

**UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA**

UNITED STATES OF AMERICA

v.

**CYNTHIA BALLENGER, and
CHRISTOPHER PRICE,**

Defendants.

Case No. 1:21-cr-00719 (JEB)

**DEFENDANTS' NOTICE OF SUPPLEMENTAL INFORMATION: THE ROLE
OF STRESS AND THE ROLE AND IMPACT ON CAREGIVERS**

Comes now Defendant Cynthia Ballenger (Cynthia Price) and Defendant Christopher Price, (together Defendants or the Prices) by and through undersigned counsel, to provide supplemental information from publicly available sources concerning the impacts of stress and caregiver support. On November 26, 2023, Defendants provided the letters/reports of providers and pastor connected with the Frederick Health Medical Group providing treatment and care for Christopher Price [ECF 154, 154-1, 154-2, 154-3, 154-4]. The first attachment [154-1] is a joint letter/report dated November 17, 2023 signed by Jodi Gerber, Clinical Oncology Social Worker and Dr. Gagnon, Director of Radiation Oncology. Among other things the letter states Chris has side effects, that it is stressful time and emotional roller coaster. The letter states it is important for Christopher to have support during this time from his wife and family as he finishes his radiation therapy and starts to

heal and recover physically and emotionally. Attachment 2 is a letter/report sent by email to Defense Counsel on November 21, 2023 by Dr. Gagnon which contains more details concerning diagnosis, treatment, steps and outlook. The letter describes persistent abdominal cramping and outlooks for how long symptoms may persist and what may develop. The letter talks about longer term outlook. In particular, the letter focuses on outlook regarding people with people with PSMA-positive nodal recurrence in prostate cancer. The point is that the outlook for Stage IV prostate cancer is a different category than those who are first diagnosed with prostate cancer. This is a different level of stress, outlook, caregiving needs and uncertainty.

Here the Prices provide some additional information from public sources. This additional public information is in the form of links, all last visited this day of November 29, 2023.

Chronic Stress and the Progress of Cancer

The first is an Abstract of an article styled “Chronic Stress Promotes Cancer Development”. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7466429/>. The Abstract says that recent studies have shown that chronic stress can induce tumorigenesis and promote cancer development. The abstract describes the physical mechanisms to include activating the neuroendocrine system, the role of stress hormones, and changes in the body’s immune function and inflammatory responses, which are implicated in the progress of cancer.

One article on the MD Anderson website is styled : “How stress affects cancer risk.” <https://www.mdanderson.org/publications/focused-on-health/how-stress-affects-cancer-risk.h21-1589046.html>. Anil K. Sood, M.D. is quoted as saying:

“Chronic stress also can help cancer grow and spread in a number of ways,”
... Stress hormones can inhibit a process called anoikis, which kills diseased cells and prevents them from spreading.... Chronic stress also increases the production of certain growth factors that increase your blood supply. This can speed the development of cancerous tumors....

Lorenzo Cohen, Ph.D., professor of General Oncology and Behavioral Science, and director of the Integrative Medicine Program at MD Anderson states:

....there’s little doubt that it promotes the growth and spread of some forms of the disease. Put simply, “stress makes your body more hospitable to cancer....

The Abstract of an additional article styled “Impact of stress on cancer Metastasis” (<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3037818/pdf/nihms-269073.pdf>written) by Doctor Sood and other doctors states:

Epidemiological and clinical studies over the past 20 years have provided strong evidence for links between chronic stress, depression and social isolation and cancer progression.

This online article from Integrative Oncology Essentials

(<https://integrativeoncology-essentials.com/2012/04/anticancer-lifestyle-stress-reduction-101/>) states:

Stress and Cancer Progression:

Once a tumor has developed, stress may modulate neuroendocrine pathways and affect numerous mechanisms that potentially lead to the progression of cancer:

- Stress hormone stimulation of beta-adrenergic receptors (present on all cells) increases tumor growth rates
- Stress hormones increase tumor cell invasiveness and metastatic activity
- Stress hormones increase tumor blood vessel growth
- Stress hormones suppress natural killer (NK) cell activity (immune suppression)
- Stress hormones reduce the cancer-killing effects of chemotherapy on tumor cell apoptosis (cell death/suicide)

Stress may be present from diagnosis to the survivorship period, and can be associated with behavioral comorbidities and diminished quality of life (i.e. depression, fatigue, sleep disturbances, and cognitive dysfunction.) Medical complications or side effects of cancer and treatment can further exacerbate these symptoms.

The Role of Caregivers in Cancer and Late Stage Cancer

Another Abstract of an article styled “In sickness and in health: The role of marital partners in cancer survival”

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5769016/> states:

Married cancer patients enjoy a survival advantage, potentially attributable to better health at diagnosis, earlier contact with health personnel, and/or access to resources to ensure more optimal treatment.

The American Cancer Society makes clear that caregivers are part of the cancer care team by giving medicines, handling side effects, reporting problems, helping decide if a treatment is working. In many cases the caregiver is the one person who knows everything that’s going on with the patient.

The Abstract of an additional article styled “Supporting the patients with advanced cancer and their family caregivers: what are there palliative care needs”

(<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7429720/>) states:

Overall, the findings confirm that patients with advanced cancer and their [family caregivers] have many palliative care needs irrespective of their clinical setting... In addition, [family caregivers] also tended to have more unmet needs than patients especially in the area of practical, emotional and psychological support, and quick access to healthcare professionals.

The Abstract of an article called “A Support Intervention for Family Caregivers of Advanced Cancer Patients”

(<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7779567/>) states:

An analysis of 810 citations produced results from 50 randomized trials that described the need to prepare family caregivers for the complex role they play in cancer care.....The psychological concerns of family caregiving, including anxiety, depression, fear, and living with uncertainty, are also well documented

This article also refers to financial factors:

....Financial factors are numerous including, but not limited to, out-of-pocket expenses, lost work time, travel costs, medication co-payments, insurance deductibles, payment for over-the-counter medications, payment for services the patient or caregiver can no longer do (child care, housekeeping, gardening), lab tests that are not covered by insurance, increased utility bills, the cost of special foods, the cost of insurance premiums, and a wide range of often unanticipated expenses. Clinicians recognize that these financial concerns have a direct impact on the patient's ability to complete treatment and on the family members providing care. (emphasis added).

The Prices ask that the court to take these points into consideration.

Dated: November 29, 2023

Respectfully submitted,

/s/ Nandan Kenkeremath

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