia OR Kenya OR Madagascar OR Malawi OR Mozambique OR Rwanda OR Somalia OR Uganda OR Tanzania OR Zambia OR Zimbabwe OR Cameroon OR "Central African Republic" OR Chad OR Congo OR "Sao Tome Principe" OR Lesotho OR Benin OR "Burkina Faso" OR "Cote d'Ivoire" OR "Ivory Coast" OR Gambia OR Ghana OR Guinea OR Guinea-Bissau OR Liberia OR Mali OR Mauritania OR Niger OR Nigeria OR Senegal OR "Sierra Leone" OR Togo OR Egypt OR Sudan OR "Western Sahara" OR Korea OR Mongolia OR Kyrgyzstan OR Tajikistan OR Uzbekistan OR Afghanistan OR Bangladesh OR Bhutan OR India OR Nepal OR Pakistan OR "Sri Lanka" OR Cambodia OR Indonesia OR Lao OR Myanmar OR Philippines OR Timor-Leste OR Vietnam OR "Viet Nam" OR Iraq OR Palestin\$ OR Yemen OR Haiti OR Honduras OR Nicaragua OR Bolivia OR Melanesia OR "Solomon Islands" AND "Long acting reversible contraceptive" OR "Long acting reversible contraceptives" OR LARC OR IUD OR IUCD OR IUS OR implant\$ OR Etonogestrel OR Levonorgestrel OR "intrauterine device" OR "intra-uterine device" OR "intrauterine devices" OR "intra-uterine devices" OR Mirena OR "TCU 380A" OR Paragard OR Implanon OR Jadelle OR Nexplanon OR Sino-implant OR Sinoimplant OR "intrauterine contraceptive" OR "intra-uterine contraceptive" OR "intrauterine system" OR "intra-uterine system" OR "intrauterine contraceptives" OR "intra-uterine contraceptives" OR "intrauterine systems" OR "intra-uterine systems" OR LNG-IUS OR "Copper T" OR Kyleena OR Liletta OR Skyla OR PPIUCD AND Continuation OR discontinuation OR discontinue OR continue OR "in situ"

**Appendix B: Inclusion and Exclusion Criteria**

<b>Inclusion Criteria</b>	<b>Exclusion Criteria</b>
Any date Any study design Paragard/TCu380A use Postpartum insertion with 48h of delivery Vaginal or cesarean delivery Data on 6-month continuation rates Study done in one of FP2020 countries*	Non-english manuscript Abstract only**

\*FP2020 countries (ref: <http://www.familyplanning2020.org/entities>)

Afghanistan*	Congo	Haiti	Mali*	Rwanda*	Tanzania*
Bangladesh*	Cote d'Ivoire*	Honduras	Mauritania*	Sao Tome and Principe	Timor-Leste
Benin*	Djibouti	India*	Mongolia	Senegal*	Togo*
Bhutan	DPR Korea	Indonesia*	Mozambique*	Sierra Leone*	Uganda*
Bolivia	DR Congo*	Iraq	Myanmar*	Solomon Islands*	Uzbekistan
Burkina Faso*	Egypt	Kenya*	Nepal*	Somalia*	Viet Nam*
Burundi*	Eritrea	Kyrgyzstan	Nicaragua	South Africa*	Western Sahara
Cambodia	Ethiopia*	Lao PDR*	Niger*	South Sudan	Yemen
Cameroon*	Gambia	Lesotho	Nigeria*	Sri Lanka	Zambia*
CAR	Ghana*	Liberia*	Pakistan*	State of Palestine	Zimbabwe*
Chad	Guinea*	Madagascar*	Papua New Guinea	Sudan	
Comoros	Guinea-Bissau	Malawi*	Philippines*	Tajikistan	

\*\*Authors contacted when possible to request manuscript



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