

THE IMPORTANCE OF THE DISEASE-FREE SURVIVAL ENDPOINT TO SURVIVORS OF LUNG CANCER

Andrea Bever,¹ Jackie Manthorne,² Tissa Rahim,¹ Layla Moumin,² Karissa Johnston,¹ Shelagh Szabo¹

¹BROADSTREET Health Economics & Outcomes Research, Vancouver, BC; ²Canadian Cancer Survivor Network, Ottawa, ON

Background

- Lung cancer is the second most common cancer and the leading cause of cancer death worldwide.¹
- In lung cancer clinical trials, overall survival (OS) is a widely used and validated endpoint; however, long follow up periods can be needed to accurately estimate OS.
- When new treatments extend life expectancy sufficiently that OS data will not be quickly available, disease-free survival (DFS) may provide a useful metric.
- Regulatory agencies have approved treatments based on DFS, reflecting its value in characterizing clinical benefit to patients and mitigating certain challenges of OS.²
- Although use of DFS is growing, patient perceptions of DFS have not been established.



Overall survival
The amount of time a person who is diagnosed with cancer is alive, with or without cancer, after the start of treatment



Disease-free survival
The amount of time after the start of treatment that a person who is diagnosed with cancer has no sign of cancer and is alive

Objective

To understand the importance of DFS as a treatment endpoint, from the perspective of Canadian lung cancer survivors.

References:

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- Mühlbacher AC, Bethge S. Patients' preferences: a discrete-choice experiment for treatment of non-small-cell lung cancer. *The European journal of health economics : HEPAC : health economics in prevention and care*. 2015;16(6):657-670.
- MacEwan JP, Doctor J, Mulligan K, et al. The Value of Progression-Free Survival in Metastatic Breast Cancer: Results From a Survey of Patients and Providers. *MDM policy & practice*. 2019;4(1).

Methods

- Survivors of stage IB to IIIA lung cancer participated in qualitative interviews using a web-based platform.
- Eligibility criteria:
 - Treated for stage IB-IIIa lung cancer
 - Living in Canada
 - Fluent in English
 - Capable of providing informed consent
- Participants were recruited through a national patient advocacy organization, the Canadian Cancer Survivor Network.
- Interview materials included a semi-structured interview guide, explanatory infographics (Figure 1), and a demographic and clinical questionnaire; these were developed based on literature review and feedback from oncology experts, outcomes researchers, patient advocacy representations.
- During interviews:
 - Participants described their experiences of early-stage lung cancer diagnosis and treatments, including their treatment priorities and goals.
 - Information and infographics about DFS and OS as clinical trial endpoints was shared.
 - Participants provided their perspectives on DFS and OS, including how well each endpoint aligned with their treatment priorities.
- Interviews were audio recorded and transcribed; participants characteristics were summarized, and thematic analysis was used to explore patterns in responses in accordance with the principles described by Braun and Clarke.³

Results

Table 1: Participant characteristics (n=18)

Characteristic	n (%)
Mean (SD) age at interview (y)	64 (9)
Mean (SD) age at diagnosis (y)	58 (9)
Female gender	15 (83)
Region in Canada*	
Atlantic	4 (22)
Prairies	4 (22)
Central	9 (50)
West Coast	1 (6)
Cancer stage at diagnosis	
IB	6 (33)
II	3 (17)
IIIA	9 (50)
Received surgery	16 (89)
Received chemotherapy	10 (56)

SD=standard deviation; Y=years; *no participants were included from the Northern Territories

- Characteristics of the 18 participants are presented in Table 1.
- Analyses demonstrated that DFS was intrinsically relevant to most participants because it aligned with their treatment priorities.
 - Many said that getting rid of cancer or being cured was their most important treatment goal; other common goals included surviving and maintaining quality of life.

"I wanted to be the on-in-five that would achieve cure. Just that was my total aim." P09

- Participants often valued DFS in the absence of extended OS because they associated DFS with improved quality of life.

"If you had a better quality of life...it should still be considered...you're going to live better and your relapse will happen longer down the road even though your life isn't extended." P01

"I would go for the quality over the quantity." P05

- All participants emphasized that they felt new treatments should be quickly approved based on DFS when OS data are not yet available; an issue that was often viewed in the context of promoting patient agency in treatment decision-making.

"Once the medication's been studied and they went through trials, then it should be made available as soon as possible." P08

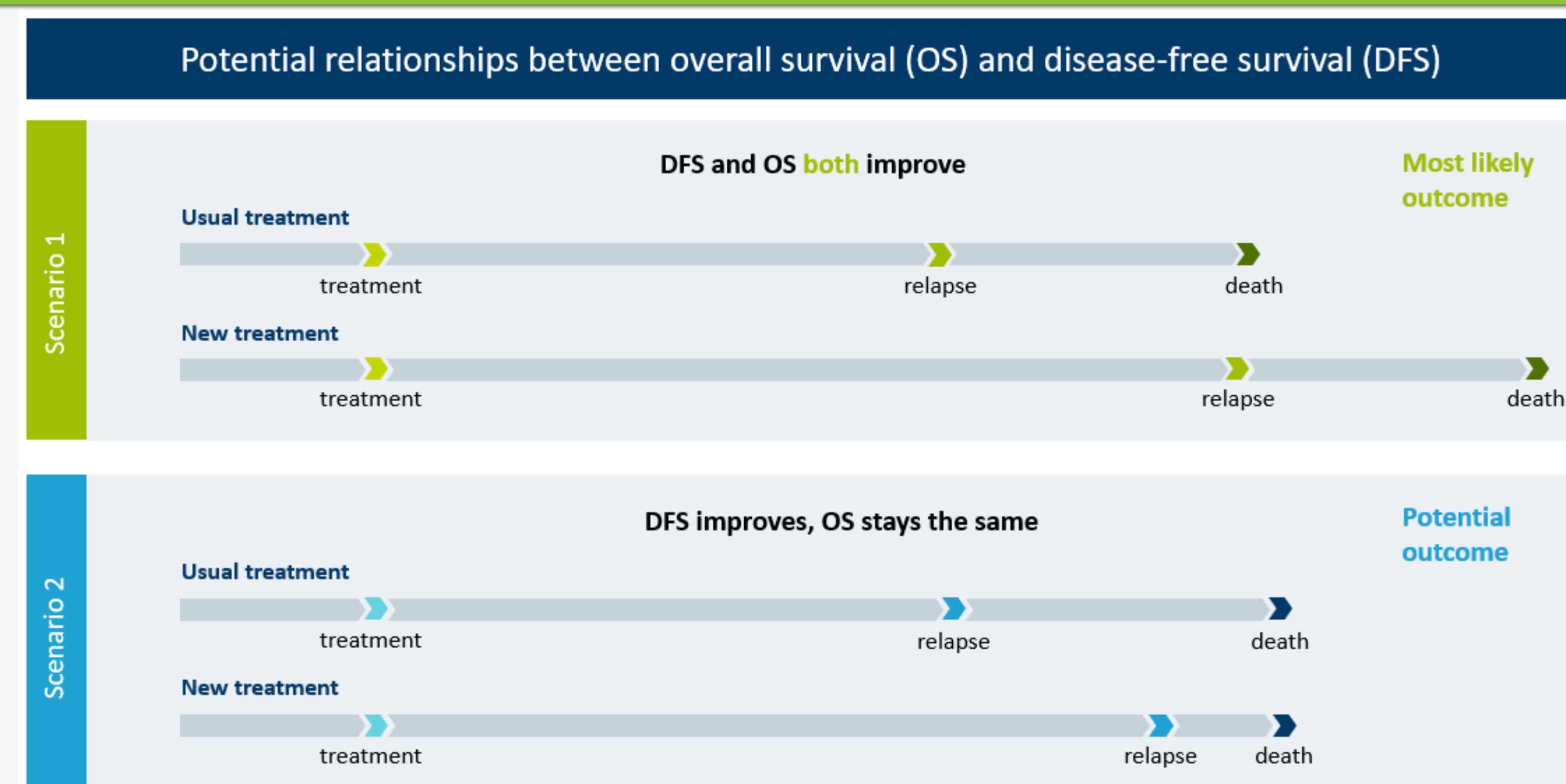
"I would tell them [decisionmakers] that if there is a new medicine available, to get on it, to approve it so that it can be used to save lives or at least give them better quality of life." P14

- The idea that DFS is important only as a surrogate for OS was not a common belief.
 - One participant felt strongly that OS aligned with their treatment priorities rather than DFS.

"If I can continue to live and have quality of life even if I am taking a treatment, that is what I'm going to go for. For me, it's not about having the disease in my body, it's about keeping it from killing me." P06

- Despite alignment with OS, this participant supported the approval of new treatments based on DFS data.

Figure 1: Infographic illustrating the potential relationships between OS and DFS



Conclusion

These findings suggest that DFS is a meaningful endpoint from the perspective of lung cancer survivors and highlight patients' desire for rapid approval of treatment that have been demonstrated to improve DFS. This is consistent with the literature on patient preference for progression-free survival (PFS), which indicates that cancer patients value a variety of clinical endpoints in addition to OS.^{4,5}