Published in final edited form as:

Gynecol Oncol. 2018 July ; 150(1): 3–6. doi:10.1016/j.ygyno.2018.05.012.

Financial toxicity – an overlooked side effect

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Keywords

Financial toxicity; out of pocket cost; gynecologic cancer

The cost of gynecologic cancer therapies

The US is facing a crisis of rising health care costs. The rapid diffusion of expensive medical and pharmaceutical technologies as well as our aging population are strong contributors that are particularly relevant to the field of oncology. Once approved by the Federal Drug Administration (FDA), novel cancer therapeutics such as targeted therapy or immunotherapy, are often introduced to the market at exceptionally high prices. Using Medicare reimbursement rates (converted to 2017 dollars), estimated monthly drug acquisition costs were \$5,747 for bevacizumab, \$12,585 for olaparib, \$9,567 for pembrolizumab, and \$17,542 for olaratumab at the time of each drug's initial FDA approval. In the US, drug manufacturers can not only set market prices for drugs, but they are also shielded from competitive forces by regulatory and patent-related exclusivity [1]. While drug acquisition costs are important from a societal perspective, a more patient-centered measure of the anticipated magnitude and timing of out of pocket (OOP) costs is needed to help patients better manage their finances; however, these costs are complex to estimate and often not discussed with patients.

With the increasing use of maintenance therapy in certain ovarian cancer patient populations, increased attention will need to be given to patient financial considerations. In the upfront setting, bevacizumab may be utilized concurrently with platinum and taxane-based chemotherapy and then continued as maintenance therapy for up to 9-12 months based on published studies [2–3]. In the recurrent setting, poly(ADP-ribose) polymerase (PARP) inhibitors may be prescribed as switch maintenance for patients with platinum sensitive disease or who are positive for homologous repair deficiency or germline and somatic

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All authors have approved the final manuscript.

Conflict of interest statement: Dr. Warner Huh reports personal fees from Antiva, InCellDx, and LiCor outside the scope of the submitted work.

BRCA mutations [4–7]. Treatment regimens that utilize maintenance strategies require a shift in our approach to discussing the potential benefits, toxicities, and associated OOP costs as treatment duration may be prolonged and disease status may be unmeasurable or asymptomatic.

While oral therapies, such as PARP inhibitors, have the benefit of more convenient administration, these drugs can place more cost-sharing pressure on patients compared to intravenous or intraperitoneal infusions that are traditionally provided in health care settings. This is because prescription benefits are separate from other health care benefits. Medicare Part D is the Medicare prescription drug benefit program and has a coverage gap (the “donut hole”). In 2018, this coverage gap begins once a patient reaches \$3,750 in retail prescription drug costs (retail costs are shared by the payor and the patient) and ends when an individual reaches the \$5,000 OOP prescription drug spending threshold (OOP costs paid by the patient only). With the passage of the Patient Protection and Affordable Care Act (ACA) in 2010, individuals receive a “donut hole” discount for generic and brand-name prescription drugs, which has increased annually so that the “donut hole” will be effectively eliminated and individuals will pay no more than 25% cost-sharing for covered prescription drugs by 2020. In addition, many prescription drug benefit programs utilize tiered formularies in which patient cost-sharing escalates depending on whether the drug is generic or based upon price, with expensive oral cancer therapies often falling in the highest tiers. Manufacturer-based financial assistance programs may offer support for these expensive therapies; however, Medicare beneficiaries are typically not eligible and this practice may actually perpetuate higher drug prices over time [8].

Financial strain as a side effect (“toxicity”) of treatment

In this context, financial toxicity is the patient-level impact of cost and is a potential side effect just like any other “toxicity” that can result from treatment. Cancer patients are at increased risk for experiencing financial strain compared to patients without cancer due to accumulated OOP costs, which can include direct medical costs (i.e., co-pays, coinsurance, and medications) and non-medical costs (i.e., transportation, lodging, and childcare) [9]. It is estimated that low-income individuals undergoing cancer treatment spend up to 25% of their annual income on OOP medical expenditures [10]. With over 60% of bankruptcies filed due to medical reasons, cancer patients have a 2.5 times higher risk of filing for bankruptcy compared to non-cancer patients [11–12]. In addition, patients may experience indirect opportunity costs such as changes in employment, loss of wages, or strains on non-medical spending. Financial toxicity can negatively affect patients’ adherence to treatment and has been found to be a risk factor in cancer patients for early mortality [13–14]. Patients may skip doses to make medications last longer, not refill medications, or delay treatments due to cost. Higher levels of financial strain have also been shown to adversely impact quality of life [15].

Universal screening for financial toxicity

The first step toward decreasing financial toxicity is incorporating universal screening as standard of care for cancer patients. While OOP expenditures are typically front-loaded

following diagnosis, patients may not receive their bills right away and thus may be initially unaware of potential financial strain until after they have started treatment. Throughout treatment, patients may have changes in their ability to work which may be reflected in decreased income or change or loss of insurance benefits. Additionally, there is evidence that financial toxicity persists even after treatment is completed as cancer survivors 5 years from their diagnosis continue to experience higher medical costs and face work limitations compared to patients who have never had cancer [16]. Whether a single screening question or a brief patient reported outcome instrument such as the Comprehensive Score for Financial Toxicity (COST) is used, financial toxicity screening can be incorporated into the existing intake process (i.e., by nurses, care coordinators, or financial counselors). Screening may target patients starting or switching to a new treatment regimen and then be repeated at planned follow-up intervals to assess for both positive changes after intervention and negative changes due to fluctuating circumstances (see Table 1) [17–22].

Improving early triage to available financial assistance resources

Financial toxicity screening can be used to triage patients to appropriate support staff (i.e., social worker, financial counselor) and financial assistance resources. In addition, identification of individuals at high risk for experiencing future financial toxicity will allow health care teams to intervene early in hopes of avoiding negative downstream effects. Studies have shown that patient factors including female sex, younger age, and lower income are risk factors for increased financial toxicity [9]. Lack of insurance can lead to increased financial strain. Due to rising cost pressures, payors and employers have shifted an increasing proportion of financial responsibility to patients, which has resulted in an enlarging pool of *underinsured* individuals. Insurance coverage alone does not protect patients from experiencing financial toxicity; thus, patients with high-deductible health plans or Medicare without supplemental insurance may represent additional red flags. More recent diagnosis, advanced stage, systemic therapy, increased number of co-morbidities, and farther distance from treatment centers also represent important disease and treatment risk factors [9]. Capturing patients who have applied for hospital payment assistance programs or have outstanding bills and successfully linking them to available financial assistance resources can form the basis of a business case for health systems to hire dedicated personnel to help patients navigate their financial responsibilities.

Communicating cost information to patients

As a key component of any comprehensive cancer care plan, the Institute of Medicine recommends that health care teams provide patients and their families with understandable information estimating the OOP costs of cancer care [23]. Providing cost estimates can be challenging because of the complexities of treatment, lack of cost transparency, and difficulty accurately predicting payor coverage. OOP estimate tools are under development, but many of these are manual, home grown, or when purchased from commercial vendors are not specific to oncology or only calculate certain categories of cost (i.e., chemotherapy drug costs) [24]. Meanwhile, cost conversations are estimated to occur in less than one quarter of patient encounters [25]. Cost-reducing strategies can include switching to lower-cost medications (i.e., change in route of administration, alternative drug, or generic

formulation) or purposefully timing health care spending late in the calendar year when patients have usually met their deductible. The American Society of Clinical Oncology has proposed a value framework as a shared decision making tool for patients and providers to use when deciding between treatment options [26]. Using this framework, a net health benefit score is calculated based upon clinical benefit, toxicity, palliation, and treatment-free interval and shown alongside cost, which is measured as monthly drug acquisition cost as well as patient co-payment. Useful cost information for supportive medications (i.e., anti-emetics or pain medications) can also include cost differences with versus without insurance, existence of local drug discount programs, or availability of generic formulations.

Developing a comprehensive financial counseling model

An ideal comprehensive financial counseling program would provide regular financial toxicity screening to all patients and baseline patient education on topics such as understanding insurance benefits, interpreting medical bills, and anticipating estimated OOP costs. In addition, health care teams would identify both uninsured and underinsured patients as well as patients who screen positive for severe financial toxicity to triage them to available financial assistance programs. These could include enrollment in copayment assistance programs, development of realistic payment plans, changing or adding insurance, and tapping into external sources of financial support. At the most advanced level, a comprehensive program would assess patients' financial literacy and help improve their financial skills, such as gauging personal financial status, budgeting, responding to financial change, building credit, and managing debt. Recent initiatives have placed an increased emphasis on cancer care delivery research, which aims to evaluate the interaction of patients, caregivers, providers, health care systems, and payors on cancer outcomes important to patients, such as financial toxicity [27]. It will require a collaborative effort among all these stakeholders to develop evidence-based, patient-centric methods for discussing and managing the financial burdens of cancer care.

Acknowledgements:

This work was supported by an institutional National Institute of Child Health and Human Development K-12 training grant (Women's Reproductive Health Research Career Development Grant - 5K12HD001258).

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Table 1:

Financial toxicity screening instruments

Instrument	Screening question(s)	Potential responses
National Comprehensive Cancer Network (NCCN) Distress Thermometer and Problem List ¹⁷	Please circle the number (0-10) that best describes how much distress you have been experiencing in the past week including today. Please indicate if any of the following has been a problem for you in the past week including today.	0 (no distress) to 10 (extreme distress) Under Practical Problems: Child Care, Housing, Insurance/financial, Transportation, Work/school, Treatment decisions
Behavioral Risk Factor Survey ¹⁸	In the last 12 months, was there a time when you needed to see a doctor but could not because of cost?	Yes No
Medical Expenditure Panel Survey ¹⁹	In the last 12 months, did you skip medications to save money?	Yes No
Aldana & Liljenquist ²⁰	Please indicate how often this describes you: I don't have enough money to pay my bills.	Never Rarely Sometimes Often Always
Organization for Economic Cooperation and Development (OECD) Measuring Financial Literacy ²¹	Sometimes people find that their income does not quite cover their living costs. In the last 12 months, has this happened to you?	Yes No Don't Know
Comprehensive Score for Financial Toxicity (COST) ²²	I know that I have enough money in savings, retirement, or assets to cover the costs of my treatment. My out-of-pocket medical expenses are more than I thought they would be. I worry about the financial problems I will have in the future as a result of my illness or treatment. I feel I have no choice about the amount of money I spend on care. I am frustrated that I cannot work or contribute as much as I usually do. I am satisfied with my current financial situation. I am able to meet my monthly expenses. I feel financially stressed. I am concerned about keeping my job and income, including work at home. My cancer or treatment has reduced my satisfaction with my present financial situation. I feel in control of my financial situation.	Not at all A little bit Somewhat Quite a bit Very much COST score <26 proposed as threshold for severe financial toxicity