Estimating the United States cure-adjusted prevalence of diffuse large B-cell lymphoma (DLBCL): An epidemiological model

M. Hashim[1], T. Beaulieu[2], J. Kwong[2], J. Bussolari[2], M. Spencer[2], M. Gaudig[2]

[1]Johnson&Johnson Innovative Medicine, Leiden, Netherlands
[2]Johnson&Johnson, Innovative Medicine, Raritan, US

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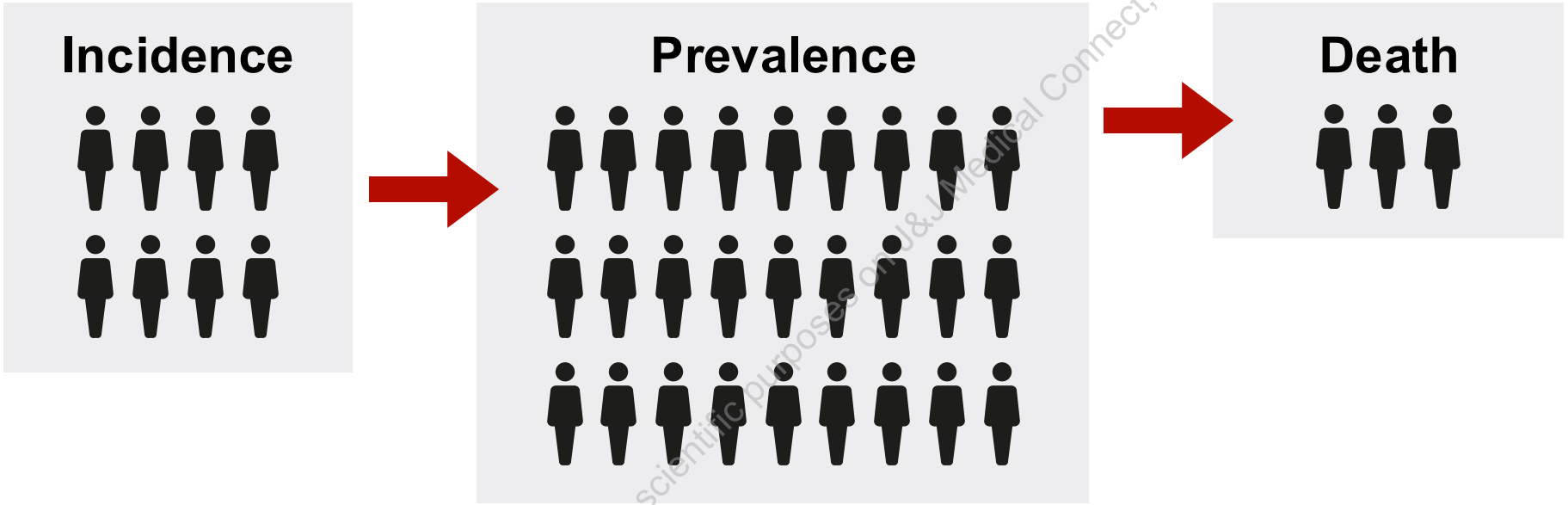
Disclosures

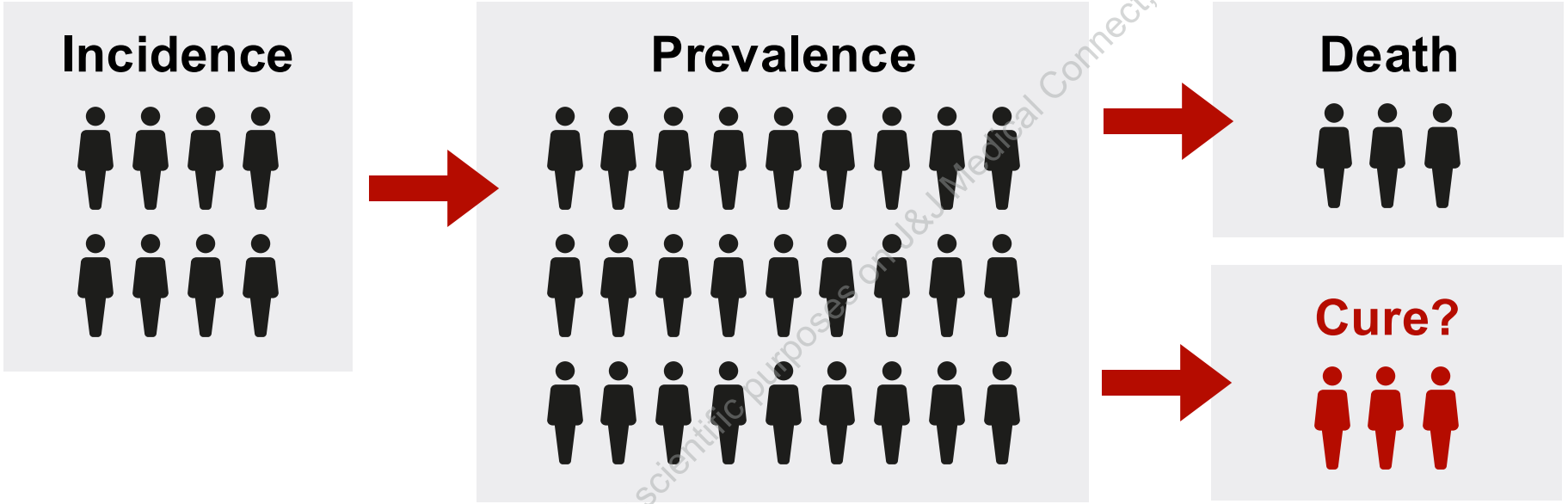
All authors

- Employment: Johnson and Johnson Innovative Medicine
- Hold stock and stock options in Johnson and Johnson

Prevalence reflects both how often a disease occurs and how long patients survive

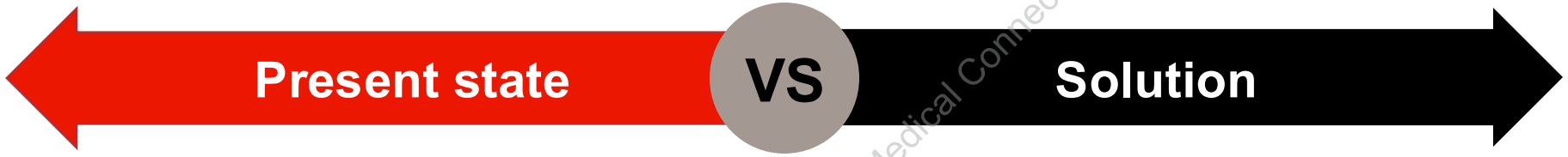


In DLBCL, treatment advances enable cure for an expanding subset of patients



DLBCL, diffuse large B-cell lymphoma

Project Objective



Traditional prevalence estimates may **overestimate disease burden** by including cured patients, leading to misallocation of resources and treatment planning

Accurate prevalence estimates that **account for cures** are essential to reflect the true number of patients currently living with **active disease**

2000-2022 SEER-21 data were used to estimate DLBCL incidence and survival for DLBCL patients

Using 2000-2022 SEER-21 Research Data (SEER*Stat Version: 9.0.40.1), DLBCL incidence and survival for patients with first primary DLBCL tumors were analyzed:

- DLBCL cases were identified using the 2021 Lymphoid neoplasm recode classification system code 2(a)2.3, comprising DLBCL not otherwise specified, intravascular large B-cell lymphoma, primary effusion lymphoma and mediastinal large B-cell lymphoma, primary effusion lymphoma and mediastinal large B-cell lymphoma[2]
- Crude incident case counts of DLBCL in 2000-2022 were used as observed; Incident cases for 2023-2025 were projected using linear extrapolation of historical incident cases [3]
- Parametric Weibull survival models were fitted by diagnosis year in R using the flexsurvreg package, with different parameters for each year; standard extrapolation equations (Briggs et al. 2006[4]) were used to extrapolate survival to 2025 in a Microsoft Excel model

First, prevalence estimate of DLBCL patients in 2025 (without cure assumptions) was calculated as the total number of patients who were diagnosed each year since 2000 and remaining alive

- With cure assumptions, patients assumed to be cured based on cure parameters were removed from the prevalence pool

DLBCL, diffuse large B-cell lymphoma; SEER, Surveillance, Epidemiology, and End Results (SEER) Program of the National Cancer Institute (NCI)

Cure assumption was defined using three parameters

Timepoint (from first DLBCL diagnosis) at which patients can first be considered cured	1 – 4 years
Proportion of patients who were cured at that time	40 – 70%
Timepoint (from first DLBCL diagnosis) at which all survivors are considered cured	5 or 10 years

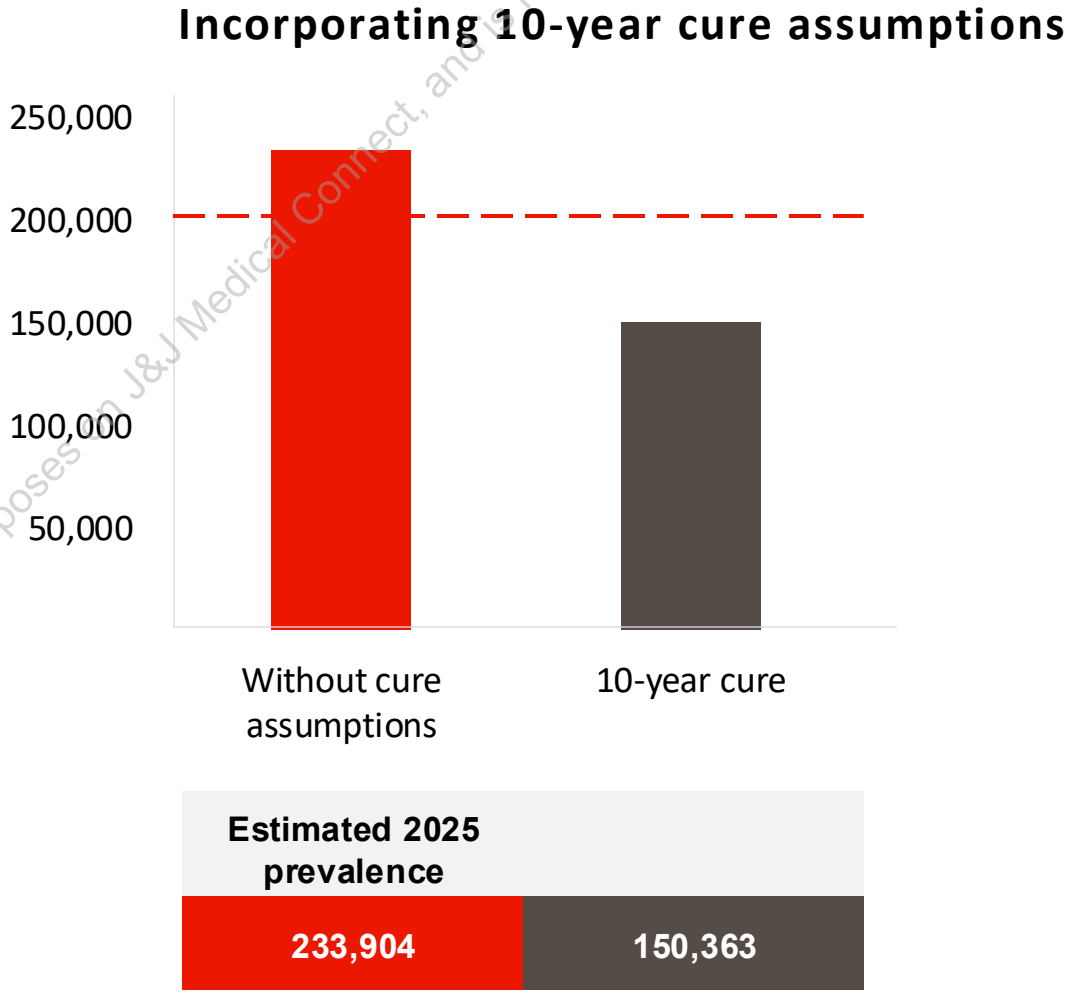
DLBCL, diffuse large B-cell lymphoma

When incorporating cure assumptions, prevalence estimates decreased substantially …

In the <u>conservative</u> scenario:

- No early cure
- Only DLBCL patients alive at 10-years after diagnosis, considered cured

→ Prevalence estimate of **150,363**



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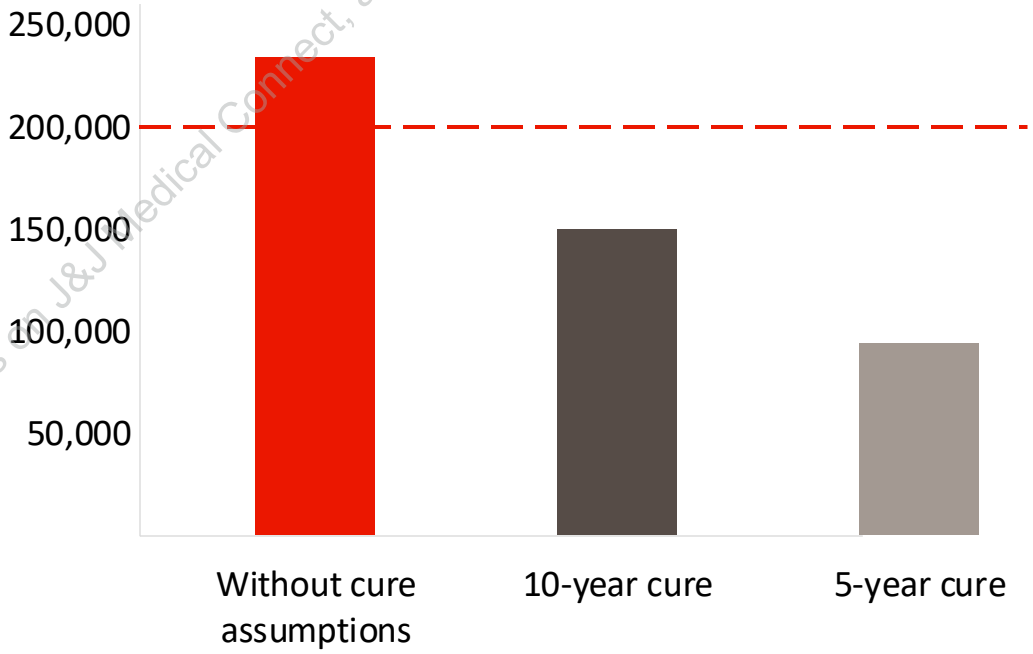
When incorporating cure assumptions, prevalence estimates decreased substantially …

When reducing the cure timepoint to 5-years:

- No early cure
- All survivors considered cured at 5-years after diagnosis

→ Prevalence estimate decreased further to **94,162**

Incorporating 5-year cure assumptions



Estimated 2025 prevalence		
233,904	150,363	94,162

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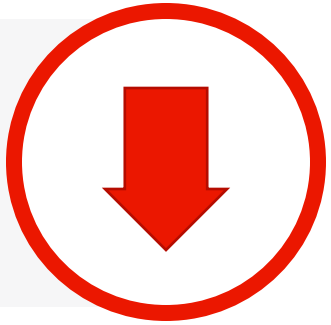
When incorporating early cure assumptions, prevalence estimates decreased further

When incorporating early cure parameters (40-70% cured at years 1-4), prevalence decreased even more



When incorporating early cure assumptions, prevalence estimates decreased substantially …

With all remaining survivors considered cured at 10 years post diagnosis:

→ Prevalence estimates ranged from **79,199** (70% cured at year 1) to **123,190** (40% cured at year 4)

Earliest year cure occurs	Cure percentage at this early timepoint						
	40%	45%	50%	55%	60%	65%	70%
1	109,698	104,615	99,532	94,448	89,365	84,282	79,199
2	114,882	110,447	106,012	101,577	97,142	92,707	88,271
3	118,439	114,449	110,458	106,467	102,477	98,486	94,496
4	123,190	119,794	116,397	113,000	109,604	106,207	102,810

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When incorporating early cure assumptions, prevalence estimates decreased substantially …

With all remaining survivors considered cured at year 5 post diagnosis:

→ Prevalence estimates ranged from
62,338 (70% cured at year 1) to
89,469 (40% cured at year 4)

Earliest year cure occurs	Cure percentage at this early timepoint						
	40%	45%	50%	55%	60%	65%	70%
1	75,977	73,704	71,431	69,158	66,885	64,612	62,338
2	81,161	79,536	77,911	76,286	74,661	73,036	71,411
3	84,718	83,538	82,357	81,177	79,996	78,816	77,635
4	89,469	88,883	88,296	87,710	87,123	86,537	85,950

Summary

- As advances in DLBCL therapies improve overall survival and allow more patients to be treatment-free, prevalence estimates need to be adjusted to provide a more realistic disease burden estimate.
- This modelling study showed how varying definitions of cure of disease may affect prevalence estimates of DLBCL. All cure-adjusted prevalence estimates for DLBCL tested in this study, suggested a 2025 US prevalence estimate below 200,000 cases.
- Future studies should consider other clinical parameters (e.g. no evidence of disease, treatment-free interval, complete remission) in addition to survival, for a more precise definition of cure; real-world evidence database analyses in other settings (e.g., EU, Japan, etc..) could also be explored.
- The validity of cure assumption needs to be confirmed by real world evidence.

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References

- Chihara D, Johnston K, Bolatova T, et al. An epidemiological model to estimate the prevalence of diffuse large B-cell lymphoma in the United States. Clin Lymphoma Myeloma Leuk. 2022 Dec;22(12):e1092-e1099. doi: 10.1016/j.clml.2022.08.008. Epub 2022 Aug 21. PMID: 36109323

- Lymphoid Neoplasm Recode 2021 Revision (code 2(a)2.3) for DLBCL Lymphoid Neoplasm

- SEER Research Data, 2000-2022 SEER-21 Research data (SEER*Stat Version: 9.0.40.1)

- Briggs A, Claxton K, and Sculpher M. Decision modelling for health economic evaluation. Oxford University Press; 2006

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