

Discordance in care of common comorbidities in people living with HIV using real world data



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BACKGROUND

As people living with HIV (PLWH) live longer, there may be increased comorbidity prevalence related to their HIV infection or treatment or normal part of aging. Helping PLWH presents an important opportunity for pharmacists as there may be challenges with disease-disease and drug-drug interactions.

OBJECTIVE

- To quantify therapy gaps in diagnosis and medication therapy for common comorbidities and associated risk factors in PLWH.

METHODS

- This retrospective analysis of administrative pharmacy claims data included a random sample of 20,000 patients who filled at least two antiretroviral medications from a national retail pharmacy chain in the study period of January 1, 2021 to December 31, 2021. Data elements included patient demographics, health plan type, fills of antiretrovirals (ARV), antihypertensives, antihyperlipidemics and antidiabetics, as well as patient diagnoses. Assessment data for patient medication usage barriers were collected for those patients who received telephonic services from specialized pharmacists. This research was reviewed and approved by Advarra IRB as exempt (Pro00044844).
- We used Cohen's kappa coefficient to assess agreements between a diagnosis for hypertension, hyperlipidemia or diabetics and medication usage for the corresponding condition. A patient was considered to have a therapy gap if the patient had any of these diagnosed conditions yet did not taken medications for the underlying condition. A patient was considered to have multiple gaps was defined if the patient had more than one underlying condition without corresponding medication usage. Association of factors with occurrences of therapy gaps were assessed using logistic models. All statistics were conducted using SAS 9.4.

RESULTS

Figure 1. Top diagnosed conditions among ARV users

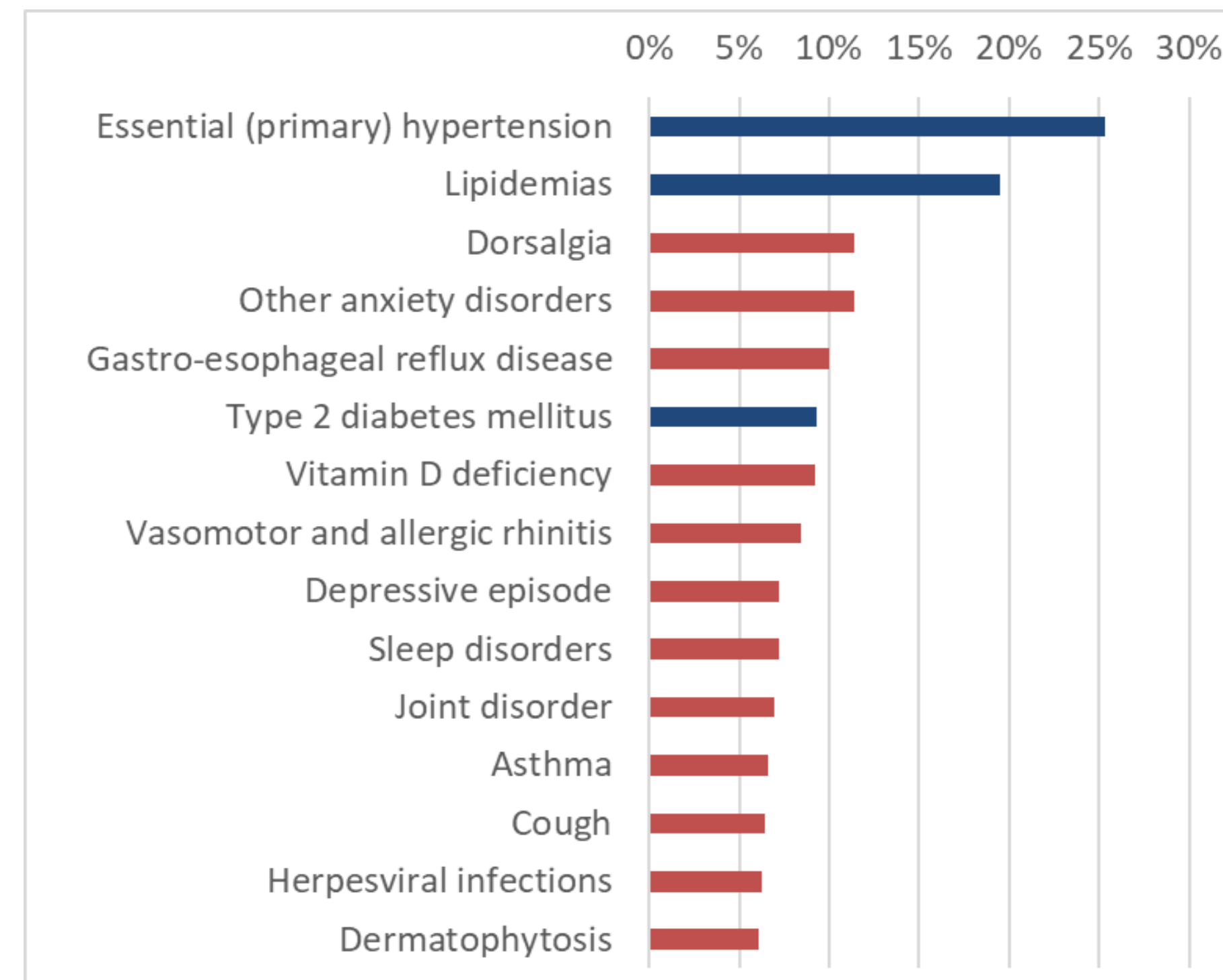


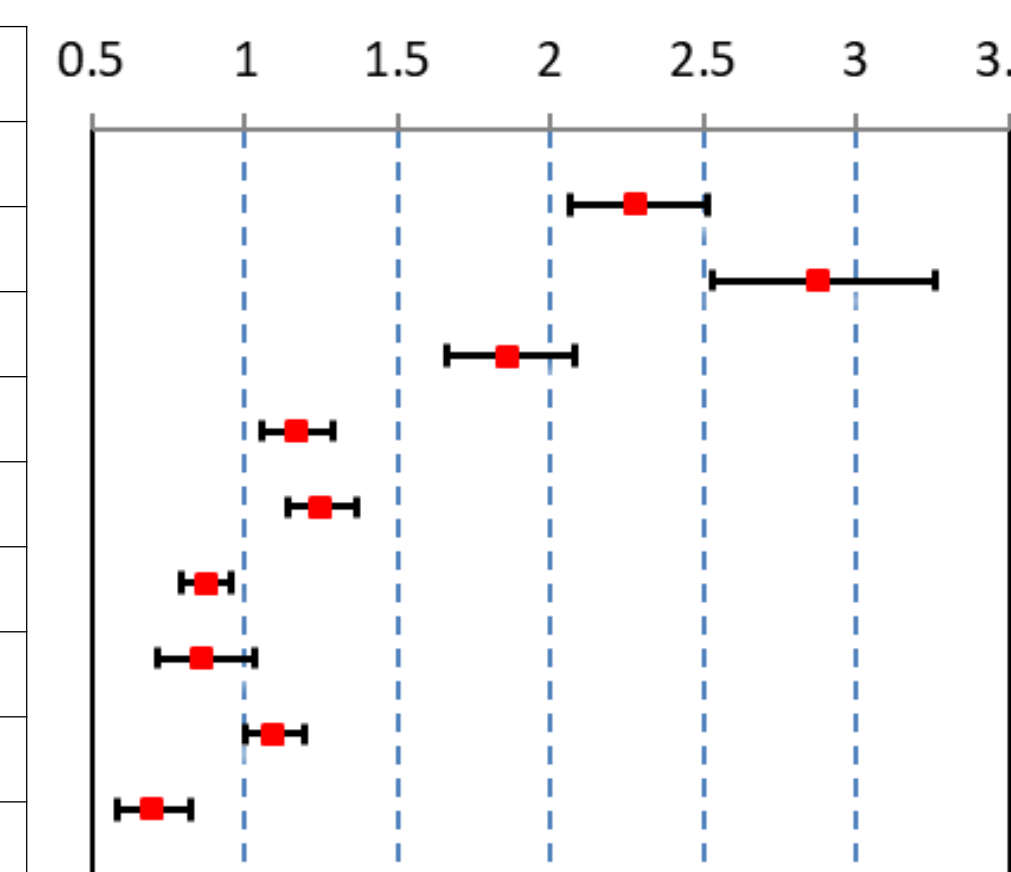
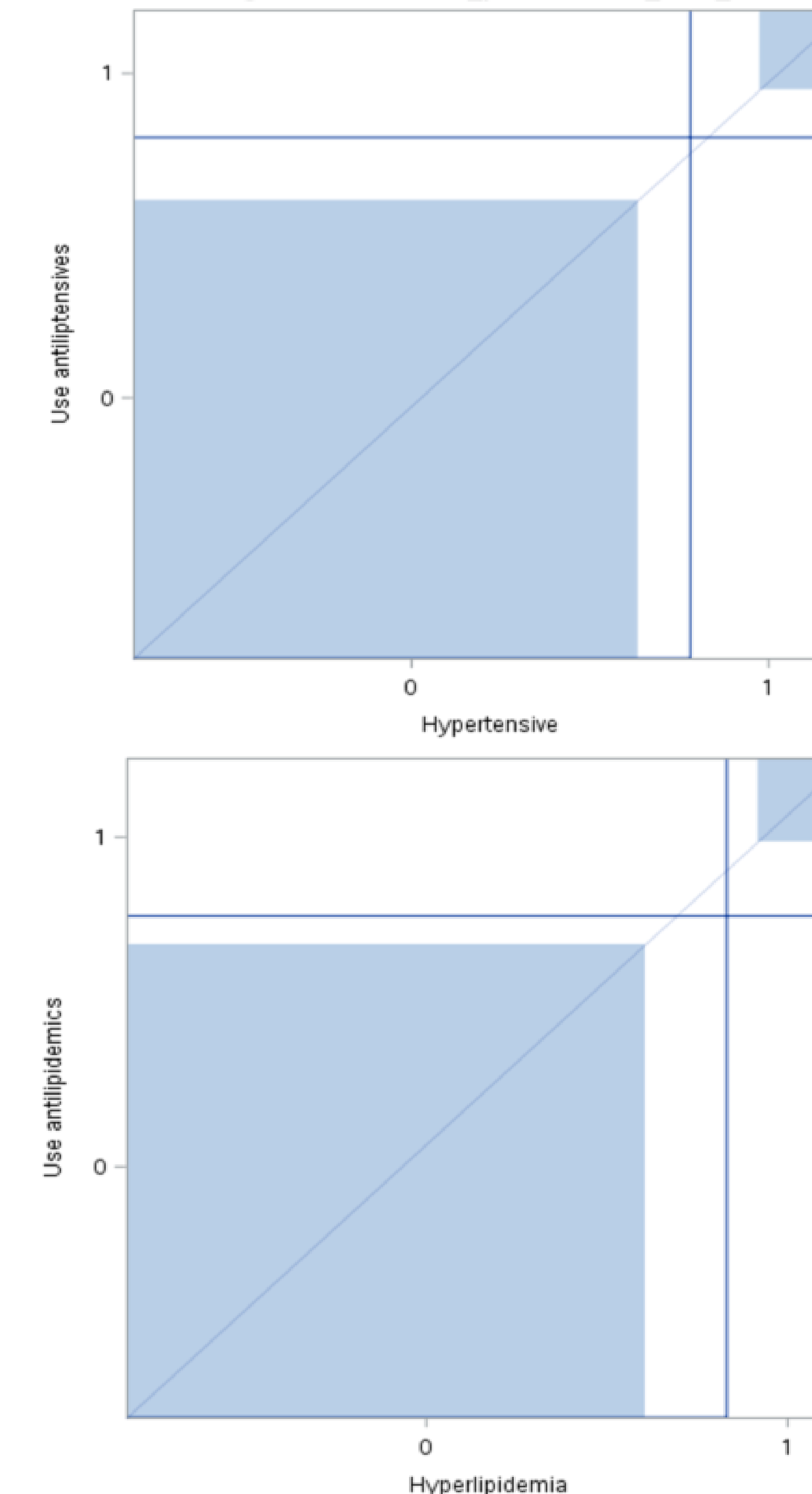
Table 1. Trend of PrEP days supply and patient copay

Diagnosis	Medication taken	Kappa	95% Lower CL	95% Upper CL
Diabetics	Antidiabetics	0.512	0.489	0.534
Hypertension	Antihypertensives	0.483	0.468	0.498
Hyperlipidemia	Antihyperlipidemics	0.525	0.511	0.540

Table 2. Gaps in therapy for PLWH with common chronic conditions: effect of associated factors measured in odd ratio

Description of group comparisons		Estimate	95% Confidence Limits		P-value
Comorbid diagnosis	Hypertension vs. hyperlipidemia	2.27	2.06	2.51	<.0001
	Diabetics vs. hyperlipidemia	2.87	2.53	3.26	<.0001
Age	Age <50 vs. age >=50	1.86	1.66	2.08	<.0001
Gender	Female vs. male	1.17	1.06	1.29	0.0023
Plan type	Government plan vs. commercial	1.25	1.14	1.37	<.0001
Mental health	Anxiety/depression vs. normal	0.87	0.79	0.96	0.0046
Regimen	Regimen issue vs. no regimen issue	0.86	0.71	1.03	0.1035
Forgetfulness	Forgetful vs. normal	1.09	1.00	1.19	0.0468
Therapy engagement	Engaged in treatment vs. not engaged	0.69	0.58	0.82	<.0001

Figure 2. Agreement between diagnosis and medication taken



RESULTS CONTINUED

- The random sample of patients had a mean age of 50.0 years (median=51, IQR (39, 60) and 76.8% were male. On average, each PLWH had 5.8 comorbid conditions (median=4, IQR (1, 8)). The average number of barriers was 1.7. Based on diagnosis, 23.4% had hypertension, 22.6% had hyperlipidemia and 15.2% had Type 2 diabetes. Agreement between diagnosis and medication usage for the full cohort, Kappa statistics were 0.51, 0.48 and 0.52 for hypertension, hyperlipidemia, and diabetes, respectively.
- Percent of antiretroviral users who had common chronic conditions and who were not taking corresponding therapies were 44.0%, 25.1%, and 49.4% for hypertension, hyperlipidemia, and diabetes, correspondingly. Overall, 38.1% of PLWH were diagnosed with at least one chronic condition but without evidence of medication for that condition.
- Higher odds in gap in therapies were significantly associated with those patient with governmental plan (OR=1.14, CI [1.08 – 1.19]), younger (age <50, 1.36 [1.28 - 1.43]), being forgetful (1.05 [1.00 – 1.11]), not as engaged in medication treatment (1.26 [1.13 – 1.40]).

DISCUSSIONS

- As PLWH age, they face increased risk of comorbidities. Such risks are influenced by non-modifiable risks such as age and modifiable risks such as plan coverage and patient medication usage barriers.
- In our cohort, many patients with common chronic conditions were not taking medications for their condition. In part, such discordance is attributable to the overall lack of healthcare interoperability and health data exchange facing the healthcare industry as a whole. A potential limitation to keep in mind when viewing these results is that a small proportion of patients may fill medications in other pharmacies.

CONCLUSIONS

- Ongoing capture of patient medication barriers in combination with diagnosis data helps clinicians to understand patient needs.
- Pharmacists at the forefront of healthcare serving PLWH can offer personalized clinical services beyond dispensing of prescribed medications.