3rd Pillar of Health

Running a sleep improvement programme leads to improved sleep and reduced absence

CASE STUDY
EAST CHESHIRE NHS TRUST

www.thirdpillarofhealth.com | 0845 686 0022 | marcus@thirdpillarofhealth.com

ENHANCING EMPLOYEE ENERGY & MANAGING FATIGUE

INTRODUCTION

East Cheshire NHS Trust ("ECNHS") recognises that sleep is a topic of great significance, especially where many of the staff population work shifts. ECNHS sought to run a pilot programme for a specific group of staff to understand whether an intervention in respect of sleep would yield benefits.

In consultation with the chosen provider, Third Pillar of Health ("TPoH"), it was decided the programme's effectiveness would be monitored in a number of ways. These included:

- Reviewing composite and individual results of an online sleep health self-assessment run 6 months apart
- Feedback from participants via a Survey Monkey survey
- Word of mouth feedback collected from participants by ECNHS staff
- A review of the absence data for the participating group prior to and during the pilot period.

METHODOLOGY

With input from TPoH an email was drafted and sent out across the Trust to encourage a specific target group to participate. An invitation to participants was also included in the weekly Trust-wide newsletter. We managed to attract 20 willing participants who fitted the criteria that had been set. We especially wanted to attract staff who struggled with sleep but who did not have another condition that led to sleeping problems. At this point we did not want to target those with a strong interest in their own health and wellbeing or the "worried well".

> "52 fewer full-time equivalent days were lost in the participating group in the period following the pilot – an improvement of 40% versus a trust-wide improvement of 3%"

THE PROGRAMME

The elements incorporated in the programme were:

- Ask participants to complete an online sleep health self-assessment
- Immediately provide a personalised report with scoring on key metrics and links to useful factsheets
- Individual feedback provided by TPoH via email to individuals based on their assessment answers
- A face-to-face session on the importance of sleep to wellbeing, top tips for obtaining sufficient good quality sleep as well as better diagnosis and treatment pathways for serious sleeping issues
- Qualitative feedback from participants on their experience via a Survey Monkey questionnaire
- Re-assessment 6 months from the beginning of the programme to understand any improvements
- A review of absence data for the participating group prior to and after the sleep improvement programme.

INITIAL FINDINGS –
RESULTS OF THE FIRST ONLINE SLEEP HEALTH SELF-ASSESSMENT

HIGHLIGHTS:

- Average sleep prior to a workday was 5 hours 40 minutes and 6 hours 16 minutes on a day off
- 62% achieve less than 7 hours sleep prior to a workday, 41% less than 6 hours and 24% less than 5 hours
- 47% say fatigue interferes with daily work activities at least a few times a month (12% at least Few / Week)
- 82% of participants are at risk of insomnia, 24% at risk of sleep apnoea and 12% restless leg syndrome
- 94% of participants do not feel as though they achieve enough sleep. Personal worries and work worries were the main reasons preventing participants from achieving enough sleep.

Below we highlight the main findings from the first round of the assessment, which closed on 4th October 2018. 17 of the original volunteers completed the assessment with one member of staff subsequently ruling themselves out (an 89% completion ration).

Sleep duration

To determine sleep duration, we asked participants to complete a schedule over the course of a week or "typical" shift pattern. We asked participants to tell us their bedtime, wake time, how long it took to fall asleep and how long they were awake for during the night. In consultation with our sleep science partners this was determined to be the most accurate way of collecting this data.

Average sleep duration prior to a workday was just 5 hours 40 minutes. This is comfortably less than the 7-hour minimum recommended by the sleep science community. 82% of staff achieved less than 7 hours of sleep prior to a workday, 41% achieved less than 6 hours and 24% less than 5 hours.

Average sleep duration on a day off was also comfortably less than 7 hours at 6 hours 16 minutes. Even on a day off 59% achieved less than 7 hours of sleep, 41% achieved less than 6 hours and 12% less than 5 hours.

Unsurprisingly, this meant that when compared to their sleep need, 82% of participants were failing to meet their sleep need over the course of their work schedule. To determine sleep need we asked two questions on how much sleep they needed to be fully alert and how much sleep they obtained on holiday (again in consultation with our sleep science partners).

Subjective sleepiness

94% of participants answered “no” when asked: “do you feel as though you achieve enough sleep?” We also asked participants two other questions on whether they experienced sleepiness at work and to what extent sleepiness interfered with daily work activities.

In this group 82% said they experienced sleepiness at work at least a few times a month, 41% at least a few times a week and 12% experienced sleepiness at work daily or almost daily. When asked whether sleepiness interfered with work activities 47% said sleepiness interfered with work activities at least a few times a month and 12% at least a few times a week.

Sleep disorder risks

We wanted to understand the percentage of the staff group that would be deemed to be at risk of three common sleep disorders. These were insomnia, sleep apnoea and restless leg syndrome. In consultation with our sleep science partners we asked a number of (validated) questions to determine a risk status. Being deemed to be at risk does not mean the participant has that sleep disorder just that based on validated assessment techniques they are in a risk category.

None of the participants had been diagnosed with any of the three sleep disorders. Our review found that 82% of this group were at risk of insomnia. This is not a surprise given the participant audience we set out to attract at the beginning of the pilot programme. Furthermore, 24% of staff were deemed to be at risk of sleep apnoea and 12% were deemed to be at risk of restless leg syndrome.

Lifestyle and commuting

In this group 29% of participants consumed five or more caffeinated drinks a day. Perhaps more importantly 71% drank caffeine within 9 hours of bed, 41% within 6 hours of bed and 18% within 2 hours of bed. Whilst we all have different tolerances for caffeine it has a half-life of 6 to 9 hours and it is advisable to avoid caffeine within this period before bed.

82% of participants exercised at least a few times a month with 53% exercising at least a few times a week and 35% on a daily basis. This group contained no smokers. Only 6% of participants used alcohol as a sleep aid (a "nightcap") which is better than many populations we've assessed.

RESULTS MEASURED BY THE RESULTS OF THE ONLINE ASSESSMENT

HIGHLIGHTS:

- Average sleep prior to a workday increased by 17 minutes and by 9 minutes on days off
- The percentage of participants saying sleepiness interfered with their work fell from 47% to 40%
- The percentage of staff at risk of insomnia, sleep apnoea and restless leg syndrome all fell
- Improvements were seen across all lifestyle questions
- Overall and scores for sleep duration, sleep quality, daytime sleepiness and lifestyle all improved.

The following results were collected after we ran the interventions. These included the personalised report after completion of the initial assessment, the face-to-face session, the individual email feedback after the first assessment as well as production of and dissemination of a "Sleep Support Pathway" poster.

10 of the original 17 respondents participated in the second round of the assessment, which closed on 10th April 2019 – 6 months after the initial assessment.

Sleep duration

In only 6 months we saw average sleep prior to a workday increase by 17 minutes to 5 hours 57 minutes (11 minutes in the group that participated twice). Average day off sleep also increased by 9 minutes to 6 hours 25 minutes (16 minutes in the group that participated twice).

The percentage of staff achieving less than 7 hours of sleep prior to a workday dropped from 82% to 70% (80% to 70% in the group that participated twice).

Subjective sleepiness

The percentage of participants saying they experienced sleepiness at work at least a few times per month dropped from 82% to 70%. The percentage saying sleepiness interfered with work activities at least a few days a month dropped from 47% to 40%.

Sleep disorder risks

- The percentage of respondents deemed to be at risk of sleep apnoea dropped from 24% to 20%
- The percentage of respondents deemed to be at risk of insomnia dropped from 82% to 70%
- The percentage of respondents deemed to be at risk of RLS dropped from 12% to 10%

Lifestyle

For this section we specifically wanted to focus on those who had participated in the assessment on both occasions. We found the percentage of those drinking 5+ caffeinated drinks fell from 40% to 30%. The average amount of time between drinking their last caffeinated drink and bed increased from 4 hours 17 minutes to 7 hours 14 minutes (a major change).

Those who exercised at least a few times a month increased from 90% to 100%. The percentage of respondents who feel as though they achieve enough sleep increased from 10% to 30%.

> Employers who institute workplace policies and systems to promote employees' sleep health have much to gain for their operations
>
> *—Journal of Clinical Sleep Medicine, April 2019*

Scores by categories

We also then compared scores across 5 main categories to see if there had been an improvement in those who participated twice. The results were as follows:

- ***Overall Score:*** We saw an average improvement in overall score of 10% (4.2 points out of 100). 6 of 10 participants improved their overall score. The greatest improvement was 42%

- ***Sleep Quality Score:*** We saw an average improvement of 17% (3.2 points out of 100). 5 of 10 participants improved their overall score and 2 remained unchanged. The greatest improvement was 126

- ***Sleep Quantity Score:*** We saw an average improvement of 83% (5.2 points out of 100). 4 of 10 participants improved their overall score and 3 remained unchanged. The greatest improvement was 813%

- ***Daytime Sleepiness score:*** We saw an average improvement of 20% (4.1 points out of 100). 5 of 10 participants improved their overall score and 1 remained unchanged. The greatest improvement was 155%

- ***Lifestyle Score:*** We saw an average improvement of 27% (11.7 points out of 100). 9 of 10 participants improved their overall score. The greatest improvement was 103%.

These results are really positive in a very short period of time (6 months). We have seen improvements in lifestyle habits (9 out of 10 improved their lifestyle scores) which are likely feeding through to better sleep quantity and sleep quality and in turn daytime sleepiness scores.

RESULTS MEASURED BY THE RESULTS OF A QUALITATIVE FEEDBACK SURVEY

On the 31st October 2018 we sent participants a link to a Survey Monkey survey to seek their subjective views on the pilot programme. We asked participants to complete the survey by 23rd November. At this point staff had completed their 1st online assessment, received their personalised report, received personalised feedback and attended the face-to-face session on sleep improvement.

We received 12 responses which asked about all aspects of the pilot programme up to that point.

Online sleep health self-assessment and individual feedback

100% of participants agreed or strongly agreed that the online assessment was easy and intuitive to use. 75% agreed or strongly agreed that the assessment got them thinking about their own sleep. 67% found the personalised report useful and interesting. 83% of staff found the individual feedback following the online assessment at least somewhat useful.

The face-to-face session on sleep improvement

82% of those who attended the face-to-face session said they'd learnt something new to help their sleep and the same percentage (82) would recommend that their colleagues attend the face-to-face training session.

We also received some good feedback on the presenter as well as a number of participants who highlighted specific changes they would make in their routine and lifestyle habits following the session.

Feedback on the pilot programme overall

We received some very encouraging feedback from those who participated in the pilot programme. A number of responses noted that the pilot had been useful and interesting. Some participants alluded to specific changes they were making including: testing the foods they were eating and removing technology from the bedroom.

A number of participants also appreciated the opportunity to give their own sleep a period of focus. Even participants who didn't feel as though they had learnt a great deal thought the programme would be useful to a wider audience – who perhaps weren't so obsessed with their own sleep and overcoming insomnia.

RESULTS MEASURED BY THE RESULTS OF ABSENCE STATISTICS

- 52 fewer full-time equivalent days were lost – an improvement of 40%
- Estimated return on investment of 185%.

ECNHS undertook internal analysis to review sickness absence data for the period from March 2017 to March 2018 and for the period from March 2018 to March 2019. Amongst the top reasons for absence were gastrointestinal issues as well as coughs, colds and flu. We know from numerous research studies that poor sleep is associated with reduced immunity for both chronic and short-term health conditions.

The data presented excluded absence data related to cancer sickness.

	March 2017 – March 2018	March 2018 – March 2019	Trajectory (vs Trust-wide)
FTE days lost	136	82	–52 (–40%) (–3%)
FTE average days lost	6.5	4.3	–2.2 (–34%) (–2%)
Calendar days lost	152	90	–62 (–41%) (–2%)
Calendar average days lost	7.1	4.7	–2.4 (–34%) (–2%)
Total number of episodes	20	22	+2 (+10%) (–+1%)

We don't seek to attribute all of the improvements in absence data to participation in the pilot programme. However, as mentioned above, we know that sleep is intrinsically linked to health. Feedback from those that participated also highlighted approval that this pilot had been run and an effort had been made to help those with serious sleeping problems. This is likely to reflect in more positivity towards the employer.

Even if we can only attribute 10% of the improvements in FTE days lost to the pilot programme, based

on a cost figure of £600 to cover a shift of an absent staff member, the return on investment in this 6-month period was 185%.

THE VIEW FROM EAST CHESHIRE NHS TRUST. ALISON NUTTALL, STAFF WELLBEING ADVISOR

We are delighted to see that even in the space of 6 months the sleep pilot has supported a positive impact on staff health and wellbeing and, in turn, absence data. Sequentially this work has helped to strengthen staff productivity, service delivery and ultimately the provision of safe and consistent patient care.

Third Pillar of Health provided a very professional and comprehensive service, offering easy and sensible solutions to support and improve our staffs' sleep health. The trust certainly endorses their service and looks forward to working with them again to continue tackling issues surrounding fatigue and sleep deprivation.

THE VIEW FROM THIRD PILLAR OF HEALTH (THE PROVIDER). MARCUS DE GUINGAND, MANAGING DIRECTOR

Sleep is often left behind in many health and wellbeing programmes, but it is so important to our health and productivity. Even giving staff a chance to focus on their own sleep as well as knowledge they can use to make informed decisions on sleep can be really beneficial.

It's therefore no surprise to see absence figures significantly outperform the Trust-wide figures and positive feedback from the participants. It was a pleasure to work with Alison and her team at East Cheshire NHS Trust to put in place a comprehensive pilot programme with real measures of effectiveness. We look forward to working with ECNHS in the future.

RESEARCH WHICH BACK UP THE BENEFITS OF RUNNING SLEEP-FOCUSED INITIATIVES

It was also interesting to note a study in the April 2019 Journal of Clinical Sleep Medicine confirmed how initiatives to help improve sleep deliver results. Researchers from the American Academy of Sleep Medicine, Centers for Disease Control and Prevention, and Sleep Research Society analysed 60 articles focusing on workplace interventions to boost sleep performance.

"Employers who institute workplace policies and systems to promote employees' sleep health have much to gain for their operations," Claire Caruso, study co-author, said in the press release. "The benefits may include reduced costs due to worker error and workers' compensation insurance, and they will likely see improvements in job retention. Promoting employee sleep health will be in everyone's best interests: the employer, the worker, and the consumers of the organisation's goods and services."

This article has a useful summary of that research.

CONTACT DETAILS – IF YOU WOULD LIKE TO FIND OUT MORE

Third Pillar of Health

Marcus de Guingand

Managing Director, Third Pillar of Health

Email: marcus@thirdpillarofhealth.com

Office: +44 845 686 0022

Website: www.thirdpillarofhealth.com

East Cheshire NHS Trust

Alison Nuttall

Staff Wellbeing Advisor

Email: alison.nuttall@nhs.net

Office: +44 1625 65 65 26

Website: www.eastcheshire.nhs.uk