ARV diversion among HIV-positive MSM: individual and market characteristics

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Background

- Widespread diversion of ARVs has been documented been among vulnerable, indigent patients who are targeted by pill brokers to trade their ARVs for money or drugs.

  Surratt et al. 2013

- Large scale diversion of ARVs has also been documented by law enforcement in at least seven US states.

  Surratt and Kurtz 2013; Dorschner 2005; Flaherty and Gaul 2003; Glasgow 1999; Associated Press 1995

Background

- FDA approval of Truvada for PrEP has the potential to broaden these illicit markets, as the non-prescribed use of ARVs for prevention has been documented among high risk MSM since at least 2004.

  Kellerman SE, et al. 2006; Kurtz et al. 2014

- Non-adherence among diverters and unsupervised ARV use for treatment or PrEP increases risks of treatment/ PrEP failure, drug resistance, and disease transmission.

The RISE Study

Data were drawn from a mixed methods study designed to examine the patterns and predictors of ARV diversion (the unlawful sale and trading of ARV medications) among indigent drug using men and women living with HIV. This presentation focuses on MSM participants.

Study Eligibility

- age 18 or older
- current ARV prescription
- endorsed cocaine, crack or heroin use 12 or more times in the past 90 days
- quota sample of 50% ARV diverters / 50% non-diverters; diverters endorsed diversion in the past 90 days.

Purpose of the Presentation

- We examined demographic, substance use, and sexual behavior differences among MSM who diverted their ARV medications and those who did not divert in the 90 days prior to interview.
- We also investigated street market characteristics.

Measures

- The main instrument was a comprehensive health and social risk assessment using a modified version of the Global Appraisal of Individual Needs.

  Dennis et al. 2002

- Additional items queried ARV prescription, adherence and diversion history.

Demographics (N=147)

Age (median; SD)	45 (8.1) years	
Education (median; SD)	12 (2.4) years	
	N	**%**
Race/Ethnicity		
White	31	21.1
Hispanic or Latino	36	24.5
African American	75	51.0
Other	5	3.4
Income < $1000 / month	105	72.1

ARV Diversion

ARV diverters, compared to non-diverters, did not differ on measures of age, race/ethnicity, or education, but were more likely to report:

- incomes of less than $1000 per month

  82.9% vs. 58.5%, p<.001

- trading sex for money/drugs

  60.8% vs. 36.9%, p=.004

ARV Diversion

As well as:

- higher frequencies of condomless sex
  mean 11.4 vs. 4.1 in past 90 days, p=.002
- DSM-IVR substance dependence
  65.9% vs. 44.6%, p=.010
- lower 90% ARV adherence rate
  43.9% vs. 73.9%, p<.0001

Motivations

Of 147 MSM with ARV prescriptions, 82 (55.8%; quota sample) reported recent diversion.

Reasons included:	N	%
need money for drugs/alcohol	61	74.4
need money for living expenses	19	23.2
to help someone	6	7.3
leftover / extra medications	5	6.1
hopelessness	3	3.7
feels in good health	2	2.4

Products

Medications sold by diverters and prices received:

	N	%	$ per bottle (median)
Truvada	36	43.9	100
Norvir	32	39.0	80
Atripla	31	37.8	100
Reyataz	17	20.7	75
Prezista	14	17.1	100
Epzicom	13	15.9	80
Kaletra	12	14.6	80
Isentress	9	11.0	100
Sustiva	8	9.8	70

Diversion modality

	N	%
Cash sale		
Pill broker	69	84.1
Street drug dealer	34	41.5
Personal use	27	32.9
Pharmacy worker	7	8.5
Pharmacist	5	6.1
Non-cash trade	20	24.4

Discussion

- This is the first apparent study detailing street markets for ARVs supplied by MSM, including products, prices and purchasers.

- Economic vulnerability, characterized by limited incomes, survival sex work, and drug dependence are the primary motivations for HIV-positive MSM to sell or trade their ARVs.

Discussion

- The pricing structure for ARVs in the US – where the medications carry high retail prices but are free for indigent patients – drives illicit supply and demand.
- ARV diversion negatively impacts adherence, increasing the likelihood of onward disease transmission.
- MSM who diverted their medications reported higher levels of condomless sexual behaviors, also increasing transmission risk.

Limitations

- The study recruited a quota sample of ARV diverters and non-diverters, such that the overall magnitude of ARV diversion cannot be estimated.
- Eligibility requirements included frequent cocaine and/or heroin use, limiting generalizability to other HIV-positive MSM.
- Because many sales were to market middlemen, information on the ultimate users of the diverted medications is limited.

Conclusions

- The implications of diversion for treatment failure and disease transmission must inform policy and behavioral supports to TasP / PrEP.
- Enhanced Risk Evaluation and Mitigation Strategies (REMS; US FDA), including bottle labeling, should be considered.
- Post-marketing surveillance strategies to track diversion appear warranted.

Thank you

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