

2-2019

# Large Five State Health System Standardizes Stroke Patient Education While Significantly Improving Health Literacy

Natalie Swearingen

*Providence Portland Medical Center, Natalie.Swearingen@providence.org*

Leslie Corless

*Providence Brain and Spine Institute, leslie.corless@providence.org*

Jessica Swann

*Providence St. Joseph Health, Jessica.Swann@providence.org*

Kailey Cox

*Providence St. Vincent Medical Center, Kailey.Cox@providence.org*

Diane Lada

*Providence Alaska Medical Center, Diane.Lada@providence.org*

*See next page for additional authors*

Follow this and additional works at: [https://digitalcommons.psjhealth.org/other\\_pubs](https://digitalcommons.psjhealth.org/other_pubs)

 Part of the [Neurology Commons](#)

---

## Recommended Citation

Swearingen, Natalie; Corless, Leslie; Swann, Jessica; Cox, Kailey; Lada, Diane; and Baraban, Elizabeth, "Large Five State Health System Standardizes Stroke Patient Education While Significantly Improving Health Literacy" (2019). *Books, Presentations, Posters, Etc.*. 55.

[https://digitalcommons.psjhealth.org/other\\_pubs/55](https://digitalcommons.psjhealth.org/other_pubs/55)

This Poster is brought to you for free and open access by Providence St. Joseph Health Digital Commons. It has been accepted for inclusion in Books, Presentations, Posters, Etc. by an authorized administrator of Providence St. Joseph Health Digital Commons. For more information, please contact [digitalcommons@providence.org](mailto:digitalcommons@providence.org).

---

**Authors**

Natalie Swearingen, Leslie Corless, Jessica Swann, Kailey Cox, Diane Lada, and Elizabeth Baraban

# Large Five State Health System Standardizes Stroke Patient Education While Significantly Improving Health Literacy

Natalie Swearingen, MSN, RN, CNRN<sup>1</sup>; Leslie Corless, MPH<sup>2</sup>; Jessica Swann, MA<sup>3</sup>; Kailey Cox, BSN, RN, SCRNP<sup>4</sup>; Diane Lada, MSN, RN, ACNP-BC, SCRNP<sup>5</sup>; Elizabeth Baraban, MPH, PhD<sup>2</sup>

<sup>1</sup>Providence Portland Medical Center, <sup>2</sup>Providence Brain and Spine Institute, <sup>3</sup>Providence St. Joseph Health, <sup>4</sup>Providence St. Vincent Medical Center, <sup>5</sup>Providence Alaska Medical Center

## Background

- Written stroke patient education materials are instrumental to improving the patient care experience.
- Since 2010, national certifying bodies recommend written materials at a maximum reading level of 5th grade to meet health literacy needs.<sup>1</sup>
- In 2016 certified comprehensive and primary stroke centers from a multi-state health system discovered significant variation among stroke patient education booklets (SPEB) developed by separate facilities/states.
- In 2018 the health system implemented a standard SPEB by partnering with an external organization (EO) to add information in the SPEB specific to carotid disease and stroke symptoms.

## Purpose

Compare the health literacy of pre-standardization SPEBs to the updated EO SPEB with and without carotid education.

## Methods

- Readability assessments were used to determine reading grade levels for pre-standardization SPEBs consisting of 7 SPEB among 18 facilities in 5 states, the EO standardized SPEB with and without the additional carotid education, and the carotid education additions alone.<sup>2</sup>
- These assessments were then used to calculate a readability consensus score (RCS), using an online tool, reported as grade levels.
- Visual Imagery was not included in the assessments.<sup>3</sup>

| Readability Assessments included: |   |
|-----------------------------------|---|
| 1                                 | Flesch Reading Ease Formula,                              |
| 2                                 | Flesch-Kincaid Grade Level,                               |
| 3                                 | Gunning Fog Index Readability Formula                     |
| 4                                 | Simple Measure of Gobbledygook (SMOG) Readability Formula |
| 5                                 | Coleman-Liau Index  |
| 6                                 | Automated Readability Index                               |
| 7                                 | Linsear Write Formula.                                    |

## Results

- Pre-standardization materials:
  - The range of RCS grade levels was 7th to 12th grade (Figure 1).
  - A grade level of 11 - 12 was found for 57.1% of sites.
- EO SPEB with and without carotid education:
  - RCS grade level of 7
  - Adding carotid disease education increased RCS grade level to 8.
- Carotid education alone:
  - College graduate reading level.
- Utilization of the EO SPEB improved the health literacy level for 88.9% of sites.

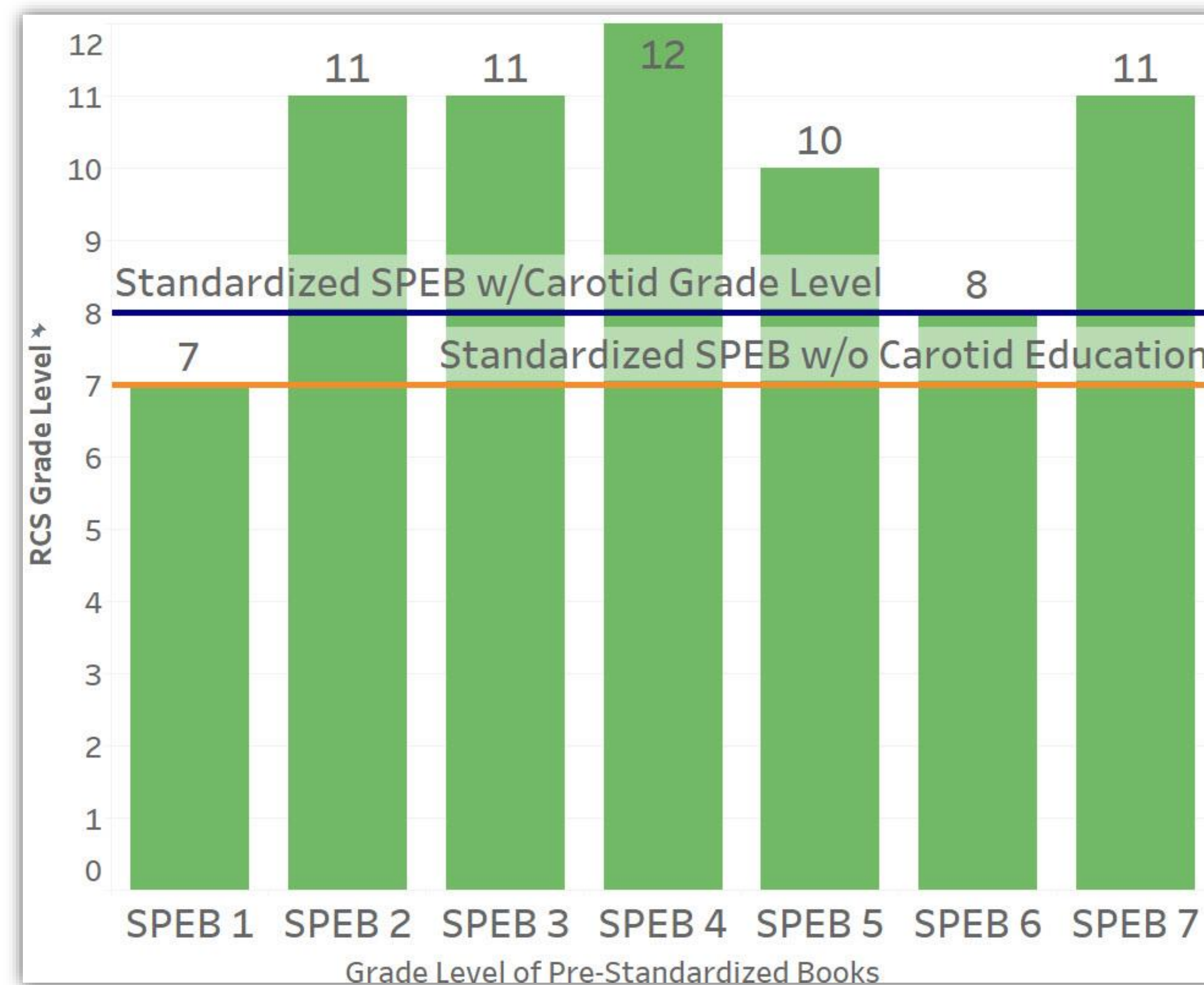


Figure 1: RCS Grade Level of Pre-Standardization Stroke Patient Education Books as Compared to New Stroke Patient Education Book

## Conclusions

- Implementing a standardized SPEB in a large five state health system significantly improved the health literacy level at 88.9% of the participating facilities.
- The recommended 5<sup>th</sup> grade health literacy level was not achieved based on the RCS.
- More research is needed on the impact visual imagery has on health literacy.

## References

- The Joint Commission: *Advancing Effective Communication, Cultural Competence, and Patient- and Family-Centered Care: A Roadmap for Hospitals*. Oakbrook Terrace, IL: The Joint Commission, 2010.
- Wang, L.W., Miller, M.J., Schmitt, M.R., and Wen, F.K. (2013). Assessing readability formula differences with written health information materials: application, results, and recommendations. *Research in Social and Administrative Pharmacy*, 9(5), 503-516.
- Entwistle, V., & Williams, B. (2008). Health literacy: the need to consider images as well as words. *Health Expectations: An International Journal of Public Participation in Health Care and Health Policy*, 11(2), 99-101. <http://doi.org/10.1111/j.1369-7625.2008.00509.x>