



# Equity Analysis: World Health Partners Telemedicine Clients, 2012-2013

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The economic status of an individual or family often has a large impact on health<sup>1</sup>. Defining economic status allows for better understanding of health issues specific to the poor, as well as those specific to the wealthy (i.e. increased risk of infection, unequal access to care, etc.). However, in countries where either income and expenditure information is not readily available, or in areas where overall wealth is defined more in terms of goods and possessions than monetary income, collecting equity data is a useful and accurate proxy<sup>2</sup>.

Understanding the economic status of clients allows organizations, particularly those utilizing a fee-for-service model, to understand the effect of wealth on health outcomes as well as measure the extent to which health care services are reaching low-income families. World Health Partners (WHP) provides health consultations through franchised telemedicine centers in the rural areas of Uttar Pradesh (UP) and Bihar, India. As part of the health care delivery process, household information is collected from clients to understand the economic characteristics of clients being served and the degree to which those most in need were receiving essential health services from WHP's network providers.

As a member of the Social Franchise Metrics Working Group ([SFMWG](#))<sup>3</sup> WHP participated in selecting the most relevant and feasible metric to measure equity - the proportion of clients receiving franchised services who are within the lowest two national wealth quintiles. The SFMWG tested and selected the wealth indices, the measurement of choice, alongside other equity measurement tools, and rated each based on attributes that would facilitate rapid adoption by social franchise programs. The wealth indices adapted from the Demographic and Health Survey (DHS) measure equity in terms of asset ownership and household characteristics<sup>4</sup>. Data is collected on household ownership of select assets, including items such as a television, bicycle, furniture, mobile phone, and bank account. Data is also collected on quality of living standards, such as housing structure, access to water/electricity, sanitation, and space available (see Appendix 1 for full list of assets).

Being one of the pilot sites, WHP collected equity data of clients for over a year—data was first collected from January 2012-February 2013; after a brief gap, data collection resumed in July 2013, through September 2013. This data was then weighted using Demographic Health Survey (DHS) 2005-2006 data, considered to be nationally representative. Using DHS as the source for questions allows for rigorous analysis by sub-populations, useful comparisons within a country context, and comparisons across countries. The DHS wealth index uses principal components analysis, which places households on a continuous scale of wealth<sup>4</sup>. Based on this scale, clients are divided into 5 quintiles that define overall wealth. Table 1 below shows the breakdown of WHP clients as of September 2013. The comparative analysis (Table 2), shows the breakdown of WHP clients into 5 wealth quintiles and how WHP clients compare with the national population.

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<sup>1</sup> Balarajan, Y., et al. (Feb 5 2011). Health Care and Equity in India. *Lancet*; 377(9764), 505–515. doi:10.1016/S0140-6736(10)61894-6.

<sup>2</sup> Booysen, F., et al. (June 2008). Using an asset index to assess trends in poverty in seven Sub-Saharan African countries. *World Development*; 36(6), 1113-1130.

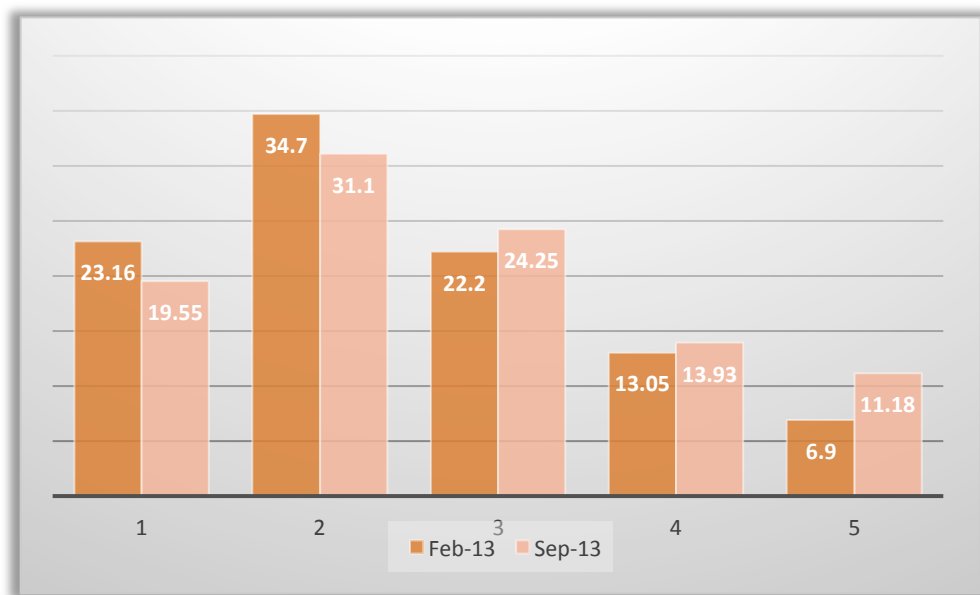
<sup>3</sup> Website: <http://www.sf4health.org/index.php>

<sup>4</sup> Website: <http://www.measuredhs.com/topics/Wealth-Index.cfm>

Table 1: Five wealth quintiles of WHP Clients, as of September 2013:

WHP quintile	Frequency	Percent	Cumulative
1	591	20	20
2	940	31	51
3	733	24	75
4	421	14	89
5	338	11	100
<b>Total</b>	<b>3,023</b>	<b>100</b>	

Figure 1: Comparison of WHP quintiles, Feb 2013 vs. Sept. 2013



Based on comparisons of WHP data in Figure 1 above (data collected through Feb '13 vs. data collected through Sept '13), the breakdown of WHP clients into quintiles has not drastically changed over time.

Figure 2 compares WHP clients' equity distribution to that of the Demographic Health Survey (DHS) respondents' national distribution. A significantly higher percentage of WHP clients (50.64%) fall into the lowest 2 wealth quintiles compared to 28.93% (DHS). Results are statistically significant. Figure 3 shows the distribution of DHS respondents as compared to WHP clients (green).

Figure 2: Comparison of Wealth Quintile: WHP vs. DHS

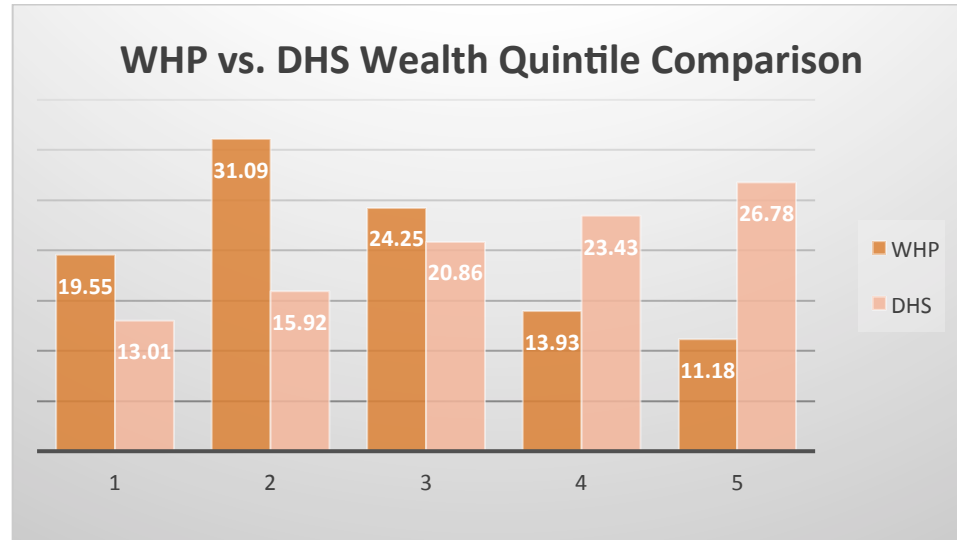
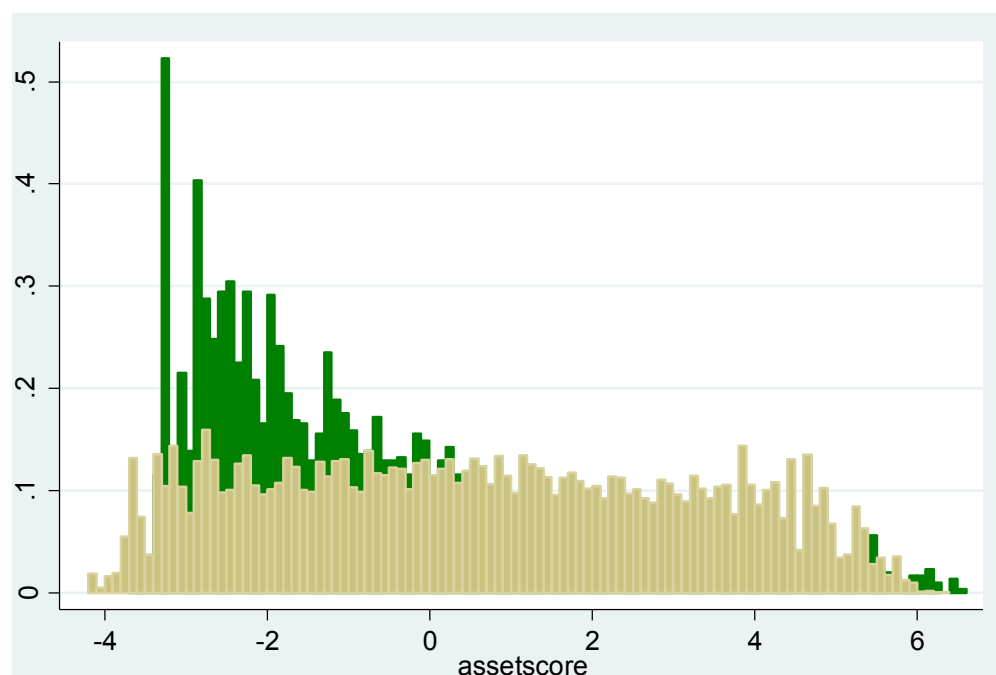


Figure 3: Overlaid distribution of DHS respondents' scores compared to WHP clients (green):



However, a comparison of wealth quintiles looking only at DHS data for Bihar only (n=2,105), shows that the percentage of clients who fall into quintiles 1 and 2 are virtually identical (50.64% for WHP, 49.36% for DHS-Bihar). This would appear to indicate that WHP is serving a representative population in Bihar, one of the poorest states in India.

Table 3: Quintile distribution of WHP clients and DHS clients (Bihar only)

Quintile	DHS-Bihar (%)	WHP (%)
1	22.47	19.55
2	26.89	31.09
3	18.62	24.25
4	19	13.93
5	13.02	11.18

When looking at the breakdown of clients by gender (Table 4), there are nearly equal numbers of males and females represented in the data<sup>5</sup>. By quintile, there are more females in the wealthier quintiles than males, though the number is exactly equal for quintile

Table 4: WHP Client Gender Distribution, July-Sept. 2013

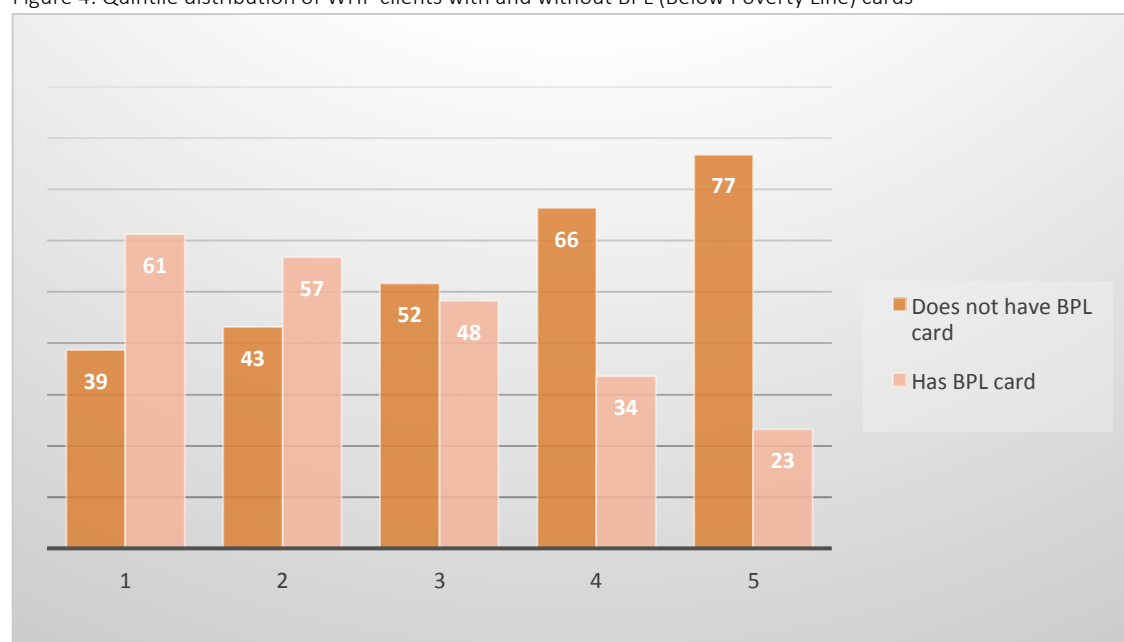
Gender	Q1	Q2	Q3	Q4	Q5	Total
Female	8	12	18	17	5	60
%	50	37.5	46.15	65.38	83.33	50.42
Male	8	20	21	9	1	59
%	50	62.5	53.85	34.62	16.67	49.58
Total	16	32	39	26	6	119
	100	100	100	100	100	100

Pearson chi2(4) = 7.3511 Pr = 0.118

Figure 4 below depicts the quintile breakdown of WHP BPL card clients (n=2,757). Approximately half of WHP clients report having a BPL card (n=1,347); and, approximately half of these 1,347 clients have red BPL cards (meaning they belong in the poorest category). Furthermore, of these 1,347 clients, almost 39% of those who fall into quintile 1 (based on DHS standards) do not have a BPL card, 43% who fall into quintile 2 do not have a BPL card, and 23.2% of those who fall into the wealthiest quintile 5 do have a BPL card. This further highlights discrepancies between actual wealth and BPL card distribution.

<sup>5</sup> Collection of client gender data began in July 2013; therefore, sample size is smaller.

Figure 4: Quintile distribution of WHP clients with and without BPL (Below Poverty Line) cards



Lastly, below is wealth quintile breakdown of WHP clients by district. The district with the highest percentage of quintile 1 clients (out of all clients for that district) is Begusarai, with 35.7% of equity clients from that district belonging to quintile 1; next highest percentages are Khagaria (26%) and Muzaffarpur (24%). For quintile 2, Khagaria has the highest percentage of clients, with 39% of equity clients from that district belonging to quintile 2. Next highest percentages are Begusarai and Bhagalpur (both at approximately 34%).

Table 5: Quintile distribution of WHP clients, by district, through September 2013

District	1	2	3	4	5	Total
Khagaria	84	126	63	21	29	323
%	26	39	20	7	9	100
Begusarai	40	38	16	6	12	112
%	36	34	14	5	11	100
Bhagalpur	39	77	49	34	28	227
%	17	34	22	15	12	100
Bijnour	2	6	3	4	2	17
%	12	35	18	24	12	100
E.Champaran	29	53	59	29	32	202
%	14	26	29	14	16	100
Gopalganj	8	13	25	11	17	74
%	11	18	34	15	23	100
Jehanabad	1	3	6	2	3	15
%	7	20	40	13	20	100

<b>Meerut</b>	0	1	1	1	3	6
<b>%</b>	0	17	17	17	50	100
<b>Muradabad</b>	0	1	0	0	0	1
<b>%</b>	0	100	0	0	0	100
<b>Muzaffarnagar</b>	0	1	2	5	1	9
<b>%</b>	0	11	22	56	11	100
<b>Muzaffarpur</b>	26	30	23	13	17	109
<b>%</b>	24	28	21	12	16	100
<b>Nalanda</b>	1	4	12	5	4	26
<b>%</b>	4	15	46	19	15	100
<b>Neemuch</b>	2	2	2	1	0	7
<b>%</b>	29	29	29	14	0	100
<b>N.Delhi</b>	0	1	0	0	2	3
<b>%</b>	0	33	0	0	67	100
<b>Patna</b>	16	29	18	19	16	98
<b>%</b>	16	30	18	19	16	100
<b>Saharsa</b>	14	15	6	10	12	57
	25	26	11	18	21	100
<b>Samastipur</b>	35	55	39	18	21	168
	21	33	23	11	13	100
<b>Vaishali</b>	11	26	9	10	6	62
	18	42	15	16	10	100
<b>W.Champaran</b>	13	34	38	20	10	115
	11	30	33	17	9	100

In conclusion, half of all WHP clients fall into the lowest 2 wealth quintiles – almost double that of the national average of 28.9%, and on par with DHS Bihar data. This demonstrates WHP successfully reaches clients of lower economic status, likely those most in need of quality healthcare.

## **Appendix 1: Wealth indices, based on asset ownership and household characteristics**

- Electricity
- Electric fan
- Color TV
- Black-and-white TV
- Refrigerator
- Computer
- Cot/Bed
- Mattress
- Chair
- Table
- Mobile phone
- Landline telephone connection
- Watch/Clock
- Radio/Transistor
- Sewing machine
- Motorcycle/Scooter
- Bicycle
- Cement floor
- Finished roofing
- Toilet
- Kitchen (as a separate room)
- Stove
- Pressure cooker
- Separate bedroom
- Water source
- Water pump
- Agricultural land
- Tractor
- Thresher (for grains/grass)
- Animal-drawn cart
- Animals (cows, buffalos, chickens etc)
- Household bank or post office account
- Health insurance
- BPL (Below Poverty Line) card