Creating a culture of data collection with mobile technology for clinical assessments and Patient Reported Outcomes in radiotherapy for Head and Neck (HN) and Prostate services

Zhi Cheng, Harry Quon, Ana Kiess, Scott Robertson, Joseph Moore, Wuyang Yang, Mysha Allen, Sarah Afonso, Amanda Choflet, Todd McNutt

Department of Radiation Oncology, Johns Hopkins University, Baltimore, Maryland

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Oncospace

Purpose/Objectives

- Radiation oncology is ideal for building **big data**
- ❖ Frequent interaction with patients
- ❖ Highly computed treatment planning data

- However, resistance exists in high-volume clinics
- ❖ Additional cost for data collection
- ❖ Effort and time for documentation

- In this study,
- ❖ We developed **a tablet compatible browser-based platform** which integrates clinical activities with data collection and analysis presentation.
- ❖ The **performance of a new culture of data collection** and ability to support decision-making was evaluated.

Materials/Methods

- Platforms and tools
- ❖ A **browser-based platform** was built to exchange and present **real-time** and pre-processed data from a MOSAIQ® database.
- ❖ Tools to increase operation **efficiency** were developed, such as providing quick links to desired quality of life (QoL) instruments and clinical assessments grouped based on physician schedules and clinical needs.

- Clinic workflow and PHI protection
- ❖ Tablets were distributed in HN and prostate cancer clinics to **prospectively and routinely** collect clinical data (Fig. 1a)

Figure 1a. Data collection via tablet in waiting room

Figure 1b. Sydney Swallow Questionnaire with Kiosk mode

Materials/Methods- continued

- ❖ Tablets given to patients in the exam room for self-reported QoL questionnaires (Fig. 1b)
- ❖ **Kiosk mode** prevents patient access to PHI

Head and Neck QoL	Prostate QoL
FACT-Head and Neck	Int'l Prostate Symptom Score (IPSS)
MD Anderson Dysphagia Inventory	Sexual Health Inventory for Men (SHIM)
Sydney Swallow Questionnaire	Bowel Habits Questionnaire

- Data collection **outside of our department**
- ❖ Speech pathologists
- ❖ Surgeons
- ❖ Medical oncologists
- ❖ Physical therapists

Results

Prostate (Fig. 2a-b)
- ❖ Electronic data capture of prostate QOL initiated in 2014
- ❖ There are 337 patients with prospectively collected data
- ❖ Compliance rate for baseline, 6 month, and 1 year QOL currently 90%, 63%, and 66%
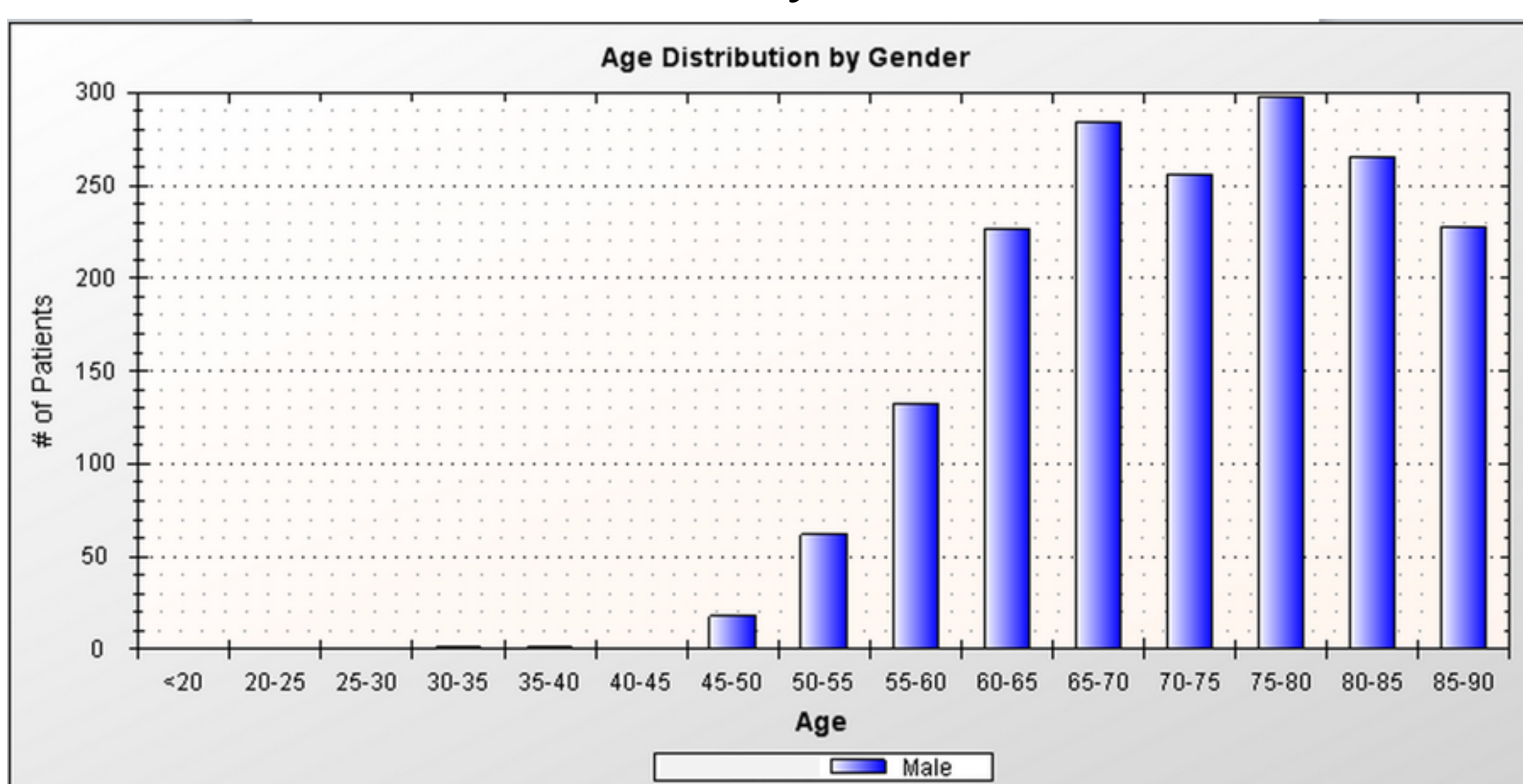- ❖ 74 User visits from May 2015

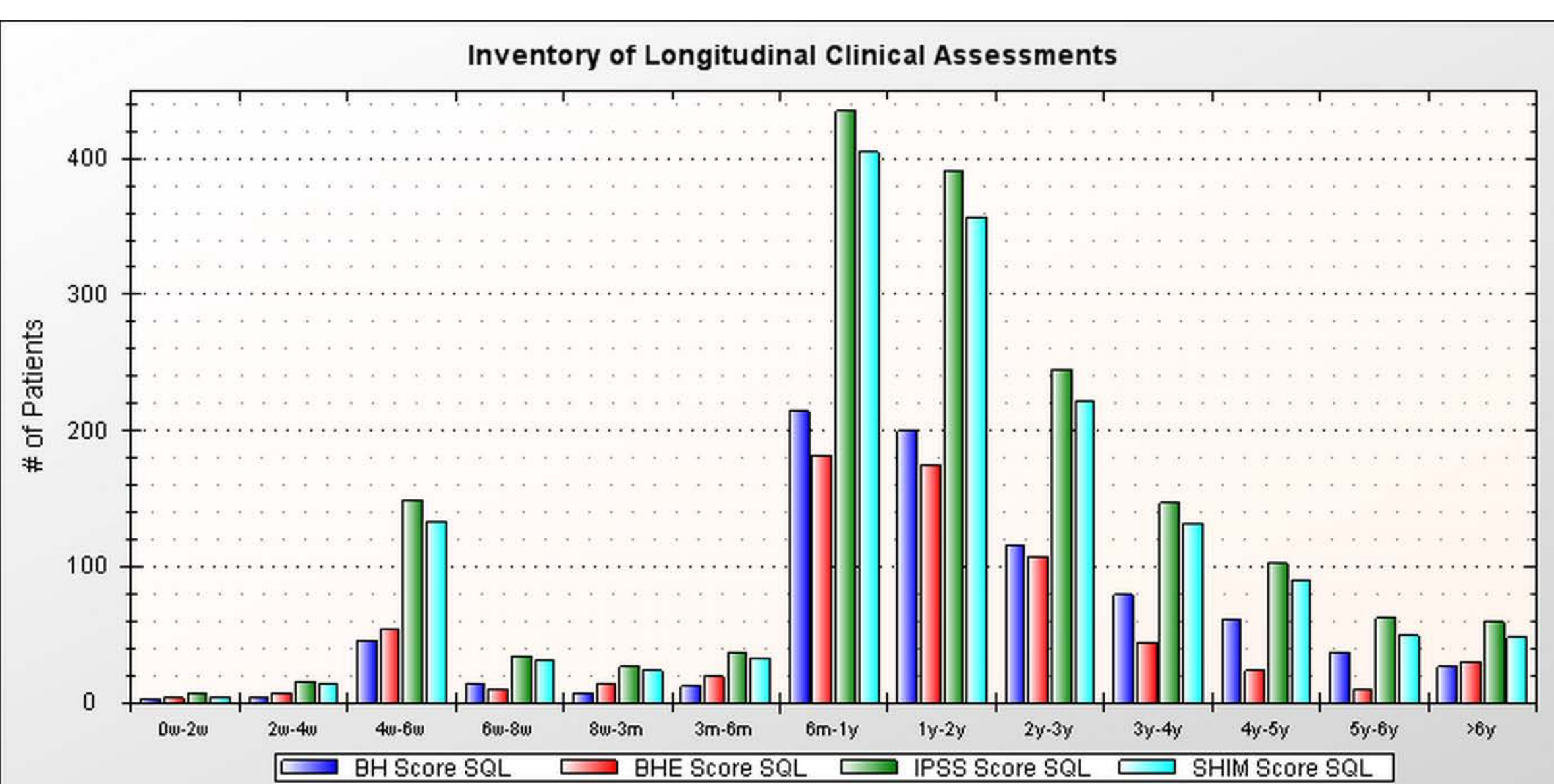Figure 2a. Age and gender distribution among Prostate db

Figure 2b. Inventory of longitudinal QoL among Prostate db

Results- continued

Head and Neck (Fig 3a-b)
- ❖ From 2007- 2015, 486 HN and 293 patients during tx and 2 year follow-up were captured.
- ❖ 198 HN patients with 64 QoL questions
- ❖ Compliance rate of 99%, 94%, 82%, 82% and 88% for: disease status, HPV, QoL, staging and histology respectively since 2013
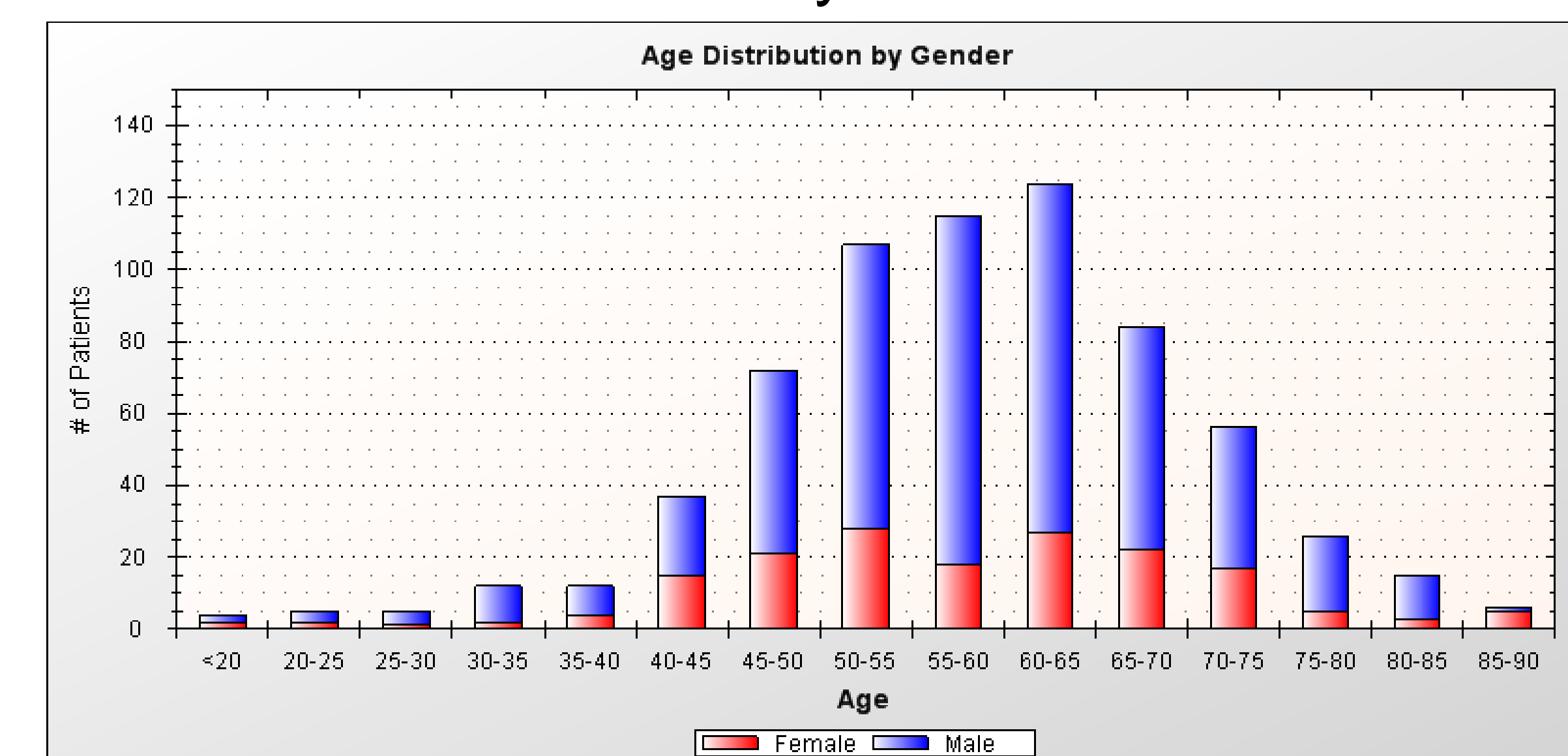- ❖ 62 user visits from May 2015
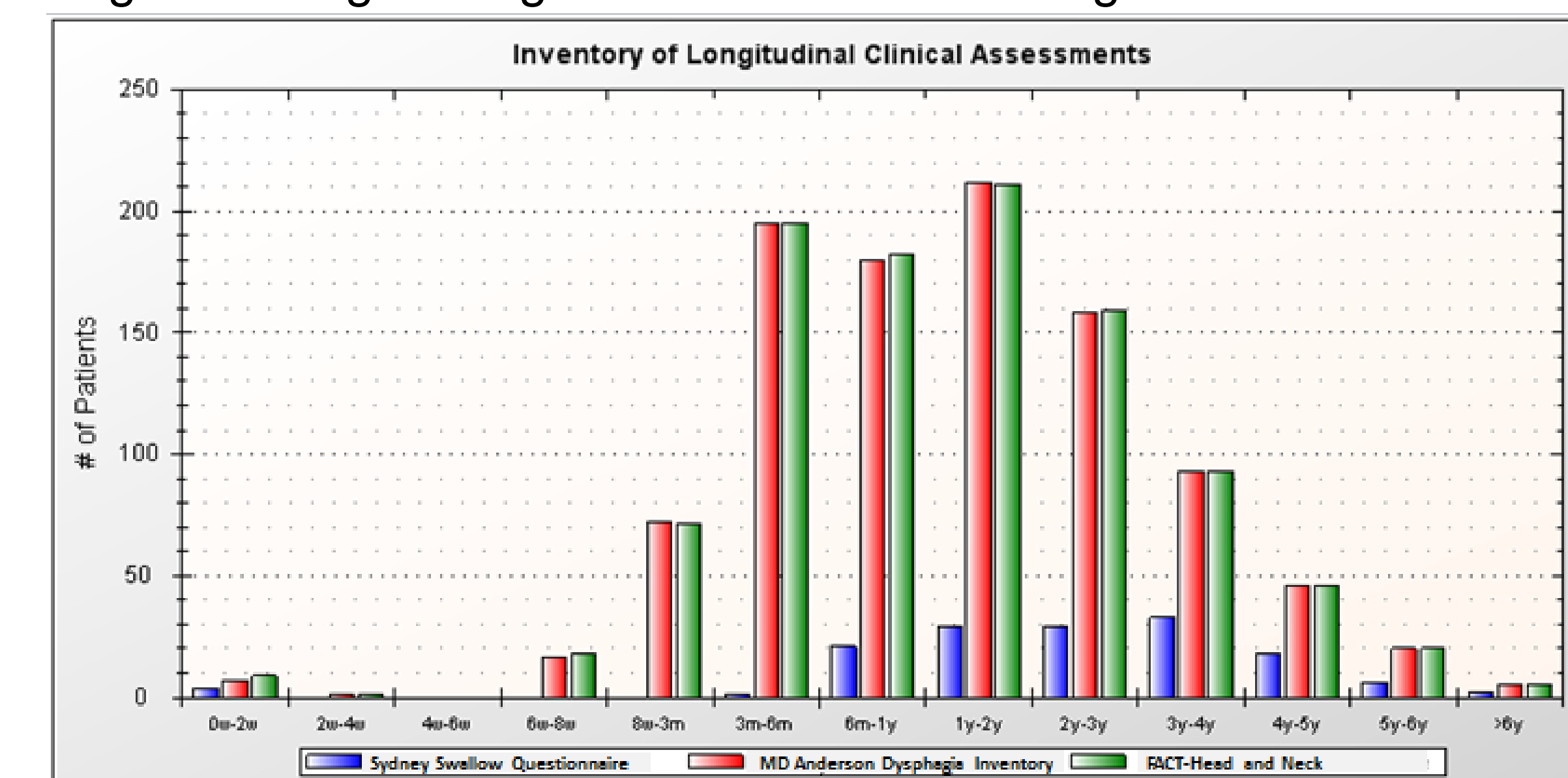
Figure 3a. Age and gender distribution among HN db

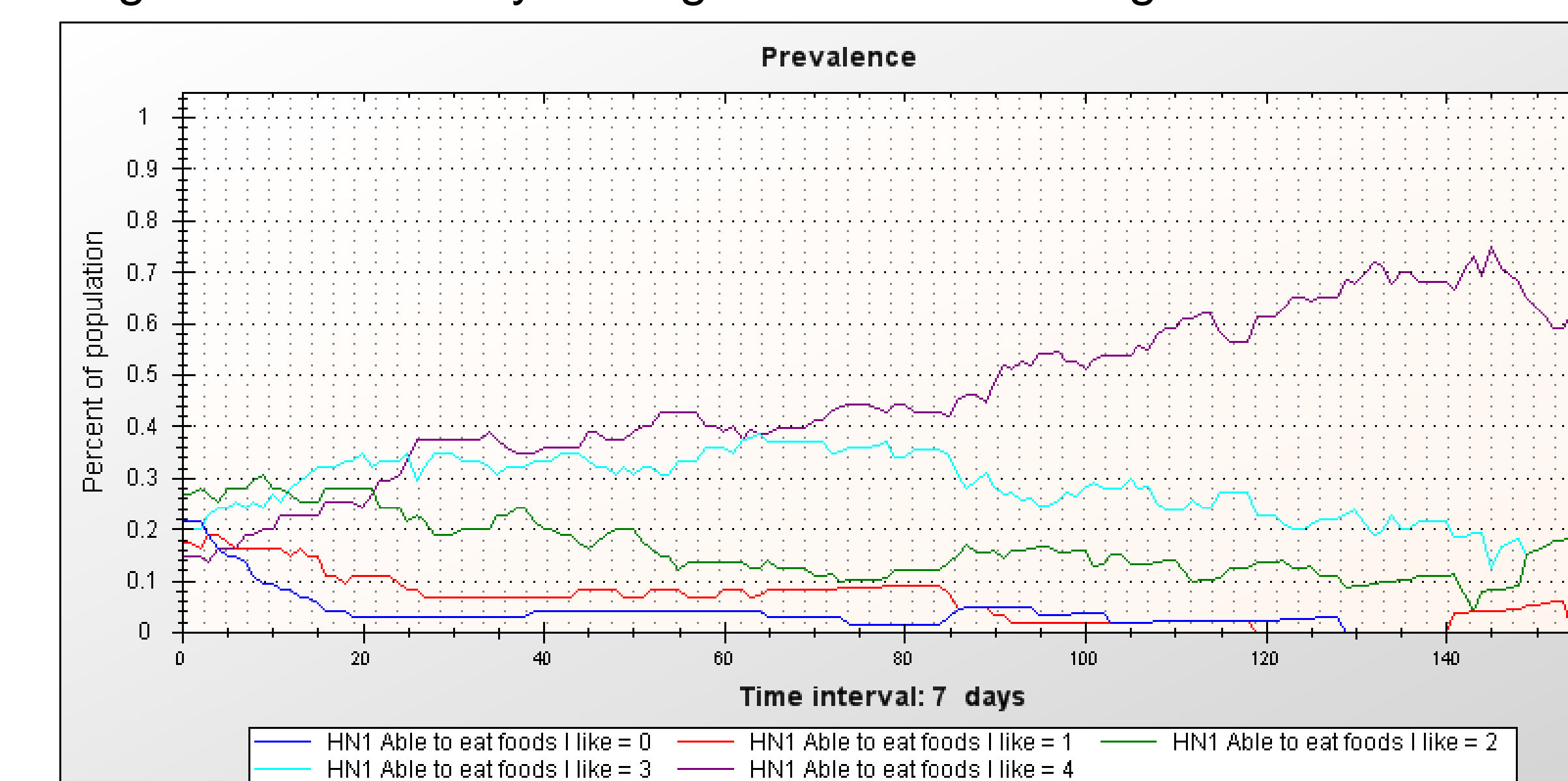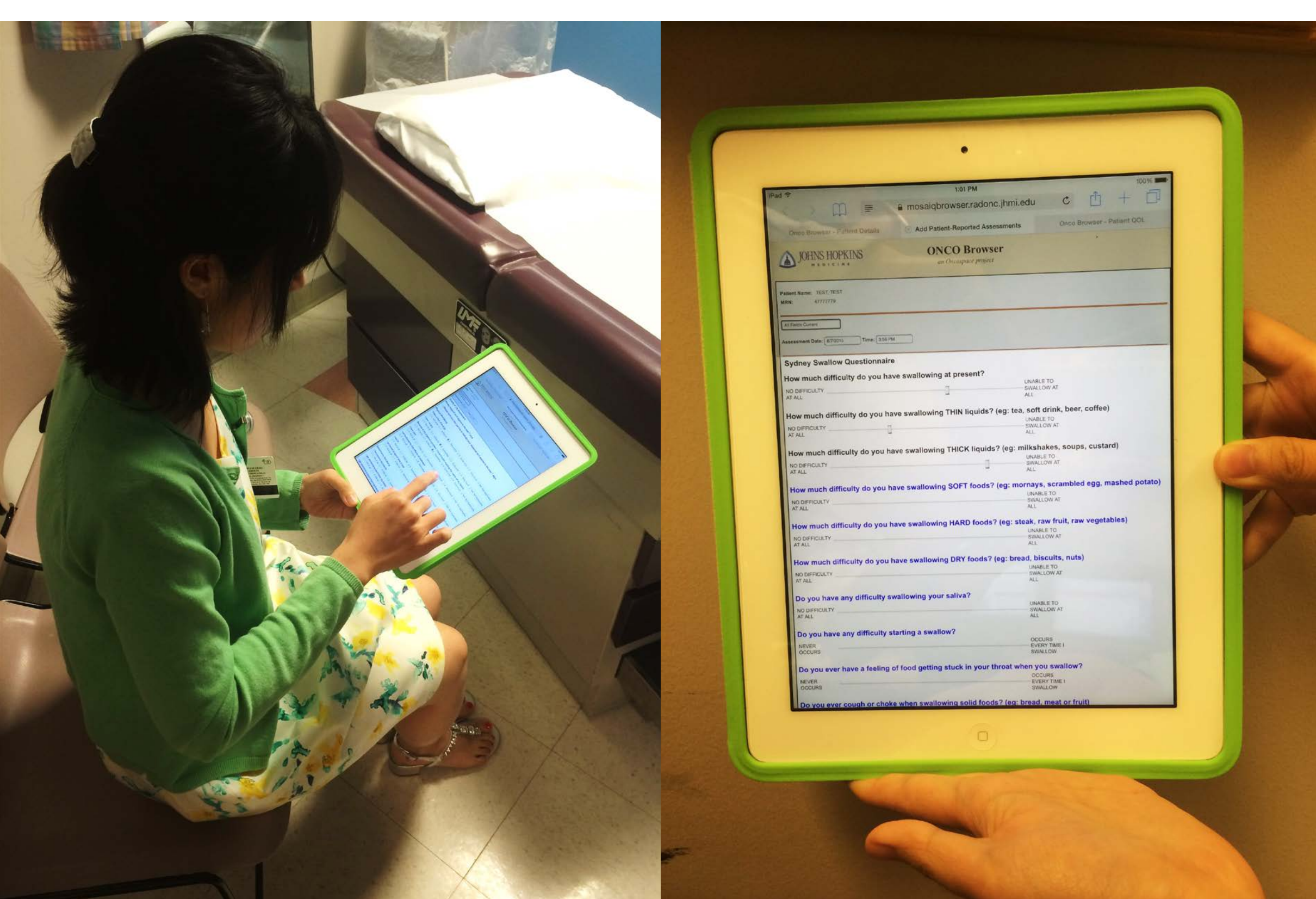Figure 3b. Inventory of longitudinal QoL among HN db

Fig 4. Pts' ability to enjoy food in 3yrs (0: not at all; 4: very much)

Conclusions

- The new culture of prospective data collection facilitated by browser access to the Oncospace
- ❖ Operates seamlessly and is fully adopted in HN and prostate clinic activities
- ❖ Associated with a high data collection rate