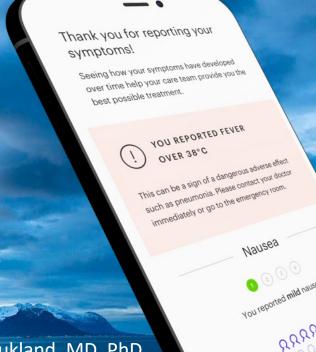
### Implementing e-PRO follow-up of cancer patients treated with immunotherapy for safer cancer care



Ellinor Christin Haukland. MD, PhD





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### Background

- Cancer patients experience twice the rate of adverse events (AEs) compared to other patients, 13 % vs 25 %<sup>1,2</sup>.
- New systemic anticancer treatments causes different types of AEs.
- Incidence of severe AEs<sup>3,4</sup>
  - Combinations of immunotherapies 55 %
  - Monotherapy 16 %

Haukland EC. et. al., Acta Oncologica 2017 Haukland EC. et. al., BMJ Open Qual 2019 Xing P. et al., BioMed Central Ltd.; 2019. Larkin J. et al., NEJM 2015





### **Involving patients to prevent harm**

Patient reported outcomes (e-PROs)<sup>1,2</sup>

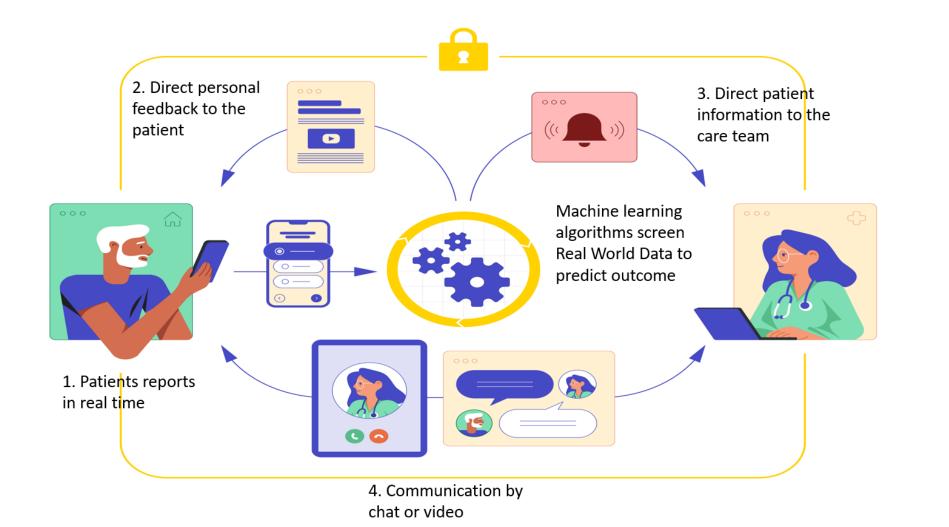
- Discover side effects and deterioration earlier
- Improve quality of life
- Increase survival 5-7 months
- Reduce admissions
- Security to patients, less anxiety, depression, pain?

Symptoms reported through e-PRO correlates with clinical studies<sup>3</sup>



Basch E. et. Al., J Clin Oncol 2016
 Aapro M, et. Al. Support Care Cancer. 2020
 Livanaien S. et al., J Cancer Res Clin Oncol 2019









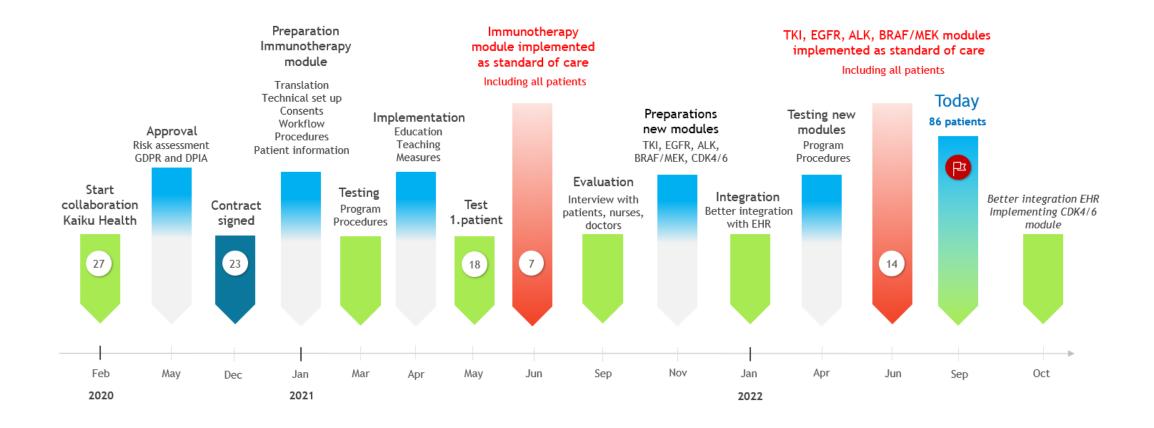
Video of our journey

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### Implementing Kaiku Health as standard of care



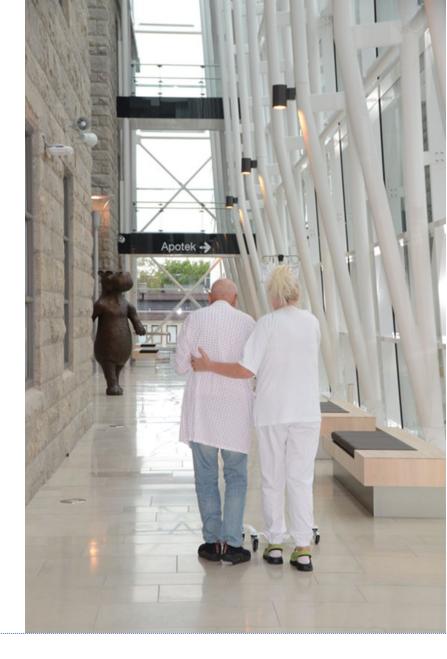
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SHARE Senter for kvalitet og sikkerhet i helsetjenesten Universitetet i Stavanger



### Patients included by 01.09.22

		Number of
		patients
Age	(min - max)	47 - 85
Gend	ler	
	Male	44
	Female	42
Diagr	nosis	
	Pulm	48
	Melanoma	15
	Kidney	4
	Urotel	3
	Colon/rectal	6
	Gastric	2
	Liver	4
	ENT	4
Setti	ng	
	Neoadjuvant	2
	Adjuvant	11
	Palliative	73
Treat	ment	
	Immun mono	42
	Immun IPI/nivo	4
	immun + chemo	29
	immun + Bevacizumab	4
	BRAF/MEK	3
	EGFR/ALK	4
Total	number of patients	86



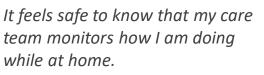






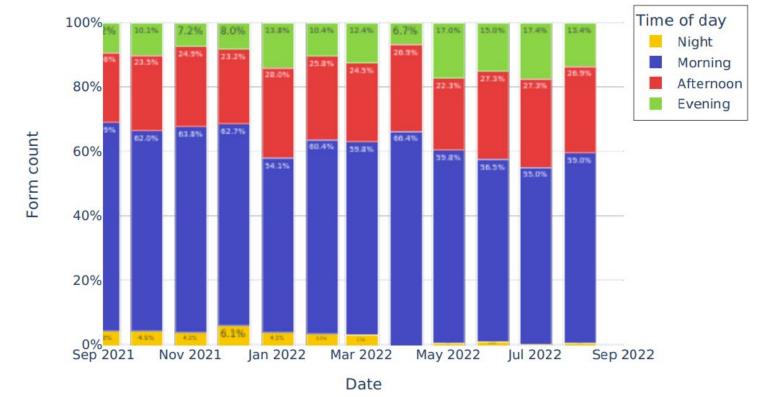
### **Feedback from patients**

Filled forms by submission time of day on monthly level



Quote patient

It is good to sit in peace and quiet and fill in the questions when it suits me. Then it is easier to answer what I really feel. *Quote patient* 



• Freedom

- Feel safe
- Support
- Easier contact
- User friendly





## **Clinical practice**



• Less consultations and planed phone calls

• More efficient flow at the infusion clinic

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### **Everyday clinical practice**

- Follow weight, BP/pulse at home
- Regular quality of life measure (QLQC30)
- Follow symptoms over time
- Prevent symptoms from developing in to severe adverse events.



#### **Closer surveillance of symptoms and QoL**







### **Everyday clinical practice – Decision support**

Symptomintervaller	<	Ju	21		August 2021						temb	er 202	1	(	Oktob		Novembe				
	juni 28 – jul	i 4 ju	uli 12 – 18	ju	ıli 26 – aug	. 1 a	aug. 9 – 15	a	ug. 23 – 2	9	sep. 6 -	12	sep. 20 - 2	26	okt. 4 - 10	0	okt. 18 –	24	nov. 1 –	7 r	10v. 15 - 21
Uke 🗸		juli 5 - 11	j	juli 19 - 28	5	aug. 2 – 8	) a	iug. 16 – 22	2 aug	g. 30 – se	ep. 5	sep. 13 -	19 se	ep. 27 – okt	.3	okt. 11 – 17	<b>'</b>	okt. 25 - 31		nov. 8 – 14	
Diaré		1	1	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
Hoste		0	0	1	1	1	1	2	1	1	1	1	0	0	0	0	1	0	0	0	0
Kløe		0	1	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Kortpustethet		2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Leddsmerter		2	2	2	2	1	2	2	2	2	0	0	1	0	1	1-2	1	0	0	0	0
Nedsatt matlyst		2- <u>3</u>	2	2	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Svimmelhet		2	1	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Utmattelse		2	1	2	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
QLQ30		50				83				83				83				100			

10 symptomer er skjult, fordi pasienten ikke rapporterte å ha dem i dette tidsrommet. Vis alle symptomer.

Metastatic colon cancer – MSI high







### **Everyday clinical practice – Decision support**

	<	Dese	embei	r 2021			Januar	2022			Februar	2022		Mars	2022		April 2022 📑			
Symptomintervaller Uke	nov. 29 – de	29 - des. 5 de des. 6 - 12		9 des les. 20 - 26	. 27 – jan	. 2 jan. 3 – 9	jan. 10 - 16 ja	jan. n. 17 - 23	. 24 - 30 jan. 3	fel 1 - feb. 6	b. 7 - 13 feb. 14 -	feb. 21 - 27 20 feb. 28	mars - mars 6	7 - 13 mars 14	mars 21 -	27 apr. 4 ars 28 - apr. 3	4 - 10 apr. 11 -	apr. 18 - 24 17		
Hodepine	0	0	0	0	0	0	0	0	0	0	0		0		1	0	0			
Kløe	0	0	0	0	1	0	0	0	0	0	0		0		0	1	0			
Kortpustethet	0	0	0	0	0	0	0	0	0	0	0		1		0	0	0			
Kvalme	0	0	0	0	0	0	0	0	0	0	0	•	1	•	0	0	0	•		
Leddsmerter	0	0	0	0	0	0	0	0	2	1	1		0		0	0	0			
Nedsatt matlyst	0	0	0	0	0	0	0	0	0	0	•	•	2		0	1	2	•		
Svimmelhet	0	0	0	0	0	0	0	0	0	0	0		1		1	2	2			
Uklart syn	0	0	0	0	0	0	0	0	0	0	•		0		2	0	2	•		
Utmattelse	0	0	0	0	0	0	0	0	0	0	0		0		1	2	2			
QLQ30		33	0			42			- (	25			42			25				

9 symptomer er skjult, fordi pasienten ikke rapporterte å ha dem i dette tidsrommet. Vis alle symptomer.

Metastatic NSCLC

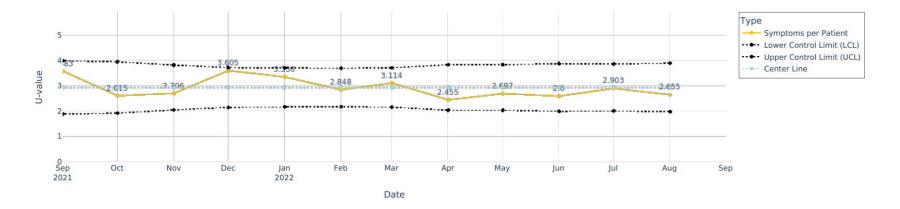


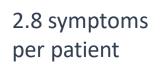




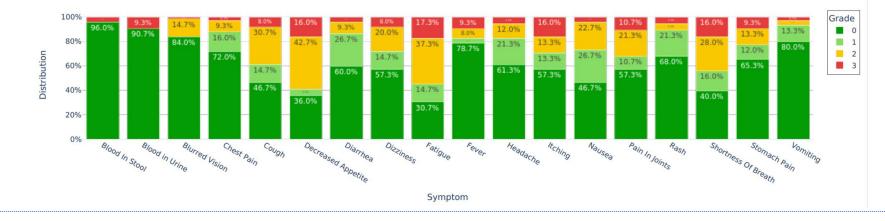
### **Incidence of symptoms – all grades**

#### Symptom u-chart with grades 1, 2, and 3 on monthly level





Distribution of the worst symptom grade reported by each patient



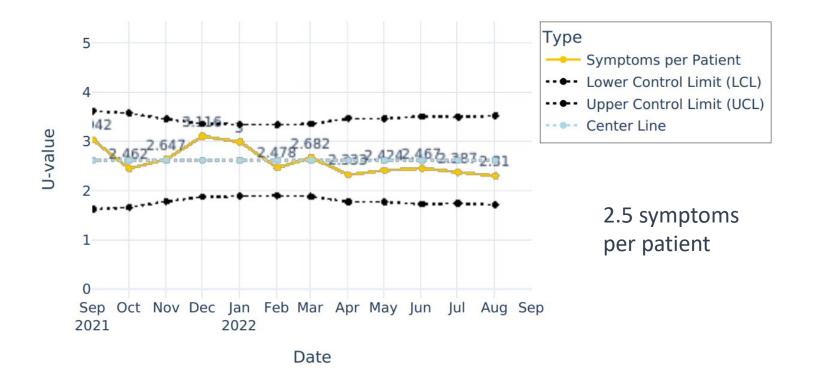


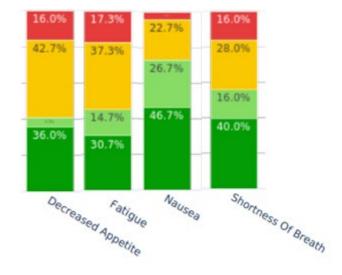




### Incidence of mild symptoms – grad 1 and 2

#### Symptom u-chart with grades 1 and 2 on monthly level





Fatigue, decreased appetite, nausea and shortness of breath are the most common less severe symptoms.



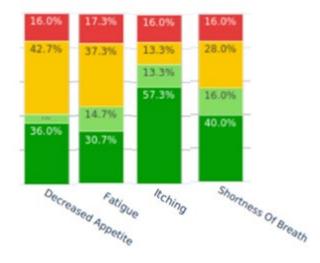




## Incidence of severe symptoms – grad 3

#### Symptom u-chart with grade 3 on monthly level





Fatigue, decreased appetite, itching and shortness of breath are the most common adverse symptoms.







# Conclusion

- Shift in mindset from reactive to a proactive way of reacting to symptoms and patient's needs
  - enables immediate response to prevent potentially serious AEs
- Good patients satisfaction, feel safe and enhance involvement
- For healthcare personnel
  - makes clinical work more efficient
  - provides real time decision support











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