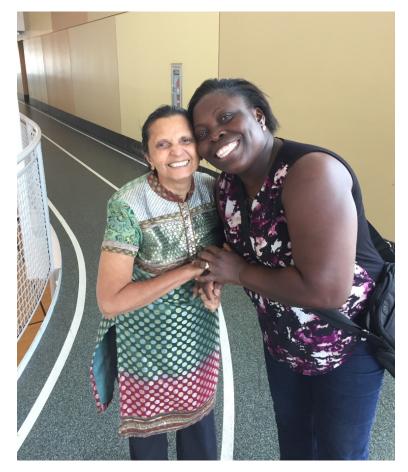
My Journey with Sumi

COLLECTION OF ESSAYS — FEB 14.2013 TO APR 27.2021

MY JOURNEY WITH SUMI

First, I must acknowledge the people that care deeply for me and Sumi.







Selina



Kailash

Without their professionalism and love, Sumi's Journey would be much different.

MY JOURNEY WITH SUMI

A collection of 25+ essays.

All essays are standalone by themselves and can be read individually. In 2013, at age 59, my wife Sumi was diagnosed with younger onset Alzheimer's disease. I had been happily married to Sumi for more than 40 years but done little caregiving. I hoped for a misdiagnosis, read all the books I could and eventually turned to soul searching and reflection to get us both through the first three years of our journey. At first, I wanted to change Sumi's behavior then I realized I needed to change to best meet Sumi's needs.

I first wrote formally about Sumi's disease in 2015 and with the encouragement of confidants, I continue writing a WhatsApp journal called, "My Journey with Sumi". It allows me to channel my feelings, document changes, and share a glimpse into our lives with close family and friends. I write "in the moment" without much dwelling on it or fine tuning, to help process my emotions. I find it therapeutic.

Sumi's Bowel Movement is the latest essay.

MY JOURNEY WITH SUMI ESSAY #28

Sumi's Bowel Movement

Table of Contents

1. Inspiration

Mantra for Continuous Improvement

2. Sumi's 9th Year of the Disease

The Stages of Alzheimers Disease

3. Charting Methods &Control Data

Our Process

4. Call to Action

Variations in BM

5. Experiment Data

Results of multi-variable testing

6. Take Aways

Lessons Learned

7. Closing Thoughts

I'm Here to Help You on Your Loved One's Journey

01 Inspiration

INSPIRATION

"If you can't measure it, you can't improve it."

PETER DRUCKER

INSPIRATION

"If you can't measure it, you can't improve it."

PETER DRUCKER

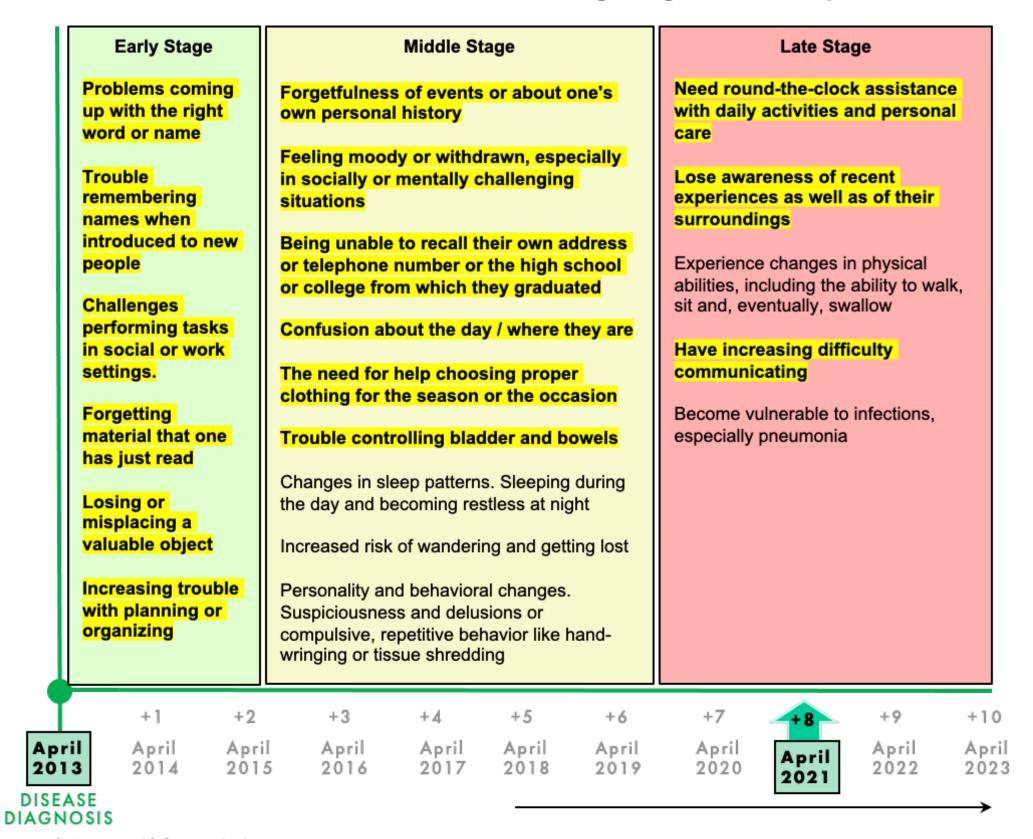
As a mechanical engineer, in the college we studied design and working of the Internal Combustion (IC) engines. Like any well-tuned machine, we studied the efficiency of the IC engine by its input (gasoline or diesel) and its output (exhaust gases). You can tell a lot about the IC engine by studying the exhaust gases. For example, the exhaust gases are mainly of two types: inoffensive and pollutants contaminants. The first are Nitrogen, Oxygen, Carbon Dioxide, water vapor and Hydrogen. The Pollutants are mostly Carbon Monoxide, Hydrocarbons, Nitrogen Oxides and Lead. One of the main aspect of a well-tuned engine is air to fuel ration. Too much air and low fuel makes engine under performs where as rich fuel and low air produces more pollutants because of incomplete combustion.

8

02 Sumi's 9th Year of the Disease

9th Year of Alzheimers

Sumi exhibits behaviors highlighted in yellow



^{*} Source: Alzheimer's Association

STAGE 3

Sumi is in the late stage of her disease per Alzheimer's Association's 3-stages.

ROUND-THE-CLOCK CARE

Sumi needs assistance with her daily activities and personal care. She cannot go to toilet by herself for her BM. She wears sanitary briefs (diapers).

A NEW CHALLENGE EMERGES

In 2018 and 2019, Sumi's Bowel Movement (BM) did not follow any pattern.

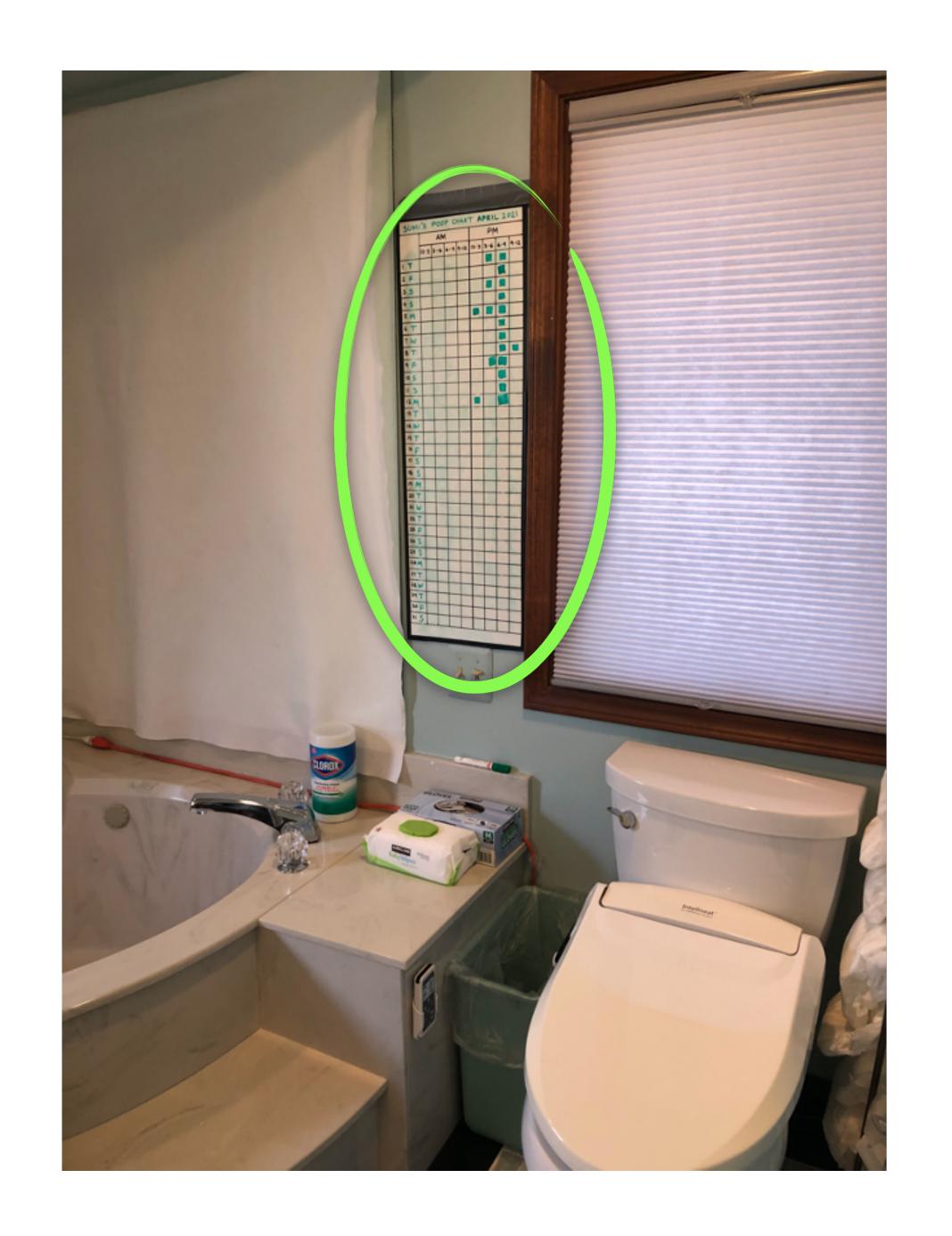
About half the time she would have BM in the middle of the night which required cleaning and changing her.

This disrupted our sleep.

O3 Charting Method & Control Data

Fast forwarding...

- Since Sumi was not able to verbally express her needs, discomfort or pains, as her caregiver, I managed different types of input and output. She did not eat by herself and her food was prepared based on what I thought would be the best well-balanced meal for her.
- From early 2018, I began monitoring her BM as her food intake was fairly regular but output wasn't.
- BM monitoring also served as a good tool to communicate with Sumi's primary care physician (PCP).
- As shown in the photo, I crafted a white board chart to capture her BM on a monthly basis. Every BM is noted on the board with a solid square to indicate the day and time of her BM.



Data Charting

BM CHARTED ON 24-HR CYCLE

AM (12:00 am to 11:59 am)

PM (12:00 pm to 11:59 pm)

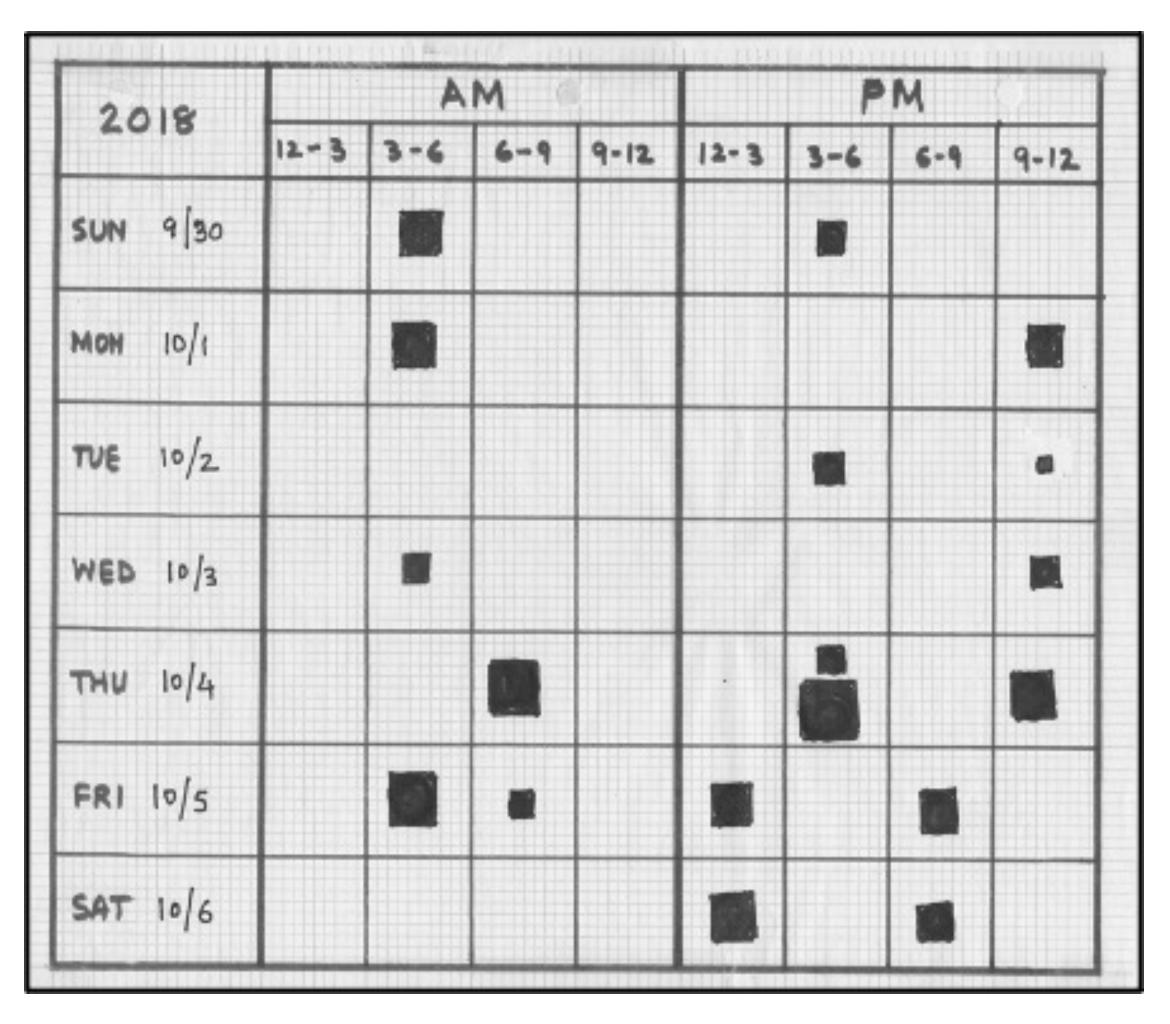
PATTERNS DEVELOPED

BM was (almost) equally divided between AM and PM. Morning BM's fell between 3am and 6am.

CLEANING & CHANGING

Early morning cleaning disrupted her sleep and we had trouble falling back to sleep.

Size of Square = Quantity of BM



04 Call to Action

OH NO!

On October 8th, 2018, a very warm day, Sumi was walking with us in the Rochester Park.

She side stepped on the edge of a concrete walk-way and twisted her right foot causing a hairline fracture in her ankle.

6 weeks of Recovery

- Sumi had to wear a removable boot.
- She was moved around the house and outside the house in a wheel chair.
- After the 6 weeks, she was back on her feet and resumed walking again.



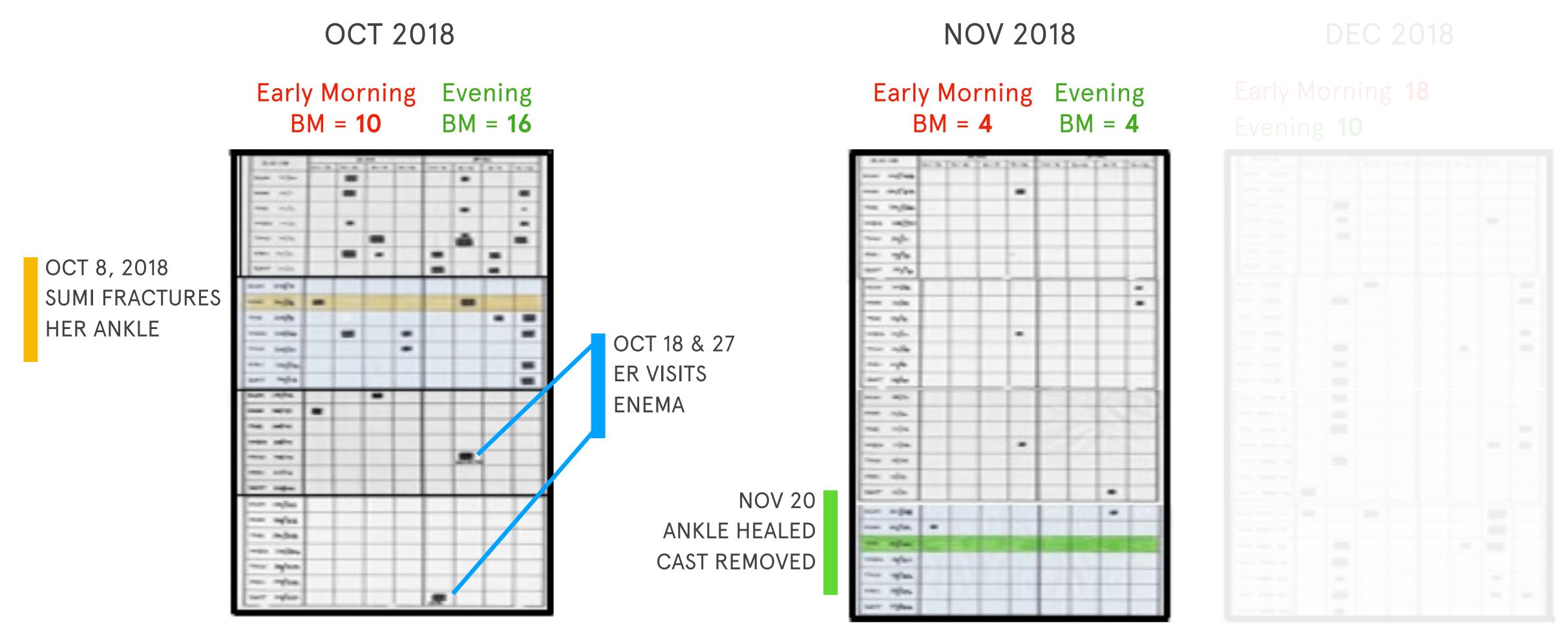
NEW BM PATTERNS

However, during recovery, she slowly reduced her eating to only a small quantity of food.

With no intake, there was no output.

On two occasions we had to take her to the Emergency Room to receive an enema to extract BM.

BM Data during Recovery



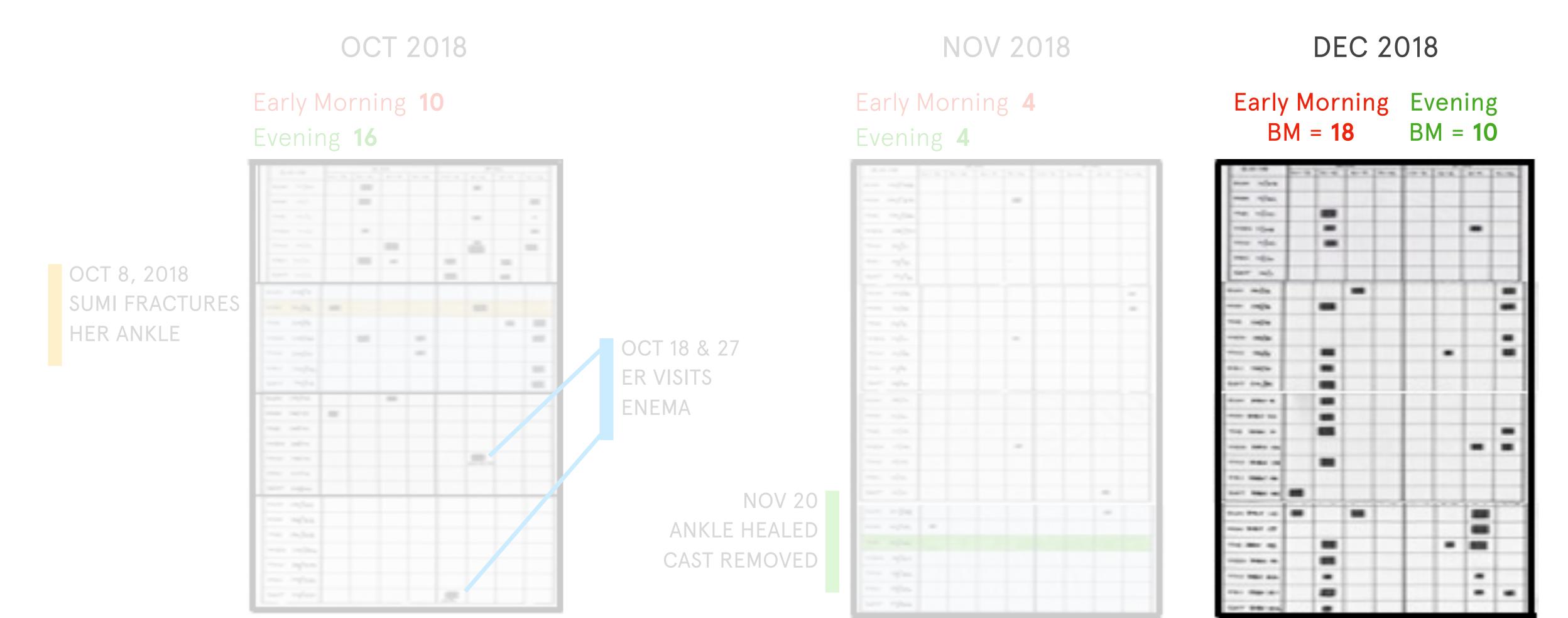
EFFECTS ON SUMI'S BM

After 6 weeks, Sumi lost ~25 lbs.

I feared her decline would not be reversible.

She began eating more food but it took another week for her BM to come back to her pre-fracture status.

BM Data during Recovery

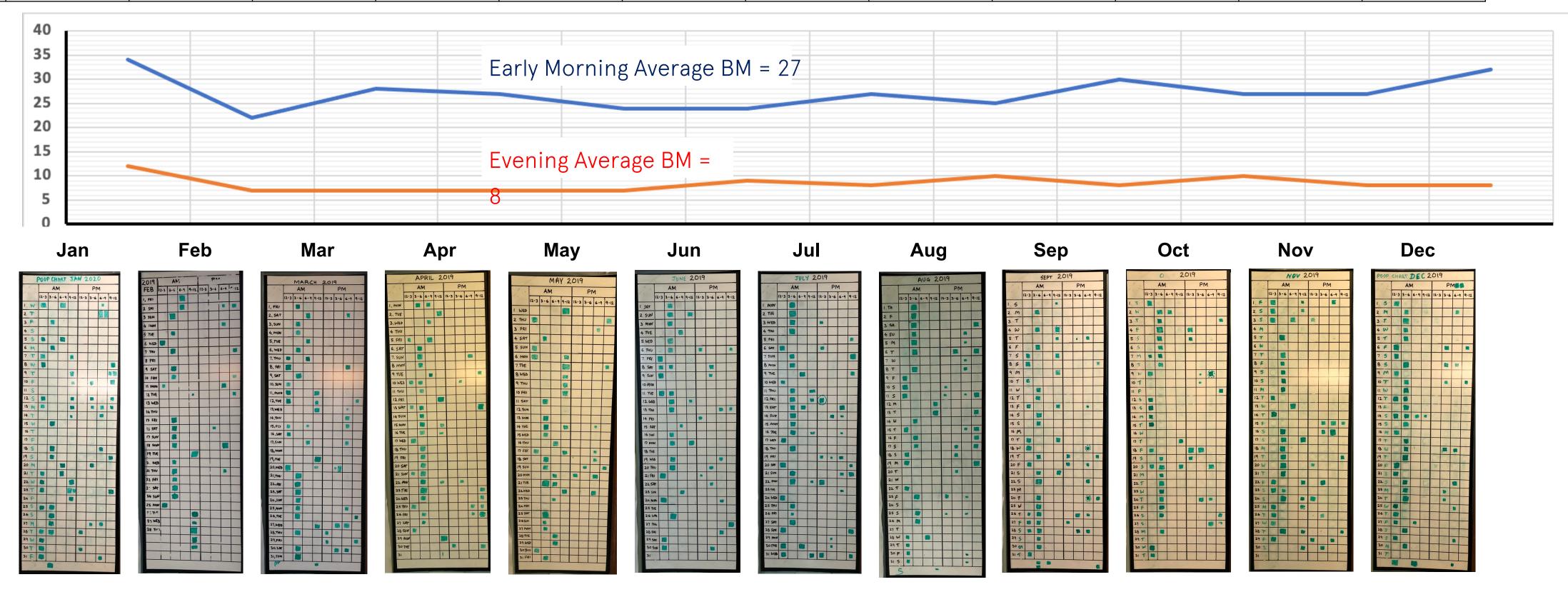


AGAIN...NEW BM PATTERNS EMERGE

This pattern of more BM in the Early Morning and less in the Evening continued in 2019.

BM Data (daily) - 2019 Calendar Year

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Evening	12	7	7	7	7	9	8	10	8	10	8	8
Morning	34	22	28	27	24	24	27	25	30	27	27	32



HOW MIGHT WE...

I began to experiment, how might we influence her BM Patterns from Early Mornings to Evenings?

05 Experiment Data

INPUT TO OUTPUT

Step 1: Let's Normalize Sumi's Diet

Bulk Prepared and Individually Portioning



FRESH VEGETABLES



RAW VEGETABLES PLATTER



COOKED VEGETABLES



DAILY PORTION
FRESH VEGETABLES



DAILY PORTION

COOKED VEGETABLES



SMOOTHIE

· Raspberries · Watermelon

· Blackberries · Pineapple

Blueberries
 Dates

Deleted bananas from the smoothie

Daily Food Intake (1.43 kg = 3.14 lbs.)

Food Items	Morning (9 am)	Afternoon (2 pm)	Evening (5: 30 pm)	
Pan fried, spiced vegetables Zucchini squash, green beans, eggplants, celery, onions, cauliflowers & chick peas Methi Paratha (Lightly spiced Indian flat bread with fenugreek leaves)	230 grams		230 grams	
Mixed-Berries Smoothie (100 grams of raspberries, blackberries and blueberries) with dates, fresh watermelon and pineapples	350 grams			
One boiled egg and ½ apple	95 grams			
Cold vegetables plate (Carrots, bell peppers, cucumbers, radishes, cherry tomatoes) with hummus and cheese		260 grams	260 grams	
Liquid: Sumi hardly drinks water. We give her water melon pieces. Her food has very high water content so she is well hydrated and her urination quantity is abundant and of no concern	Daily Food Intake 1.43 kg. = 3.14 lbs.			

Medications: Sumi is in excellent physical shape. She does not require any medications. She used to take Aricept and Namenda until 2018 and then I stopped as there was not benefit. I occasionally giver her a small dose of OTC sleeping pill

INPUT TO OUTPUT

Step 2: Let's Adjust Eating Times

Bulk Prepared & Individually Portioning

BEFORE JUNE 2020



AFTER JUNE 2020



Bulk Prepared & Individually Portioning

BEFORE JUNE 2020

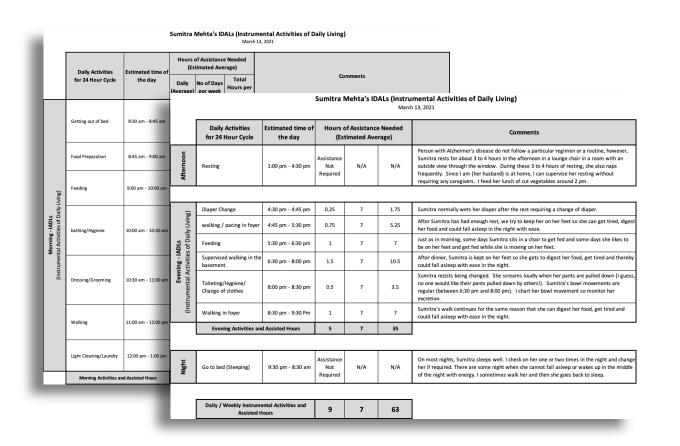


AFTER JUNE 2020



INPUT TO OUTPUT

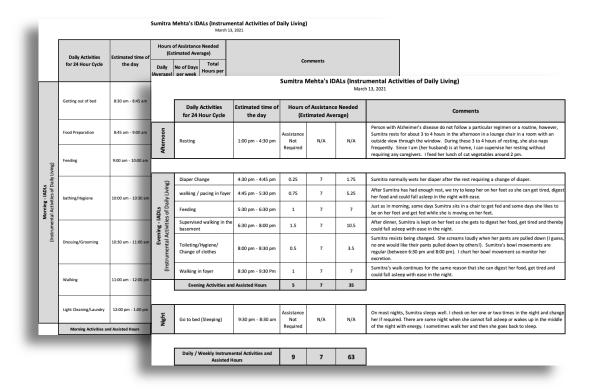
Step 3: Let's Adjust Her Daily Physical Activities



Sumi's Log of Instrumental Activities of Daily Living (IADLs)

INPUT TO OUTPUT

Step 3: Let's Adjust Her Daily Physical Activities



Sumi's Log of Instrumental Activities of Daily Living (IADLs)

3 Segments:

12 hours in bed

6 hours seated in a chair

6 hours on her feet (walking/pacing)

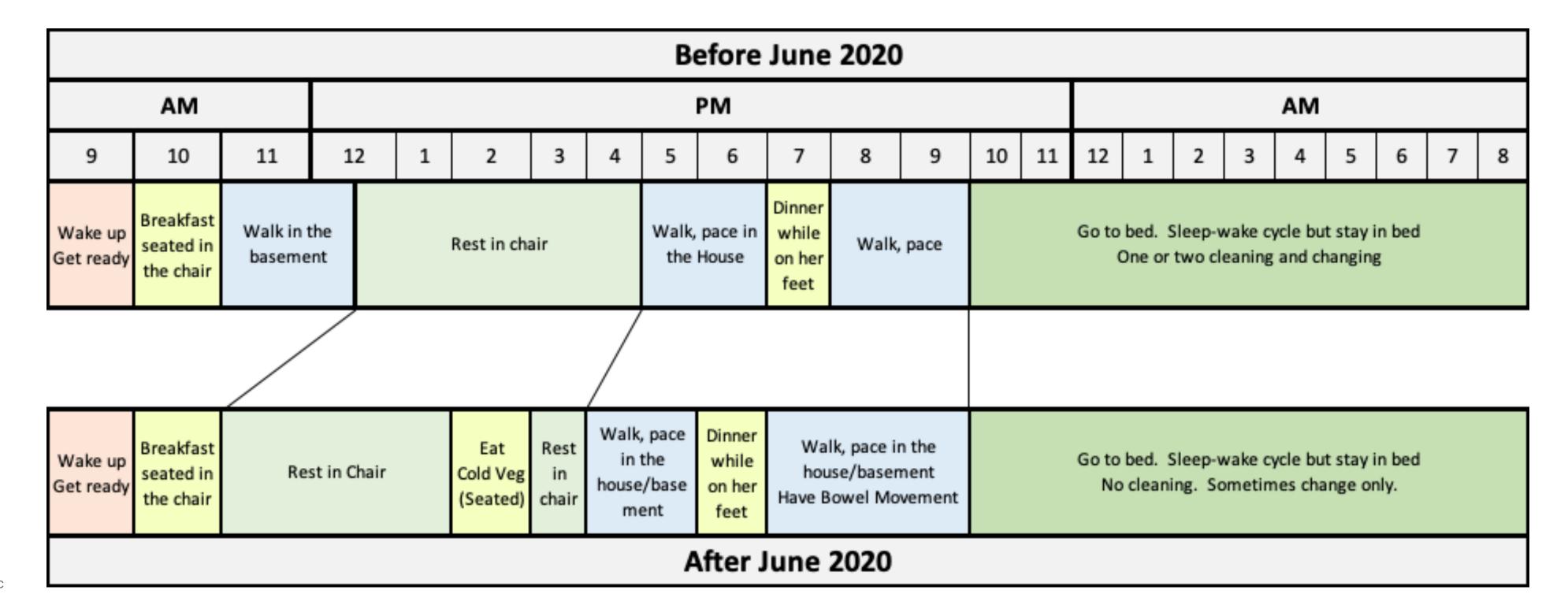
Activities of Daily Living (ADLs)

BEFORE JUNE 2020

- · Walk in basement for 1.5 hours in the Morning
- · 2 meals nine hours apart. Breakfast 10am, Dinner 7pm

AFTER JUNE 2020

- · No walking in the Morning. ~6hrs of sitting. Mid-day cold vegetables plate (while seated in chair)
- · Early dinner at 5:30pm. More walking after dinner allowing her to do her BM



IMPROVEMENTS

With changes in her diet, the timing of her food, making her walk longer in the evening and with some unexplained luck, her BM gradually moved completely to in the evening!

BM Data - September 2020 to January 2021

JUN 2020

8

JUL 2020

AUG 2020

SEP 2020

OCT 2020

NOV 2020 DEC 2020

JAN 2021

Early Morning 18
Evening 12

Early Morning 12
Evening 26

Early Morning 13
Evening 23

Early Morning 3

Evening 30

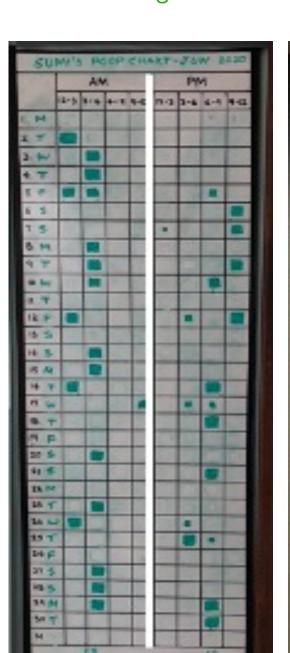
Early Morning 3

Evening 32

Early Morning 2
Evening 33

Early Morning 1
Evening 31

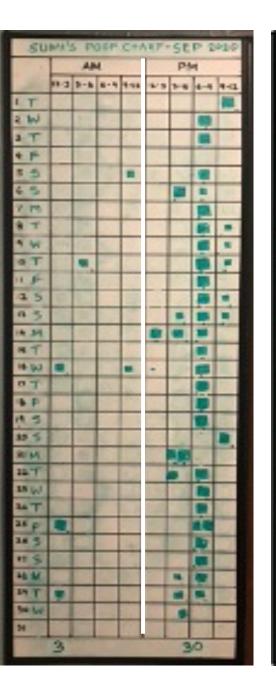
Early Morning **0**Evening **36**

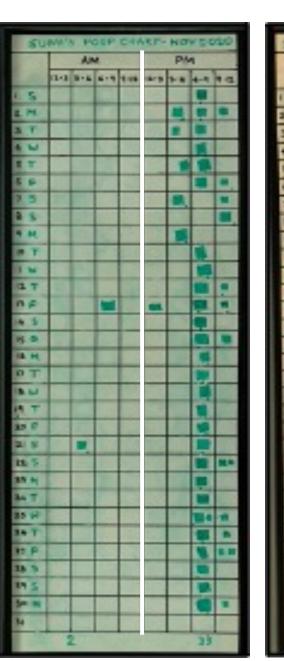


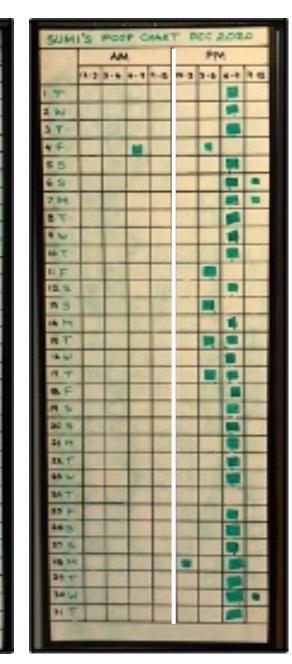


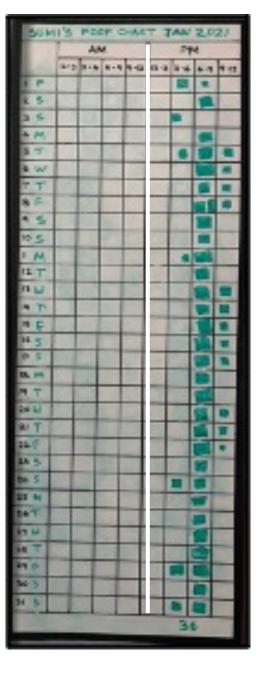








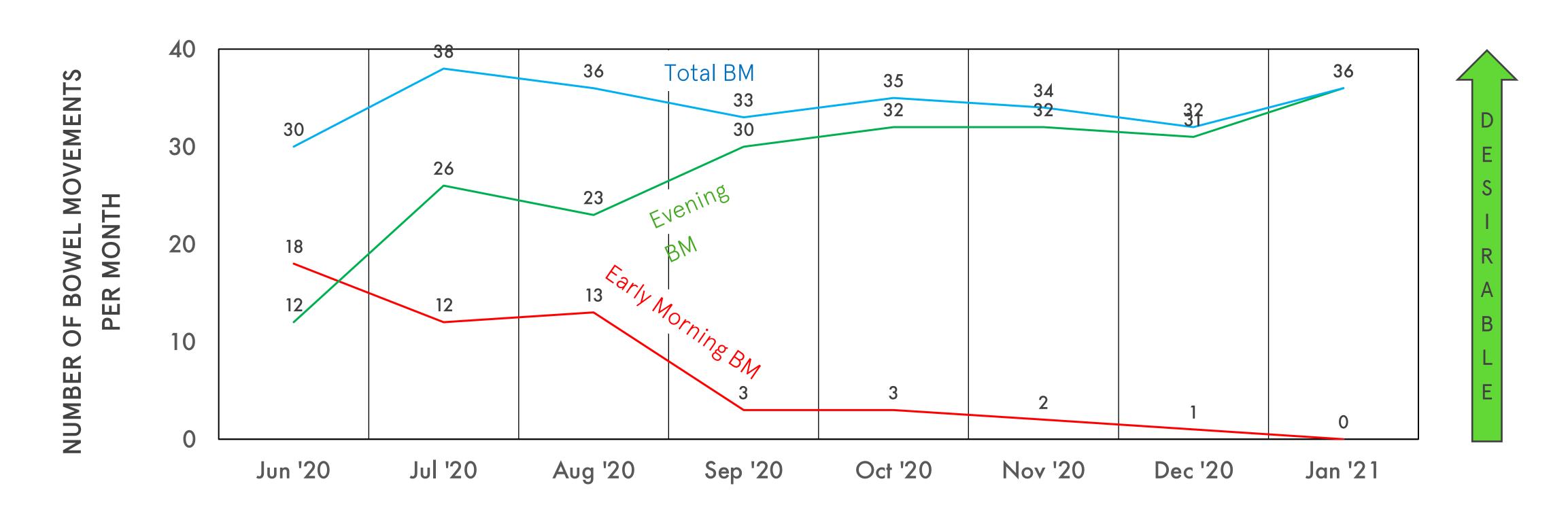




BM Data - September 2020 to January 2021

THE GRAPH BELOW SHOWS THAT OVER THE 7 MONTHS PERIOD:

- · Evening BM kept rising from 12 to 36 (the green line)
- · Early Morning BM declined from 18 to Zero (the red line)
- · Total Numbers of BM ranged from 30 to 38 per month (the blue line), which approximates to 1 BM per day



O6 Take Aways

TAKE AWAYS & LESSONS LEARNED

Thank you Peter Drucker - your management principles worked.

Sumi's BM habits showed a vast improvement by measuring (plotting) it over the last few years.

Sumi's Bowel is emptied before she goes to sleep and she is tired by being on her feet for about 6 hours prior to sleep.

With this fine-tuned, clock-work like schedule, Sumi has been sleeping well.

With a good night's sleep, Sumi's day starts well as she is more relaxed.

This Relaxed State has contributed to reduced anxiety and agitation in her.

I have been sleeping better as I don't have to clean and change her in the middle of the night.

TAKE AWAYS & LESSONS LEARNED

This small victory makes me feel good knowing I was able to change Sumi's habits during the late stage of her disease, which is very unusual.

We were able to affect these changes as Sumi is getting one-on-one, person-centered care at home.

Another lucky enabler was: Sumi is not on any medications so we do not have to deal with the side effects of medications, such as, diarrhea, drowsiness affecting her walks, etc.

Vijay, my chef friend of many years, has a saying, "Recipes Don't Make Chefs." I don't have a recipe for others to follow for what I did to change Sumi's BM habits. As evident from this presentation, it was experimenting with Sumi's diet, timing of the diet, sleep/rest/walking routine and deciphering her non-verbal cues. Like any complicated dish with many ingredients and spices, the chef's magic brings out the best. Desiring any change in your loved ones, imagine you are a chef who has collected all the ingredients and the data, now you have to inject your magic to get the needed changes.

TAKE AWAYS & LESSONS LEARNED

I know that this finely calibrated BM habits of Sumi will change as her disease progresses. In our Journey, there are many new normal and I take this as another new normal which I know will end at some point. But, I am grateful that it is happening. When new challenges come along, I will study, measure and analyze them to design solutions and mitigate them as best as I can.

Finally, everyday, I get my free smell test (from Sumi's BM)

and get assured that I don't' have Covid!

O7 Closing Thoughts

And, when you want something, all the universe conspires in helping you achieve it!

Paulo Coelho, The Alchemist



Thankyou