Commentary

Multipurpose Prevention Technologies: A Global Sexual and Reproductive Health Priority

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Background

Despite the complementarity of sexual and reproductive health services (SRH), providers tend to offer them separately, rather than integrating them into a comprehensive plan of care (Boonstra, Barot, & Lusti-Narasimhan, 2014; Brady & Manning, 2013; Lusti-Narasimhan, Collins, & Hopkins, 2014). Integration of sexual and reproductive health is defined as offering patients comprehensive health services that include, but are not limited to HIV, sexually transmitted infections (STI), and family planning (Maharaj & Cleland, 2005). Too often, SRH providers concentrate their efforts on one of the following areas: (a) increasing effective contraceptive use (i.e., uptake of hormonal-based contraception); (b) HIV prevention (i.e., behavioral interventions, preexposure prophylaxis, or treatment as prevention); or (c) the prevention, screening, and treatment of STIs (i.e., syndromic management of STI and partner services). There has been a global push to integrate discrete sexual and reproductive health delivery systems into a single system that simultaneously addresses the prevention of unplanned pregnancies, STI, and HIV infections (Boonstra et al., 2014; Brady & Manning, 2013; Lusti-Narasimhan et al., 2014). The failure to integrate SRH at both the provider and delivery system levels results in missed opportunities to optimize and advance sexual and reproductive public health efforts (Lusti-Narasimhan et al., 2014). These efforts include evidence-based behavioral interventions and the formation of effective systems that respond to the combined SRH needs of those with the greatest health disparities and disease burden.

Multipurpose Prevention Technologies (MPT) represents a promising, yet still evolving, method for advancing the delivery of integrative SRH. MPT products incorporate contraception with preexposure prophylaxis for HIV and STI; they are specifically designed to prevent more than one negative sexual health outcome. While products such as condoms

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Table 1. Multipurpose Prevention Technologies Products

Clinical/ Preclinical Phase	Delivery Method	Products	Prevention Target
Marketed	Male condom	Synthetic (e.g., latex or polyurethane)	Chlamydia, gonorrhea, HIV, HSV, pregnancy
Marketed	Female condom	Reddy Female Condom, Woman's Condom, Pheonurse Polyurethane Female Condom, Natural Sensations Panty Female Condom, Cupid Female Condom	Chlamydia, gonorrhea, HIV, HSV, pregnancy
Stage C1	Topical vaginal gel	MIV-150 + zinc acetate in carrageenan gel (PC-1005)	HIV, HPV, HSV
Stage C1	Topical vaginal gel	Amphora gel	Chlamydia, gonorrhea, pregnancy
Stage C1	Topical vaginal film	mapp66 (mAb) film	HIV, HSV
Stage C1	Topical vaginal film	TDF film	HIV, HSV
Stage C1	Intravaginal ring	TDF IVR	HIV, HSV
Stage C1	Intravaginal ring	TDF + levonorgestrel IVR	HIV, HSV, pregnancy
Stage C1	Vaginal tablet	TDF + FTC vaginal tablet	HIV, HSV
Stage C1	Vaginal tablet	TDF vaginal tablet	HIV, HSV
Stage C1	Intravaginal ring	Dapivirine + levonorgestrel IVR	HIV, pregnancy
Stage P2	Topical vaginal gel	Griffithsin in carrageenan gel (PC-6500)	HIV, HPV, HSV
Stage P2	Topical vaginal gel	VivaGel	HIV, BV, HSV
Stage P2	Intravaginal ring	TDF + IQP-0528	HIV, HSV
Stage P2	Intravaginal ring	Zinc acetate and carrageenan IVR	HIV, HPV, HSV
Stage P2	Intravaginal ring	TDF + acyclovir + ethinyl estradiol + etonogestrel IVR	HIV, HSV, pregnancy
Stage P2	Diaphragm	SILCS (Caya®) diaphragm + MIV-150 and zinc acetate in a carrageenan gel (MZC gel; PC-1005)	HIV, HPV, HSV, pregnancy
Stage P1	Topical vaginal gel	SR-2P gel	HIV, HSV
Stage P1	Topical vaginal gel	Poly-[1,4-phenylene-(1-carboxy) methylene] (PPCM) SAMMA gel	Chlamydia, gonorrhea, HIV, HPV, HSV, pregnancy
Stage P1	Topical vaginal gel	NOV-1003	HIV, HSV, pregnancy
Stage P1	Intravaginal ring	BioRings™ IVR	HIV, pregnancy
Stage P1	Intravaginal ring	Griffithsin IVR (PC-7500)	HIV, HPV, HSV
Stage P1	Pill/capsule/tablet – vaginal	Griffithsin (GRFT) fast dissolve vaginal insert (FDI) (PC-9500)	HIV, HPV, HSV
Stage P1	Pill/capsule/tablet – vaginal	HER102	BV, gonorrhea, pregnancy
Stage P1	Rectal gel	Griffithsin Gel	Chlamydia, HIV, HSV

Note. P1 = preclinical (early); P2 = preclinical (advanced); C1 = clinical phase I; IVR = intravaginal ring; HSV = herpes simplex virus; TDF = tenofovir disoproxil fumarate; FTC = emtricitabine; TDF + FTC = Truvada®; HPV = human papillomavirus; BV = bacterial vaginosis.

have been available for many years, newer products integrate antiretroviral medications with hormonal or barrier contraceptive methods (Holt, Kilbourne-Brook, Stone, Harrison, & Shields, 2010). Many of these products are currently in the testing phase and are expected to enter the market within the next several years (Quaife, Terris-Prestholt, & Vickerman, 2017). Table 1 provides a list of MPT products that are currently approved or in the testing phase, their active ingredients, and delivery mechanisms (MPT Product Development Database, 2017). Toward that end, providers are encouraged to enhance their understanding of evidence-based patient education models that are rooted in strong behavioral decision-making frameworks.

Provider Guidelines for Integration of MPT

Numerous organizations have called for providers to implement extant guidelines aimed at promoting