



Successful implementation of Align RT for Head & Neck/ Tattooless applications



Today's workshop

Shared experiences from successful deployments to help with your implementations

Practical skills & strategies for managing the human elements of change

Activities & discussions with peers and experts to provide specific actions for your project

Contacts and resources for further support and information



Head and Neck Implementation

Lincoln County Hospital

Jacob Curran

Nicola White

Project Timeline

2020



Extremely claustrophobic head and neck patient. Modified closed-faced mask with AlignRT for positioning and monitoring.

2021-
2022

Several ad-hoc patients with severe claustrophobia followed the same process used in 2020. Including one palliative larynx patient with no shell whatsoever.

2023

Head and Neck consultants were approached for authorisation to complete the 15 patient pilot study. Data from the prior ad-hoc patients was used as supporting evidence.

15 patients with an open-faced mask positioned with SGRT were compared against 15 patients in a closed mask with no SGRT.

2024

100% Open masks with SGRT for positioning and monitoring, with daily CBCT image guidance from January.

Pilot study methodology repeated on 15 patients from mid 2024 to ensure consistency of results.

Following success of the audit a three-stage rollout was planned.

Stage 1	Stage 2	Stage 3
25% Open	50% Open	100% Open

Stakeholder Input

- Head and Neck Consultants - They need reassurance that immobilisation won't be compromised.
- Radiographers - We ran multiple training/feedback sessions and spent time ensuring everyone knew why we were making the change and that they were comfortable with the process.
- Physicists - Should be consulted early on to contribute to risk assessments.

Key Considerations

- Right skills mix, open faced masks require more hands to make in the first instance. Designation of roles and responsibilities throughout the making process.
- Assessment of head rests, crucial to reproducibility. Patient specific head rests required in over 50% of cases.
- Monitoring throughout treatment of potential swelling over the face, especially if treatment area is within the open face aperture.

Lessons we learned

- Inform all areas of the pathway – Seems obvious but there were areas such as H&N CNSs that we forgot to tell until late on.
- Consider bolus material – Particularly for cases where the bolus is placed within a traditional ROI. If the bolus is SGRT compatible you can still monitor that area well.
- Build AlignRT's extra features into the workflow. Initially some radiographers thought the use of Postural video or deformation was just a suggestion if needed but actually they are key in ensuring positioning is accurate.

Positive outcomes

- Reduction in patient reluctance to have a mask due to claustrophobia, our use of sedatives has significantly reduced.
- Patients are finding the masks more comfortable and are overall tolerated better.
- We have seen a reduction in calls to treatment issues connected to mask fit or mask being too tight for patient to tolerate.

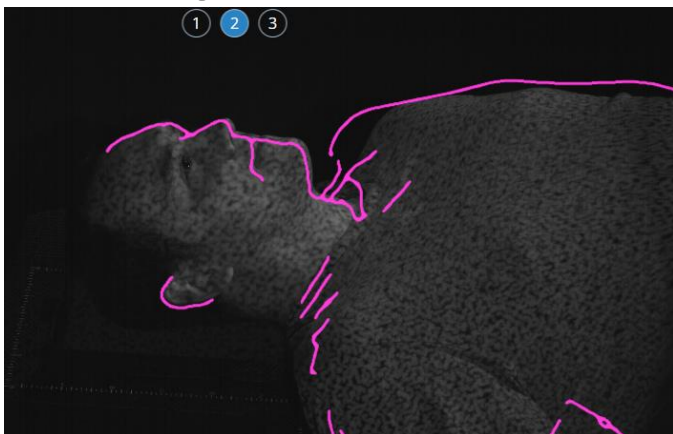
Positive outcomes

- Communication with patients is easier, we can maintain eye contact and assess for signs of distress and reassure the patients.
- Less anxiety about the pre-treatment scan as they are told during consent that it will be open mask.
- Tools like deformation allow us to visualise areas of weight loss or swelling.

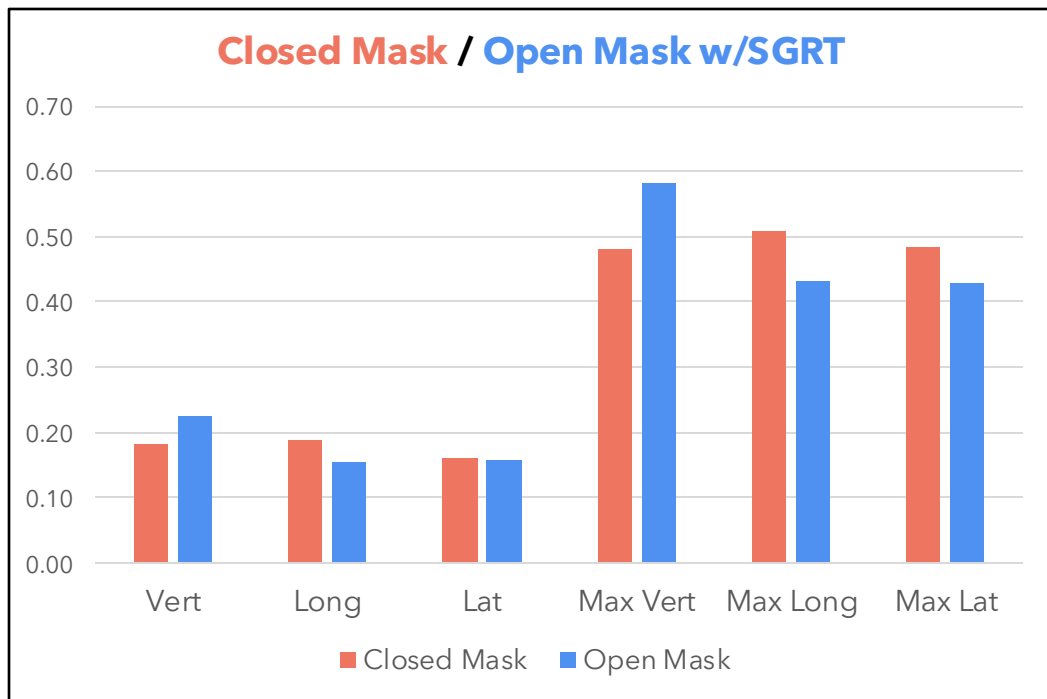
Problem-based solutions

Shoulder Positioning

Postural video used to guide shoulders into position before mask goes on.



15 Patient Pilot Results



Number of Re-setups after imaging over 420 fractions (2023 cohort)	
Open Mask	Closed Mask
7/420	23/420

Number of Re-setups after imaging 2024 over 420 fractions (2024 cohort)
Open Mask
2/420

H&N Open Face Mask Implementation

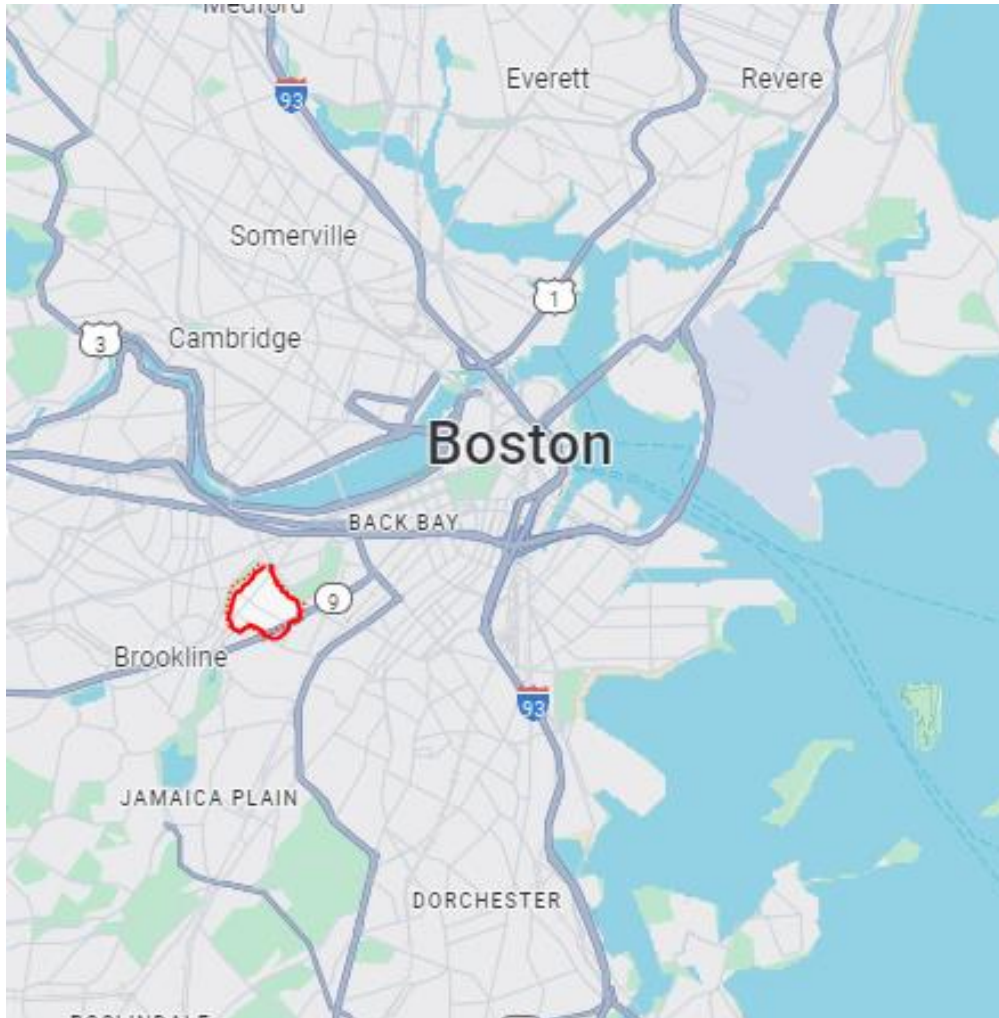
Lauren Conway MS, RT(T)

Chief Radiation Therapist

Dana-Farber/Brigham & Women's Cancer Center

Boston, MA, USA

November 2024

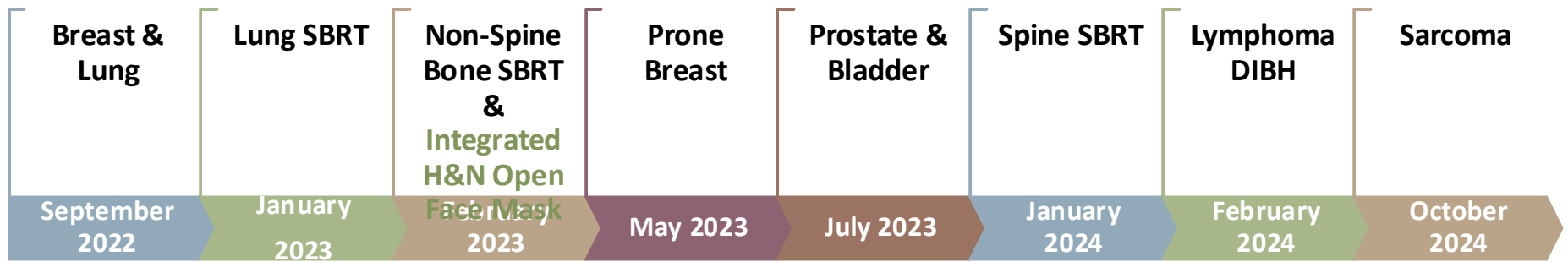


Dana Farber/ Brigham & Women's Cancer Center, Boston, MA, USA

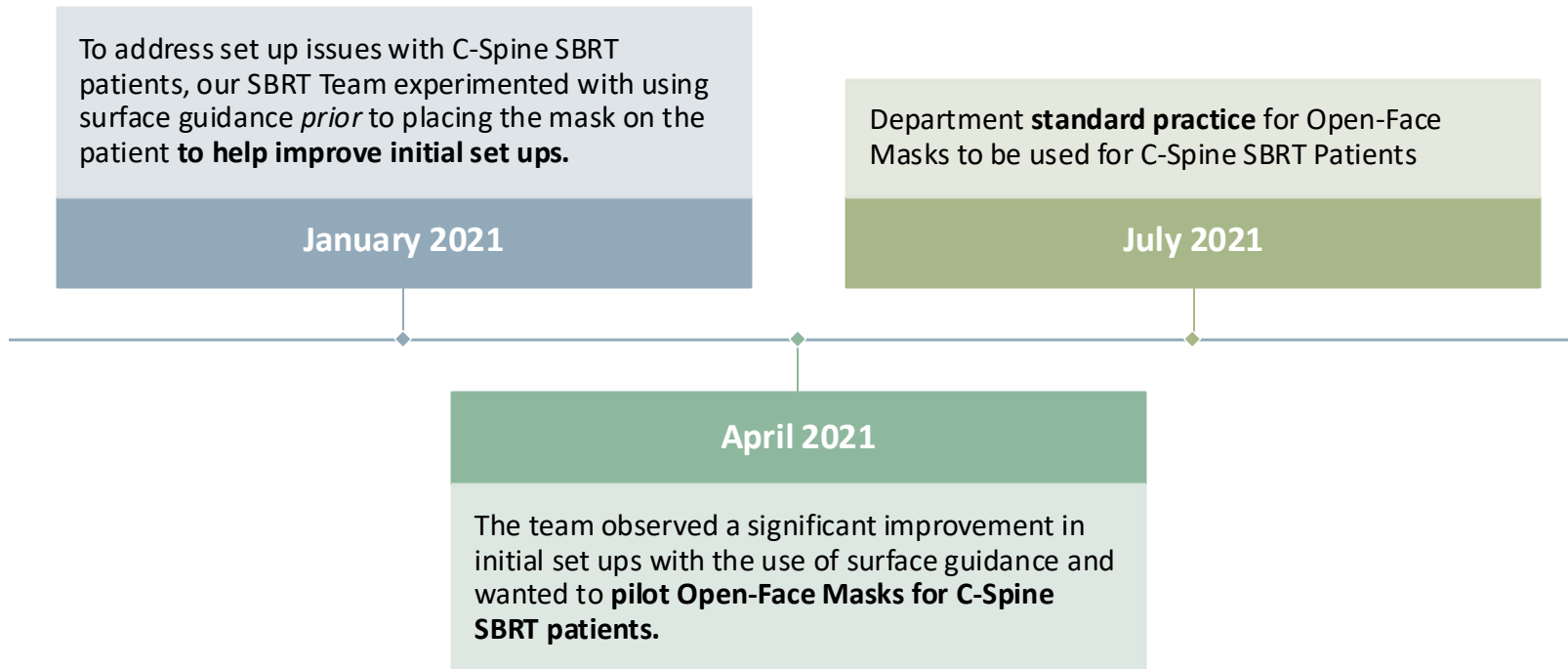
- FY 2023- Treated 50,283 patients
- ~1, 500 secondary spine patients
- ~6k Head & Neck patients

- 6 Standard Linacs- 5 w/ SGRT
- 1 Ethos/Halcyon- w/ SGRT
- 1 MR- Linac
- 3 CT Simulators
- 1 MR Simulator
- Cobalt 60
- 2 HDR Units

Tattoo-less Cases at DFBWCC



The Start of Open-Face Masks at DFBWCC



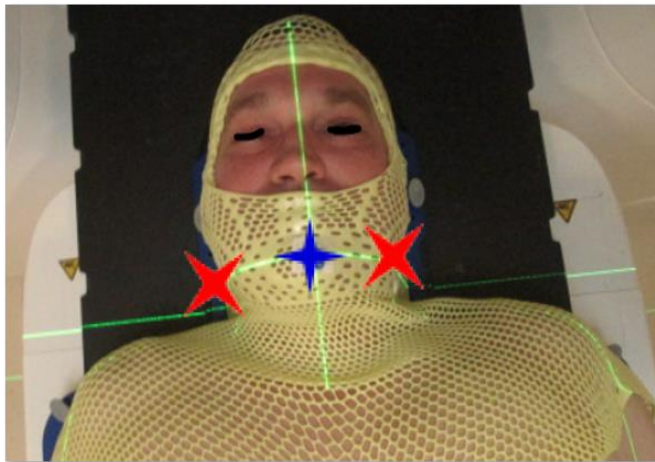


Open-Face Mask w/ SGRT Workflow

ROI- Ensure covers entire opening, not on mask

Inside the Room:

1. Patient lies on couch, rests in head-cup
2. Turn on AlignRT
3. RTTs move table to coordinates at isocenter
4. Move patient head/shoulders into position with deltas & postural video
5. Put on mask
6. Shift table so translational deltas are in tolerance.
7. Move head to align rotational deltas (pitch, roll, rotation)
8. Shift table again to get translational deltas into tolerance.



H&N Clinical Rationale

01

Increase in RTT feedback regarding difficulty with H&N set ups.

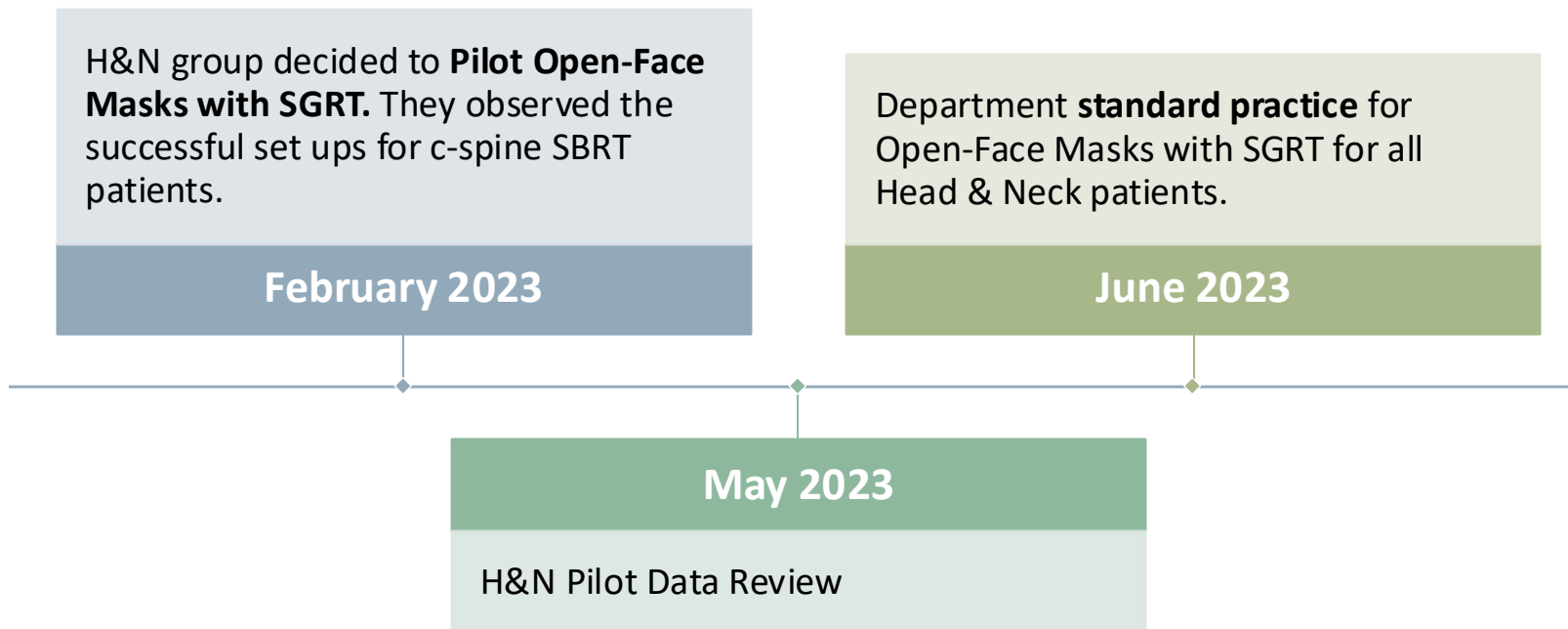
02

Observed increase in adjustment requests on patient films by physicians.

03

Department push to move towards CBCT Daily for H&N patients, thus needing to improve initial set up to remove kV imaging.

Open-Face Mask Timeline for H&N Patients



H&N Pilot Data Review

Performed Retrospective Closed Mask Data Review from June to December 2022

Sample size: 52 patients

(Data included: Average acquiring image to Beam on Time, Average Shoulder Pulls, Average MD Image Change Requests, Total Fractions)

Open-Face Mask with SGRT Data Collected March to May 2023

Sample size: 39 patients

(Data included: Average acquiring image to Beam on Time, Average Shoulder Pulls, Manual Adjustments, Shifts, Average MD Image Change Requests, if Machine had 6DoF capabilities, Total Fractions)

Observed Clinical impacts Using open face mask + SGRT

01

Reduction in
Image to Beam
on Time

02

Reduction in
Manual
Shoulder Pulls

03

Reduction in
MD Image
Change
Requests

Lessons Learned

1. For an optimal ROI- Simulation Team needs to ensure the opening of the mask includes:
 - Patients nose and forehead
 - The lateral portion of the opening goes to hairline/ear
2. Treatment RTTs must draw the ROI in the entire opening of the mask but cannot include the mask itself.
3. Team is currently working on reducing the mask portion on the chest to allow for the team to use postural video more with aligning shoulders.

THANK YOU!

Lauren Conway MS, RTT

lmconway@bwh.harvard.edu



The power of emotion in driving effective change

People don't resist change, they resist being changed

Peter Senge author of "The Fifth Discipline"

Making your own connections

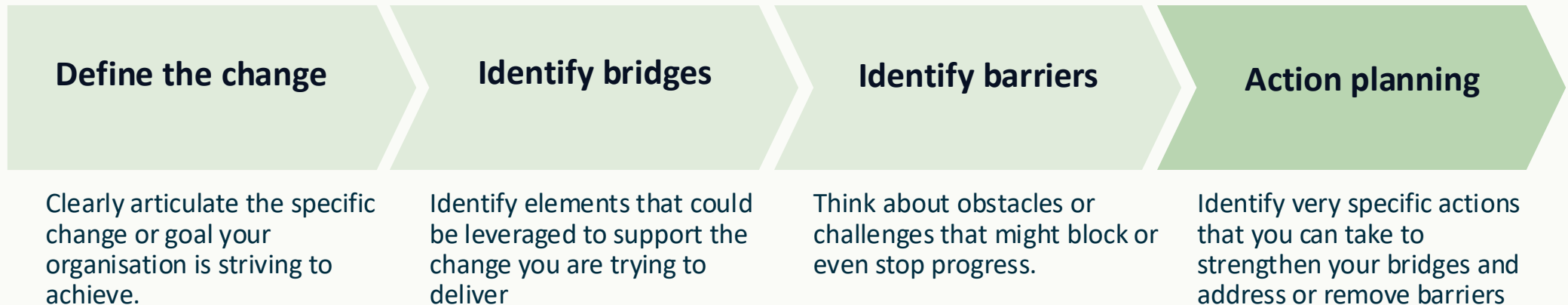
Activity

- Why is this workshop important to me?
 - In as much detail as possible
 - As many as reasons as possible
 - *2 minutes*
- Thinking about the legacy treatment walk “A mile in my shoes”
 - How are you feeling ahead of the treatment?
 - How do you feel during the treatment?
 - How are you feeling post-treatment?
 - *5 minutes*

Capture the thoughts on the Post-It notes on the tables and stick onto the relevant flip chart.

Table discussion.

Managing the change - bridges and barriers



Critical success criteria:

- Be as specific as possible through all stages
- Use this as a mechanism for involving and consulting other stakeholders
- Treat as an evolving process as things will be constantly changing

Bridges and barriers

Activity

- What are the bridges supporting your implementation?
 - How will they help?
 - What can you do to turbocharge them?
 - Specificity is key
- What are the barriers? (within your control & influence)
 - Can any of the bridges help you overcome these barriers?
 - If so how?
 - What other actions can you take to overcome these barriers?
 - Who else can help you?

Reflect personally on your project and capture your insights.

Discuss and compare with someone on your table.

Managing the change - change vs transition

Bridges model for change

Change

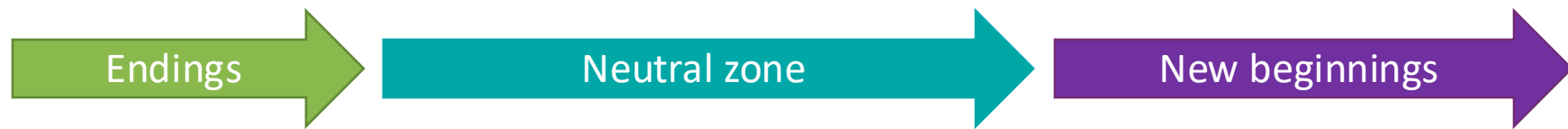
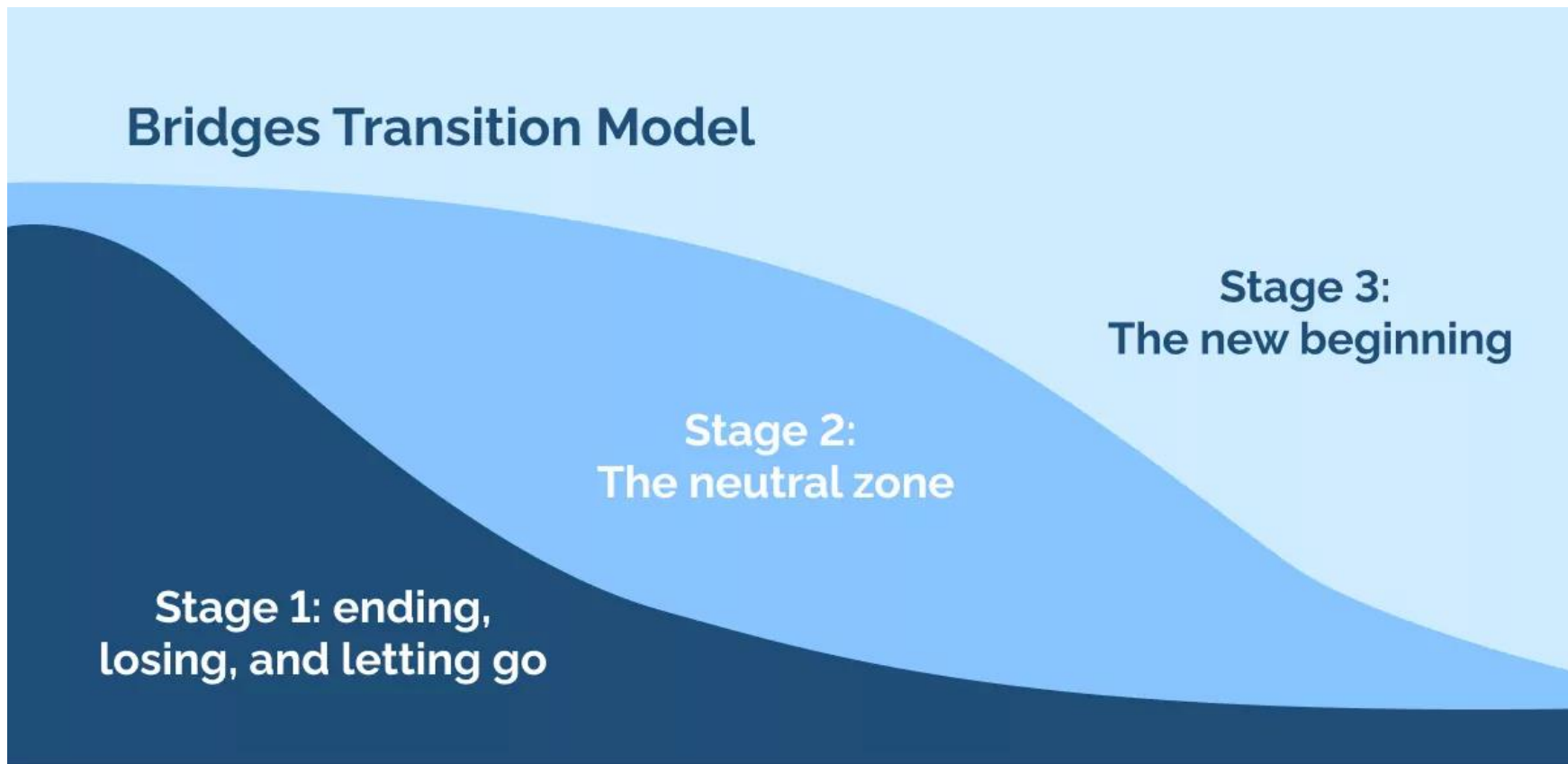
is an event. It's a restructuring, a hotel opening or closing, a colleague leaving or a new piece of technology being turned on

vs

Transition

is the **psychological process** people go through in order to adapt to the change. It's complex and messy!

Transition and the change curve



Adapted from the Bridges Transition Model

Endings, neutral zone, new beginnings

Activity

- Identify 2 or 3 critical stakeholders on your implementation journey
 - Who are they?
 - Where are they on the transition journey?
 - What evidence do you have that supports that?
 - What actions can you take to move them into the *New beginnings* phase?
 - Who can help you with these actions?

What other support would be helpful for your implementation?

Personal action planning

Activity

- Reflect personally on the following:
 - What 2 things did you learn from your peers in the opening presentations that is helpful for your implementation ?
 - How can you use an emotional connection to strengthen stakeholder connections?
 - What actions are you going to take from the 'Bridges and barriers' model
 - What actions are you going to take from the 'Endings – neutral zone – new beginnings' model?

What other support would be helpful for your implementation? – Capture on Post-Its

Wrap-up

- Shared experiences from people who have already been on your journey
- Strengthening success by connecting to people's emotions
- Bridges and barriers to provide a framework and some insight into your implementation
- Change vs transition as a model to identify where people are on the journey
- Actions to take away
- Support moving forwards

Supporting you on your journey

We are inspired by the work you do and your partnership with Vision RT and the positive impact you have on your patients lives.

If you have questions related to the change frameworks we covered as you work through your implementation journeys then we would be happy to jump on a call.

Andy MacGovern:

<http://linkedin.com/in/andymacgovern>

Karen Ward:

<http://linkedin.com/in/karen-ward-256a489>



The Art of Work



Master the Workplace

www.theartofwork.uk.com