Pharmaceutical Assistance Foundations in the Financing of Cancer Care

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BACKGROUND

The high cost of prescription medications is a growing problem in US health care. Oncology is well acquainted with this problem, as the prices of new cancer drugs have been increasing exponentially in recent decades¹. As a result of the increasing number of highly-priced chemotherapeutics combined with increasing out-of-pocket costs from higher deductibles and co-insurance, many cancer patients experience “financial toxicity” and may be unable to afford treatment.

In response, many pharmaceutical companies offer various forms of financial assistance. These include copay assistance and copay coupons, direct grants to patients, pricing discounts, and in-kind gifts of drug supplies free of charge. One mechanism by which companies deliver in-kind gifts of drug supplies free of charge is **Pharmaceutical Assistance Programs (PAPs)**. PAPs are industry-administered programs that provide free drugs to patients who demonstrate sufficient financial need. However, PAPs can be time-consuming, opaque, and difficult-to-navigate sources of assistance². The overall scope and impact of PAPs in cancer care financing are unknown.

In this study, we sought to quantify and characterize the role of PAPs at an academically-affiliated, integrated health system in the state of North Carolina.

METHODS

The University of North Carolina Health Care System administers an institutional medication assistance program (MAP). Patients with potentially prohibitive drug costs are identified and referred to the MAP by clinical pharmacists. On referral, MAP specialists work to meet the financial need through copay assistance programs and foundational grants; if these sources are unavailable or insufficient, they submit an application to the relevant PAP for the needed drug.

UNC MAP administrative records – which include all successful PAP applications – were our primary data source, supplemented by manual chart review to ascertain patient insurance type and cancer type. In our analysis we included PAP applications for cancer drugs, defined as anti-neoplastic agents and agents with non-oncologic indications given in the context of a cancer treatment protocol (eg, peg-filgrastim), during 2014.

Totals for UNC cancer patients with each cancer type, and patients treated with each drug, were obtained from codified EMR data. Total values of drugs obtained via PAPs were calculated by multiplying per-unit Average Wholesale Price (AWP) at time of application (contained in UNC MAP records) by quantity obtained. Missing drug quantities (5.2% of applications) were imputed using the amount needed for a single IV infusion or a 1-month pill supply.

Cancer Diagnosis	Number of UNC patients with cancer type (% of total)	Number of patients receiving cancer drugs via PAP	Percent of patients receiving cancer drugs via PAP	Single drug with greatest retail value	Total retail value of drug with greatest retail value (USD)	Total retail value of all drugs obtained via PAP (USD)
CML	93 (1.1)	17	18.3	Imatinib	963,418	2,359,952
Kidney	277 (3.2)	10	3.6	Pazopanib	68,407	774,813
Breast	1865 (21.7)	38	2.0	Pegfilgrastim	401,972	766,824
Leukemia	276 (3.2)	9	3.3	Sorafenib	285,890	752,830
Melanoma	225 (2.6)	10	4.4	Ipilimumab	465,387	707,612
Lung	580 (6.8)	10	4.7	Crizotinib	519,715	672,064
Colorectal	439 (5.1)	20	4.6	Capecitabine	232,920	655,907
GIST	88 (1.0)	6	6.8	Imatinib	324,210	573,493
Lymphoma	719 (8.4)	20	2.8	Lenalidomide	205,542	528,543
ALL	89 (1.0)	8	9.0	Dasatinib	453,637	495,221
Myeloma	398 (4.6)	9	2.3	Lenalidomide	267,766	385,172
Sarcoma	221 (2.6)	8	3.6	Sunitinib	215,357	310,306
Prostate	539 (6.3)	7	1.3	Enzalutamide	224,139	273,739
Liver	173 (2.0)	8	4.6	Sorafenib	227,130	227,130
Head & Neck	308 (3.6)	11	3.6	Pegfilgrastim	107,192	155,893
Biliary	57 (0.7)	3	5.3	Pegfilgrastim	64,315	93,392
Gynecologic	1679 (19.5)	6	0.4	Bevacizumab	11,945	24,021
Pancreatic	104 (1.2)	4	3.8	Gemcitabine	11,408	15,308
Esophageal	61 (0.7)	3	4.9	Trastuzumab	13,381	13,800
Bladder	261 (3.0)	5	1.9	Pegfilgrastim	5,360	8,375
Other	139 (1.6)	3	2.2	Lomustine	3,826	6,694
Overall	8591 (100)	215	2.5	Imatinib	1,556,575	9,801,088

RESULTS

Figure 1 (Left): Insurance type of PAP-utilizing cancer patients. N = 215. Insurance type at the time of the PAP request (or first PAP request, for patients with multiple requests) was determined by manual chart review. Raw patient numbers are shown. Medicare patients were divided into those with and without Part D prescription drug coverage. “Dual eligible” refers to patients with both Medicare and Medicaid coverage.

Figure 2 (Right): Value of drug obtained from PAPs, by type of drug. The total value of drugs obtained via PAPs across all patients, USD. Non-oral drugs include those administered intravenously, subcutaneously, intramuscularly, and intravesicularly. Overall, UNC patients obtained a total value of \$9,801,090 in drugs via PAPs during 2014. Oral drugs constituted \$7,373,741 (75.2%) of this total.

Table 1 (Right): Top-10 cancer drugs by greatest total value obtained from PAPs. Orally-administered cancer drugs were common among the drugs with the highest value obtained from PAPs. The drug with the greatest total value obtained via PAPs was imatinib (\$1,556,575), and the drug with the greatest average per-patient value obtained was crizotinib (\$259,858). Sub-q, subcutaneous; IV, intravenous.

Drug Name and total value rank	Route	Total patients receiving	Patients obtaining drug via PAP	% of patients obtaining drug via PAP	Retail value of drug obtained via PAP (USD)	Avg retail value per patient (USD)
1) Imatinib	Oral	84	12	14.3	1,556,575	129,715
2) Dasatinib	Oral	53	12	22.6	1,449,633	120,803
3) Pegfilgrastim	Sub-q	NA	25	NA	744,987	29,799
4) Pazopanib	Oral	43	11	25.6	734,719	66,793
5) Nilotinib	Oral	37	4	10.8	539,329	134,832
6) Sunitinib	Oral	11	4	36.4	538,983	134,746
7) Crizotinib	Oral	13	2	15.4	519,715	259,858
8) Sorafenib	Oral	46	11	23.9	513,020	46,638
9) Lenalidomide	Oral	188	4	2.1	473,309	118,327
10) Ipilimumab	IV	26	6	23.1	465,387	77,565

Table 2 (Left): Distribution of PAP utilization among different cancer types during 2014. Total numbers for each cancer type at UNC were obtained by searching codified EMR data, and numbers for patients receiving drugs via PAPs were obtained from administrative records from the UNC medication assistance program. For each cancer type, the single drug with the highest total value obtained via PAPs across all patients was identified. Several drugs (such as imatinib, sorafenib, and peg-filgrastim) were the highest-cost drug for several cancer types.

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CONCLUSIONS

While 40% of UNC cancer patients receiving PAP assistance were uninsured, the majority were insured by public or private payers (**Figure 1**). This study provides further evidence that many insured patients are unable to meet the cost-sharing requirements imposed by high-cost cancer drugs.

The majority of drug value obtained via PAPs (\$7,373,741 of \$9,801,090, 75.2%) was for oral rather than intravenous drugs (**Figure 2**). This suggests a particular difficulty for patients in affording prescription cancer drugs.

A total of 215 of 8,591 UNC cancer patients (2.5%) used PAPs to acquire one or more cancer drugs (not shown). Compared to a prior study of an institutional medication assistance program in 2006-2007 which found that 1.1% of cancer patients received PAP assistance³, this suggests that the need for charity drug assistance may be increasing.

A few, high-cost medications constituted the majority of drug value obtained by UNC cancer patients, particularly orally-administered “targeted” drugs. Two drugs alone – imatinib and dasatinib – constituted \$3,006,208 in value, which was 31% of total value across all drugs (**Table 1**). Patients with the cancer types that are most commonly treated with these drugs, such as chronic myeloid leukemia (CML) and kidney cancer, tended to require the most PAP assistance (**Table 2**).

PAPs have opaque application and approval processes and administrative delays can lead to gaps in treatment. Therefore, they are not an ideal mechanism for a significant fraction of cancer patients to rely on in order to obtain standard-of-care treatments. Both improved access and reduced drug prices are required to meet this growing need.

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