Expanding access to Primary Health Care for vulnerable populations:

a role for technology and innovation

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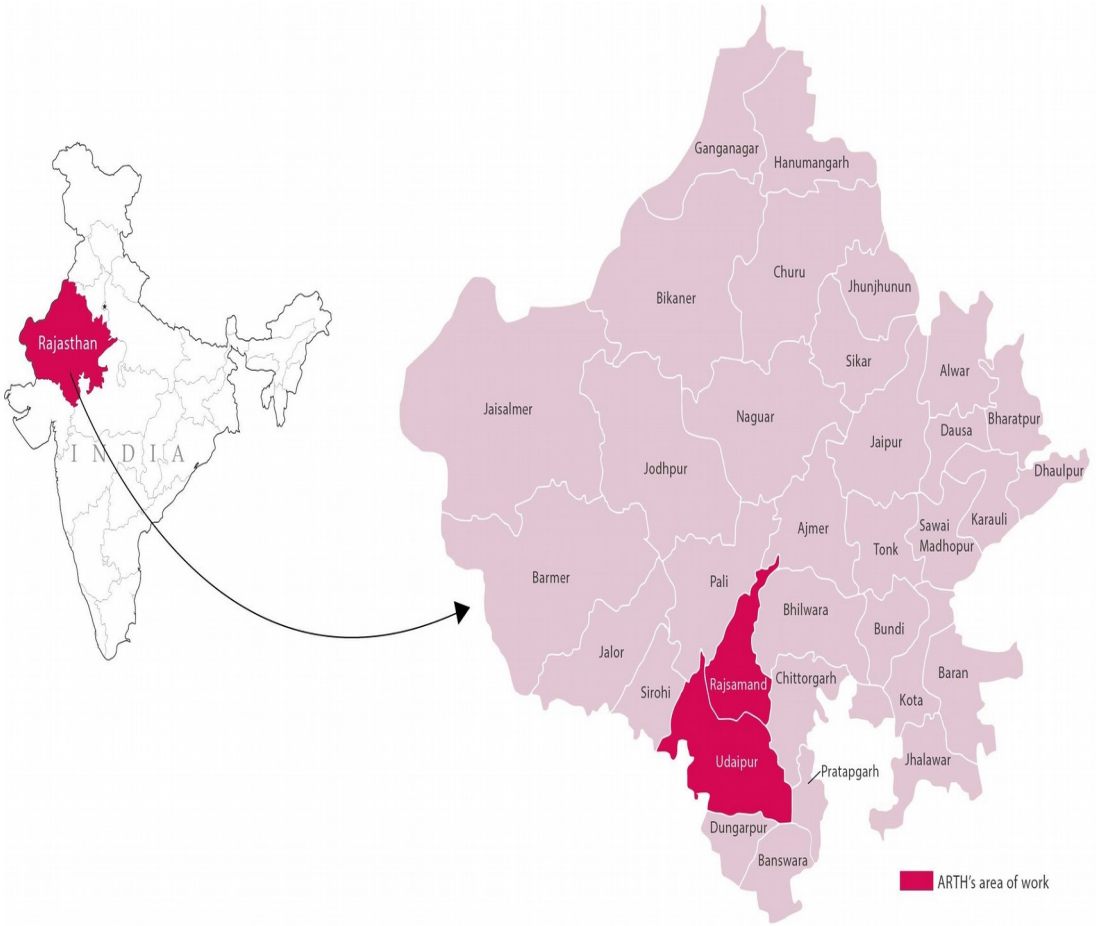
From where does this come?



ARTH (founded 1997)

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Helping communities to access and manage health care according to their needs and capacity, by using research and training initiatives

The context of primary health care in a low resource setting

Access to quality health care is constrained by:

- Scarcity of providers – real as well as virtual
- Low levels of regulation and field supervision
- Informal income from health care provision
- The lack of a paper trail
- Digital illiteracy, unfamiliarity & alienation
- **Over-medicalization of care**

Where access to health care and supervision are poor, providers become more powerful…

- The few available public providers in a remote area can be difficult to regulate – they tend to be irregular with duties and non-compliant with service protocols
- Health managers and community members acknowledge the difficulty of retaining primary care providers in interior areas
- Hence they put up with rent-seeking, poor quality and even rude behaviour – this implies an unequal power relationship between the community and scarce providers
- Even within a health facility team, a few junior providers might bear a disproportionate burden of emergency duties

Even an effective health technology might not be well accepted by providers in such an environment

Enter, the informal health care provider

- Informal providers restore some of this power imbalance by enhancing access at lower cost and by being more sensitive to client preference
- Such primary care practitioners thrive on the demand for fast acting curative care
- They include stand-alone private and moonlighting government providers, with demarcated territories and local political support

Cure-seeking behaviour

- The poor, caught up with the daily burden of survival and working in the unorganized sector, seek care late. They demand quick cure, to be able to resume work rapidly, at minimal cost
- Primary care entrepreneurs address such “cure-seeking” behavior by using shotgun therapy:
  - High dose medication (especially injections and drips)
  - Irrational drug combinations
  - Unnecessary procedures or surgery
- Families meet the sudden high cost of cure by:
  - Taking loans at usurious interest rates (eg. 10% per month)
  - Pawning or distress selling their assets

Over-medicalization: populist medicine?

"Inappropriately excessive use of medical resources for the delivery of health care, often to safeguard unrealistic standards of quality"

- Standards of care are mediated by tertiary care experts from apex institutions, through regulation of technology, providers, facilities, protocols, referral and information-sharing
- Courts rely on the same expert medical opinion in judging violation of standards
- However, over-medicalization significantly reduces access and increases costs, especially of primary care
- Irrational over-medicalization is used to impress patients & families and earn more money, in the private sector
- Where regulation is poor, over-medicalized hospital care coexists with quack cures in rural and slum areas

Jugaad: innovation through improvization

Health innovations for vulnerable populations

Merely introducing new technology on the basis of hospital experience, will not do the trick – it should form part of a well designed public health intervention that recognizes context, especially the political economy of health care

Can the innovation be deployed in a manner that

- Requires less qualified, appropriately trained care providers?
- Allows for greater self-use and user control?
- Simplifies care and follow up?
- Increases provider accountability?
- Improves quality of care?
- Facilitates easy documentation?
- Reduces the cost and distance to care?
- Protects privacy & confidentiality?

Demedicalizing primary care:
a strategy to enhance access to health services

“Systematic measures undertaken by a health system, to optimize the use of scarce or expensive medical resources"

- The regulatory environment, technology, human resource requirements and management systems need to be altered in a calibrated and coordinated manner to enhance access without compromising quality
- This should be carried out in a manner that preserves or enhances equity, patient rights and provider accountability

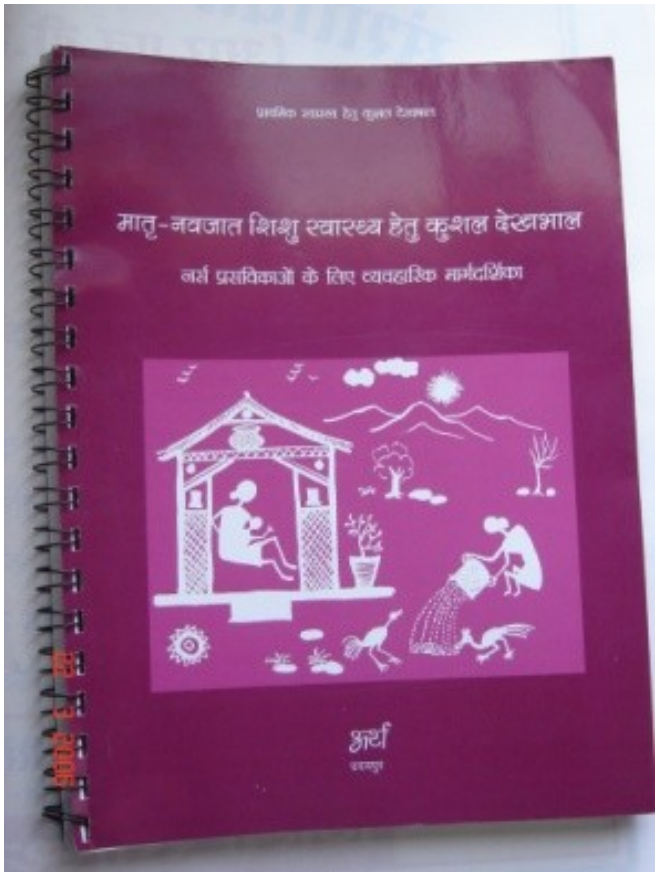
De-medicalization: less qualified care providers

- Chloroquine and other anti-malarials (prescription drugs) administered by health workers and paramedics
- Health workers detect childhood pneumonia by counting breaths per minute and looking for chest indrawing
- Governments allows life-saving use of MagSulf, antibiotics and IV fluids by midwives

Need: technology that makes clinical assessment by non-physicians robust and fail safe

De-medicalization: simpler local language protocols

- Screening checklists for detecting cancer or for inserting a Levonorgestrel Intrauterine System (LNG IUS)
- Standard case management – chloroquine for fever in malaria endemic areas, Integrated Management of Neonatal & Childhood Illness (IMNCI) case management guidelines



Need: GUI, alert and action alarm points for health workers

De-medicalization: portability & user friendly packaging

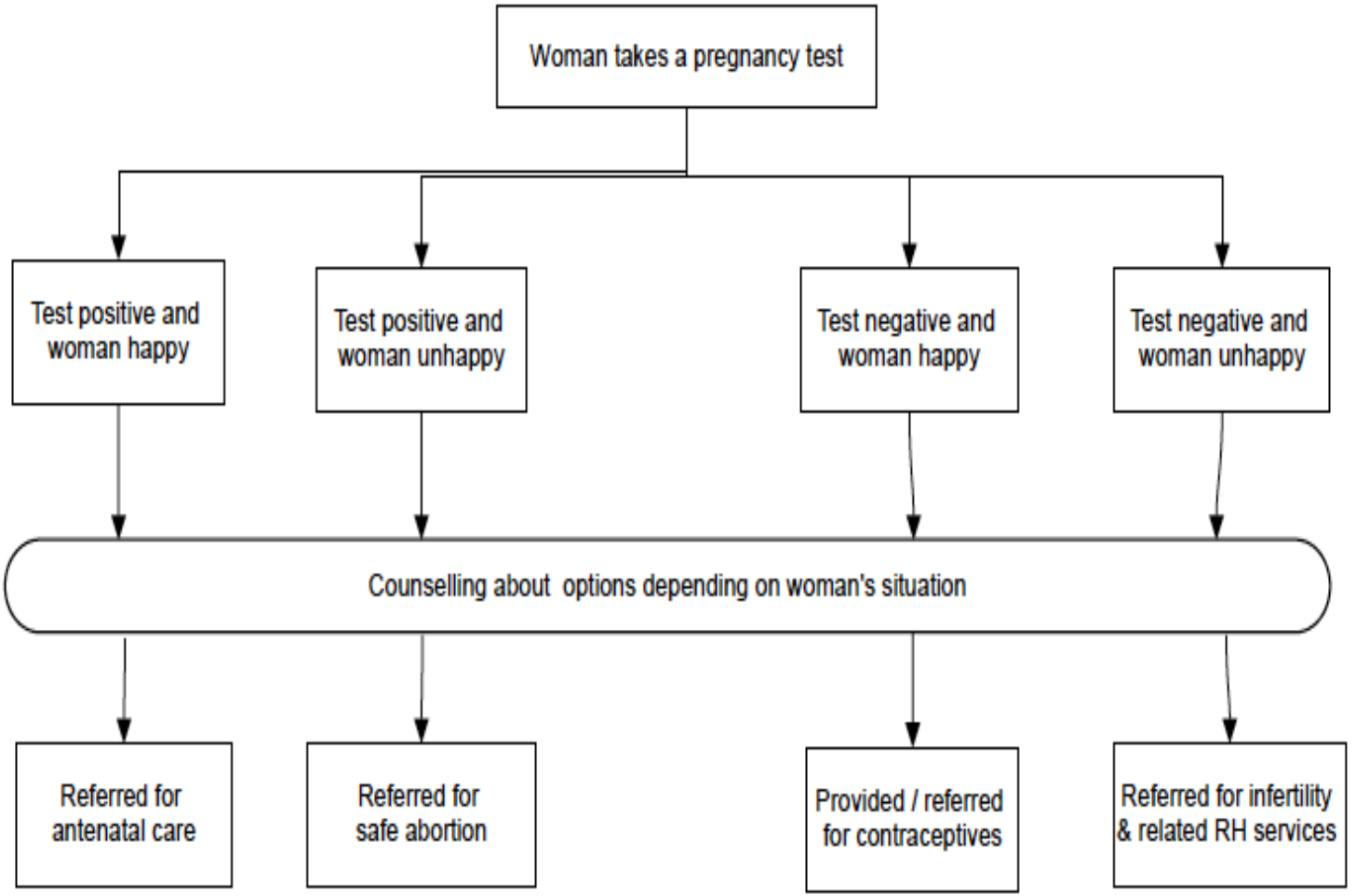
- Blood storage centers in small rural facilities
- Community based immunization using portable cold-chain equipment
- Tuberculosis: from hospitals to domiciliary treatment using combi-pack drug kits

Need: more hand held devices and point of care diagnostics that can be used on field by health workers

De-medicalization: promoting self use

- Non-prescription use of ORS, oral contraceptives and morning after pills
- Community volunteers distribute urine pregnancy kits for self testing in rural Rajasthan

Need: technology that allows users and families to screen, decide and self treat, easily and safely



De-medicalization: facilitating easy referral

- The use of less qualified providers and screening approaches at peripheral levels necessitates robust referral linkages to clinics and hospitals
  - Maternal complications
  - High risk newborns
- Referral criteria are designed to err on the side of safety, hence a certain degree of over-referral is to be expected

Need: Technology that can generate clinical alerts, guides a health worker through referral and informs the hospital

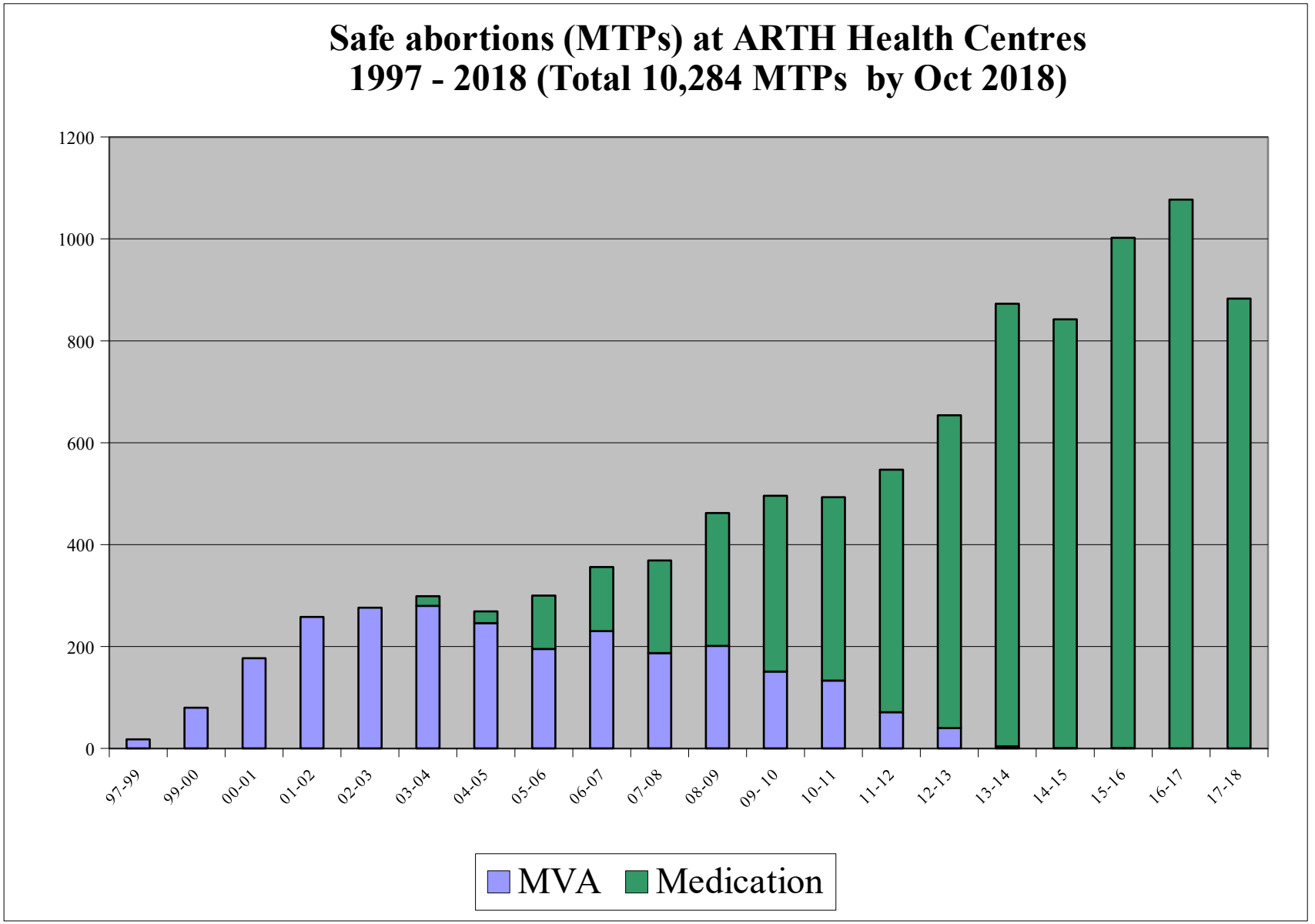
When primary care is deficient, the same health need tends to be addressed by secondary care…

This means reduced access, increased costs and greater risks for patients

Moving from secondary to primary care…

Health need	Over medicalized, secondary care solution	Demedicalized primary care solution
Abortion (MTP) for unwanted pregnancy	D&C or electric vacuum aspiration involving admission, anesthesia	Medication abortion with home use of misoprostol and self assessment of completion
Delivery	Routine labour induction (“programmed labour”), excess cesarean sections (>>15%)	Professional trained midwives manage labour and delivery without augmentation, detect & refer complications
Contraception	Sterilization driven by incentives and targets	Pregnancy self-testing, reversible methods including LARCs (TCu 380A, LNG IUS, implants)
Heavy menstrual bleeding	Hysterectomy	LNG IUS based on screening criteria

Over 10,000 safe abortions at rural health centres by visiting doctors (1997 - 2018)

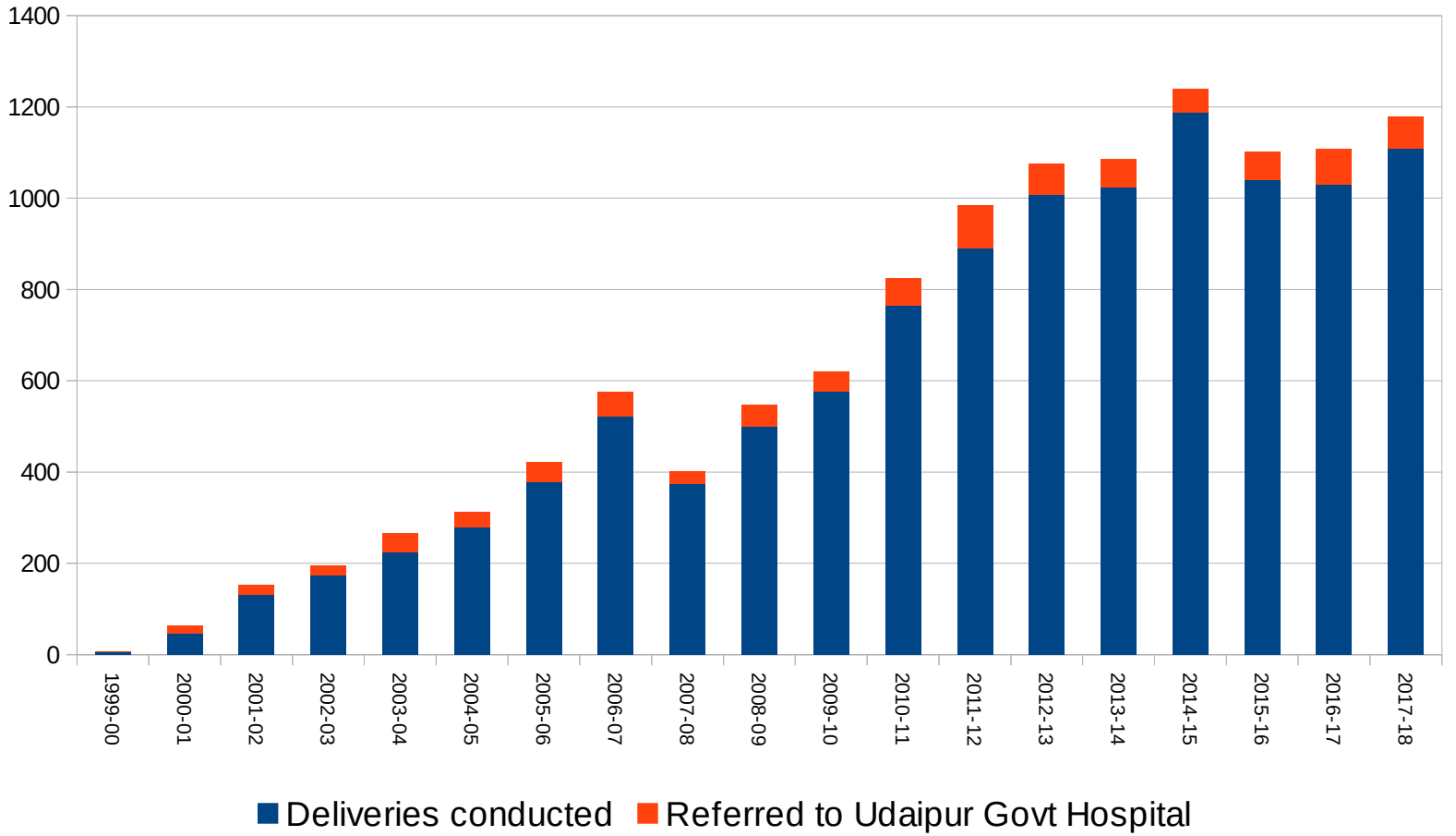


No deaths, 1 blood transfusion after medication abortion

Over 12,500 deliveries managed by nurse-midwives in rural health centres (1999 - 2018)

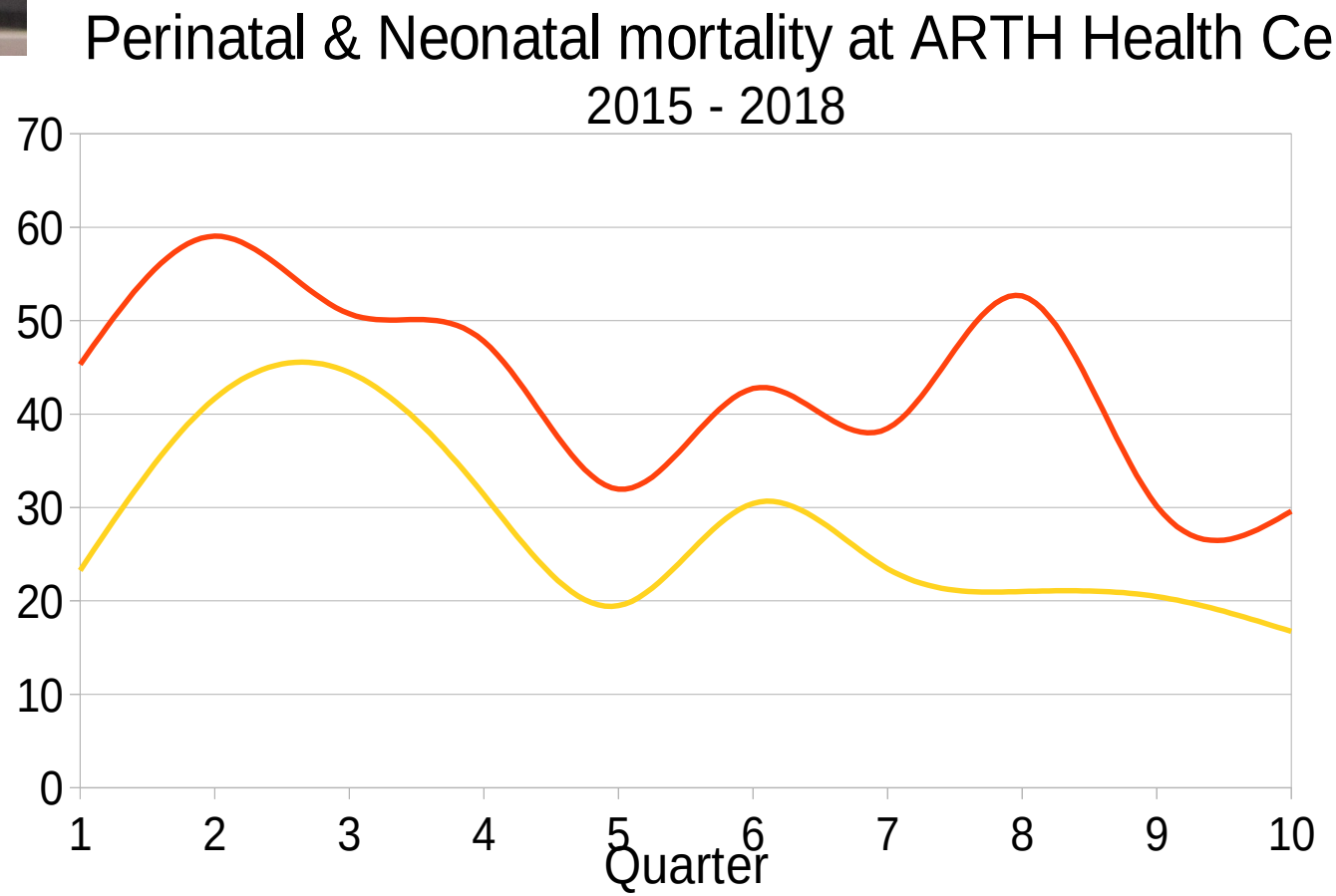
Deliveries attended by nurse-midwives at ARTH Health Centres

Nov 1999 to Mar 2018 (Total 12,650 deliveries by Oct 2018)



895 (7.4%) referrals to Govt Hospital, Udaipur, LSCS ~ 3%, 2 maternal deaths

Rigorous post-natal monitoring, kangaroo care, paladai feeding and secured referrals for very low birth weight newborns



Declines in perinatal and neonatal mortality rates were statistically significant

Reversible contraceptive use by young married women (2015 - 2017)

Current use (% young women)	Rural			Urban			Total		
	Baseline 2015	End line 2017	p value	Baseline 2015	End line 2017	p value	Baseline 2015	End line 2017	p value
Condoms	1.0	2.5	0.000	12.9	27.1	0.000	5.8	12.4	0.000
COCs	4.5	7.2	0.000	7.4	7.5	0.880	5.6	7.3	0.001
Copper Ts	0.8	2.1	0.000	4.4	5.4	0.141	2.3	3.4	0.001
DMPA	2.8	3.0	0.694	0.5	0.7	0.479	1.9	2.1	0.458
LNG IUS	0.0	0.4	0.003	0.6	0.5	0.446	0.3	0.4	0.233
Any reversible contraception	8.6	14.8	0.000	25.2	41	0.000	15.4	25.3	0.000
Irreversible contraception (sterilization)	8.6	12.6	0.000	13.0	19.1	0.000	10.5	15.4	0.000

Levonorgestrel IUS for long term contraception and heavy menstrual bleeding (2015 - 18)

- **758 LNG IUS adopted from 2015 to 2018**
- **498 (97%) out of 515 eligible, followed up at 6 months:**
- **87% continuing, 3% expelled, 10% removed by 6 months**

Summing up…

- Primary care innovations using new technology can expand access and improve quality of health care for vulnerable populations, provided technology follows the intervention and not vice-versa
- Equity of access to health care is a political issue; vulnerable populations are politically vulnerable. Hence proposed innovations must recognize how context, turf and incomes matter, and why & how change might be fiercely resisted or undermined
- Demedicalizing primary health care offers a promising approach for improving access and reducing inequity

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