

Context

Department of pulmonary diseases of **AZ Delta**, a large regional hospital in Belgium with 5 sites. Patient population: **Lung Cancer patients**

Situation / Background

In our department we had very good survival figures for our lung cancer patients, with survival outcomes in the top 3 on a national level. However, we had no idea of the quality of life of our patients. Besides that we were aware of scientific data that demonstrated **better quality of life and survival when incorporating PROMs in daily care for cancer patients**^{1,2}.



Goal

- Improvement of patients' quality of life
- Increase of patient empowerment
- Involvement General Practitioner in the care process from diagnosis and start treatment
- Early detection and treatment of side effects
- Optimize supportive care
- Early introduction end of life care



to your medical team from a computer.

Weekly questionnaire based on PRO-CTCAE



Implementation of ICHOM Lung Cancer indicators

Intervention

Collection of PROMs and clinical indicators

In April 2017 we started with the systematic collection of Patient-Reported Outcomes by digital device (smartphone/tablet/PC) for Lung Cancer patients with the technology of Awell. Every week we ask patients to fill in a mini-questionnaire about adverse events (coughing, pain, skin rash, ...) and concerns (fear, practical concerns, ...). Recently the questionnaire was reformed using the standard PRO-CTCAE items. Every six weeks patients respond to the EORTC Quality of life questionnaires (QLQ C30 and LC13), included in the ICHOM set for lung cancer patients³. Besides that the ICHOM clinical indicators are collected.

Electronic alerts and follow up by the care team: response to Adverse Events and changes in Quality of Life

Based on the responses alerts are generated to the oncology nurse and one or more other care givers of the **multidisciplinary and transmural care team**, consisting of pulmonary physicians, general practitioners, oncology nurses, psychologists, dieticians, palliative support team, social service and study nurses.

The oncology nurse contacts patients in case of an electronic alert, to see whether an appointment with the physician is necessary or whether the care team can help in the treatment of side effects. When the care team receives an alert on questions about end of life care of psychosocial components, an appointment is scheduled with the appropriate team member.

Digitalization of existing care pathways

The 25+ different paper based treatment schedules were digitalized to reduce manual follow-ups and possible errors. This digitalization makes patients active actors in their own care process.

Results

- Decrease of unplanned admissions (see figure below)
- Better involvement of patients
- High satisfaction of patients, their relatives and the care team about the digital follow-up
- Earlier detection of side effects

"Thanks to the possibility to ask for the support I need with the weekly questionnaire, I feel more a director of my own life" - Patient quote

Decrease of unplanned admissions:

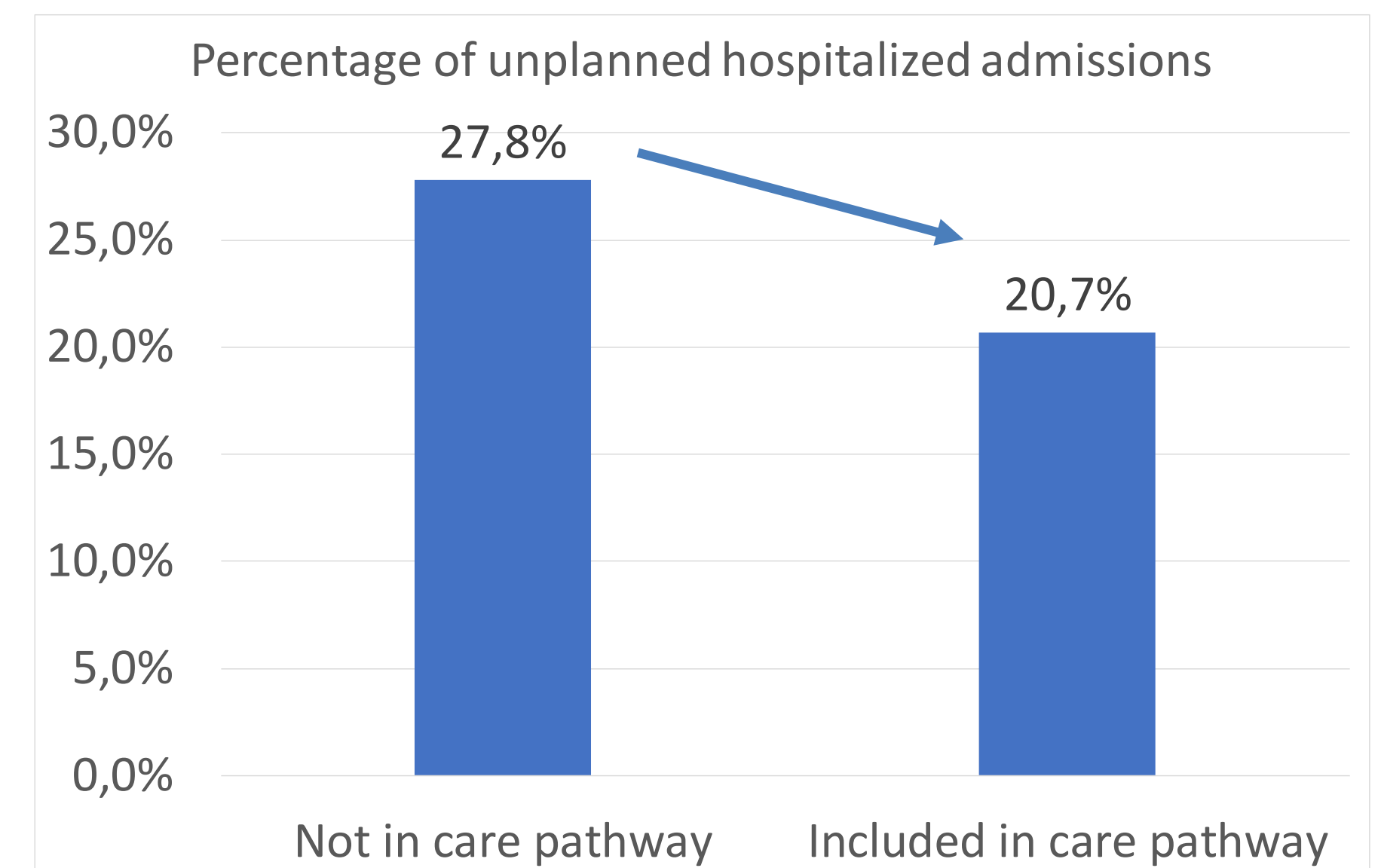


Figure 1: Percentage of unplanned hospitalized admissions of lung cancer patients (Apr. 17-Jan. 19)

Next steps

- Systematic analysis of PROMs and survival will be performed on a population level. Based on the results, improvements will be implemented in an attempt to increase the quality of the delivered care pathway.
- Cost analysis of the whole care process.
- Development of a similar project with a focus on early palliative care and lung cancer patients treated with surgery or radiotherapy.

Lessons learned

- Clinical leadership: engagement of the MD's involved is crucial to redesign the care pathway.
- Good communication with all members of the care team, the patients and their GP's, from the start of the development process is essential for successful implementation.
- Electronic patient records are most often not suited for digital care pathways like this, but those problems can be solved by working with external partners if necessary.

Inclusion of patients (Apr. 17- Jan. 19):

Table 1: inclusion per cancer stage

Cancer stage	Not incl.	Incl.	Total
Stage I	13	3	16
Stage II	11	3	14
Stage III	24	19	43
Stage IV	47	44	91
Stage X	4	2	5
Total	99	71	170

Table 2: inclusion per age

Age (yrs)	Not included	Included
30 - 39	1 (1%)	0 (0%)
40 - 49	6 (6%)	3 (4%)
50 - 59	12 (12%)	15 (21%)
60 - 69	38 (38%)	29 (41%)
70 - 79	32 (32%)	18 (25%)
80 - 89	10 (10%)	6 (8%)
Total	99 (100%)	71 (100%)

Contact

Sarah Misplon
Möbius - Healthcare
Email: sarah.misplon@mobius.eu
Website: <https://www.mobius.eu/nl/>
Phone: +32 489 71 88 54

References

1. Basch, E., et al. (2016). "Symptom Monitoring With Patient-Reported Outcomes During Routine Cancer Treatment: A Randomized Controlled Trial." *Journal of clinical oncology : official journal of the American Society of Clinical Oncology* 34(6): 557-565.
2. Kotronoulas, G., et al. (2014). "What is the value of the routine use of patient-reported outcome measures toward improvement of patient outcomes, processes of care, and health service outcomes in cancer care? A systematic review of controlled trials." *Journal of clinical oncology : official journal of the American Society of Clinical Oncology* 32(14): 1480-1501.
3. ICHOM (2017). "ICHOM Lung cancer data collection reference guide 2.3.1." International Consortium for Health Outcomes Measurement.