

## **Project Title**

Improving Clinical Documentation & DRG Coding Accuracy

## **Project Lead and Members**

Project lead: Ms Sheryl Yong

Project members: Clin A/Prof Gerald Chua, Dr Ernest Suresh, Adj A/Prof Aravind Kumar, Dr Thng Yongxian, Ms Jennie Sun, Ms Cynthia Xu, Adj A/Prof Gamaliel Tan, Dr Jared D'Souza, Ms Liew Mei Pheng, Ms Connie Chung, Ms Rachel Lim, Mr Flavian Li, Dr Yang Kok Soong, Ms Kailasam Mani, Ms Stephanie Teo, Ms Josephine Wong, A/Prof Cheah Wei Keat

## **Organisation(s) Involved**

Ng Teng Fong General Hospital, Jurong Community Hospital

## **Healthcare Family Group(s) Involved in this Project**

Medical, Allied Health, Healthcare Administration

## **Applicable Specialty or Discipline**

Medical Records Office, Medical Informatics, Finance, Epidemiology, Quality, Innovation & Improvement

## **Project Period**

Start date: Mar 2018

Completed date: Mar 2021

## **Aims**

To understand the reason for our low CMI and to mitigate the problem(s) in order to improve our hospital's CMI to 1.32 (on par with hospitals with similar inpatient complexity).

## **Background**

See poster appended / below

## **Methods**

See poster appended / below

## **Results**

See poster appended / below

## **Lessons Learnt**

With the experience gained from the project, the DRG coding project learnings will also be shared across the cluster to help NUH and AH through the change in processes when they move onto the NGEMR system

## **Conclusion**

See poster appended / below

## **Project Category**

Care & Process Redesign, Quality Improvement, Job Effectiveness, Value Based Care, Functional Outcome

## **Keywords**

Clinical Documentation, Casemix Index, Coding Accuracy, Knowledge Sharing

## **Name and Email of Project Contact Person(s)**

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# IMPROVING CLINICAL DOCUMENTATION & DRG CODING ACCURACY

- SAFETY
- PRODUCTIVITY
- QUALITY
- COST
- PATIENT EXPERIENCE

**MEMBERS:** MS SHERYL YONG, CLIN A/PROF GERALD CHUA, DR ERNEST SURESH, ADJ A/PROF ARAVIND KUMAR, DR THNG YONGXIAN, MS JENNIE SUN, MS CYNTHIA XU, ADJ A/PROF GAMALIEL TAN, DR JARED D'SOUZA, MS LIEW MEI PHENG, MS CONNIE CHUNG, MS RACHEL LIM, MR FLAVIAN LI, DR YANG KOK SOONG, MS KAILASAM MANI, MS STEPHANIE TEO, MS JOSEPHINE WONG, A/PROF CHEAH WEI KEAT

## A. Define Problem, Set Aim

### Opportunity for Improvement

In 2017, NTFGH's inpatient casemix index (CMI) of 1.05 was the lowest among all public hospitals in Singapore (Figure 1). However, taking reference from other acute hospitals with similar inpatient complexity (Hospitals A & B), our hospital's CMI should be about 1.32.

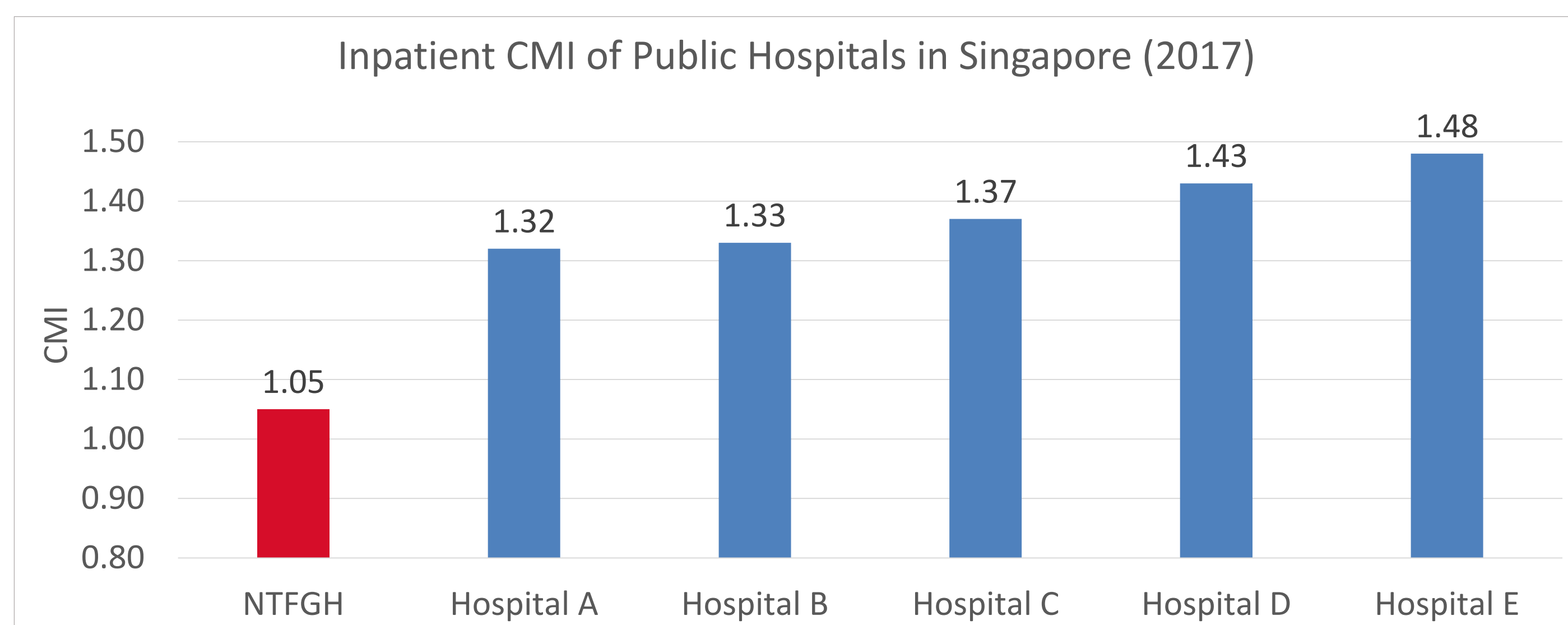


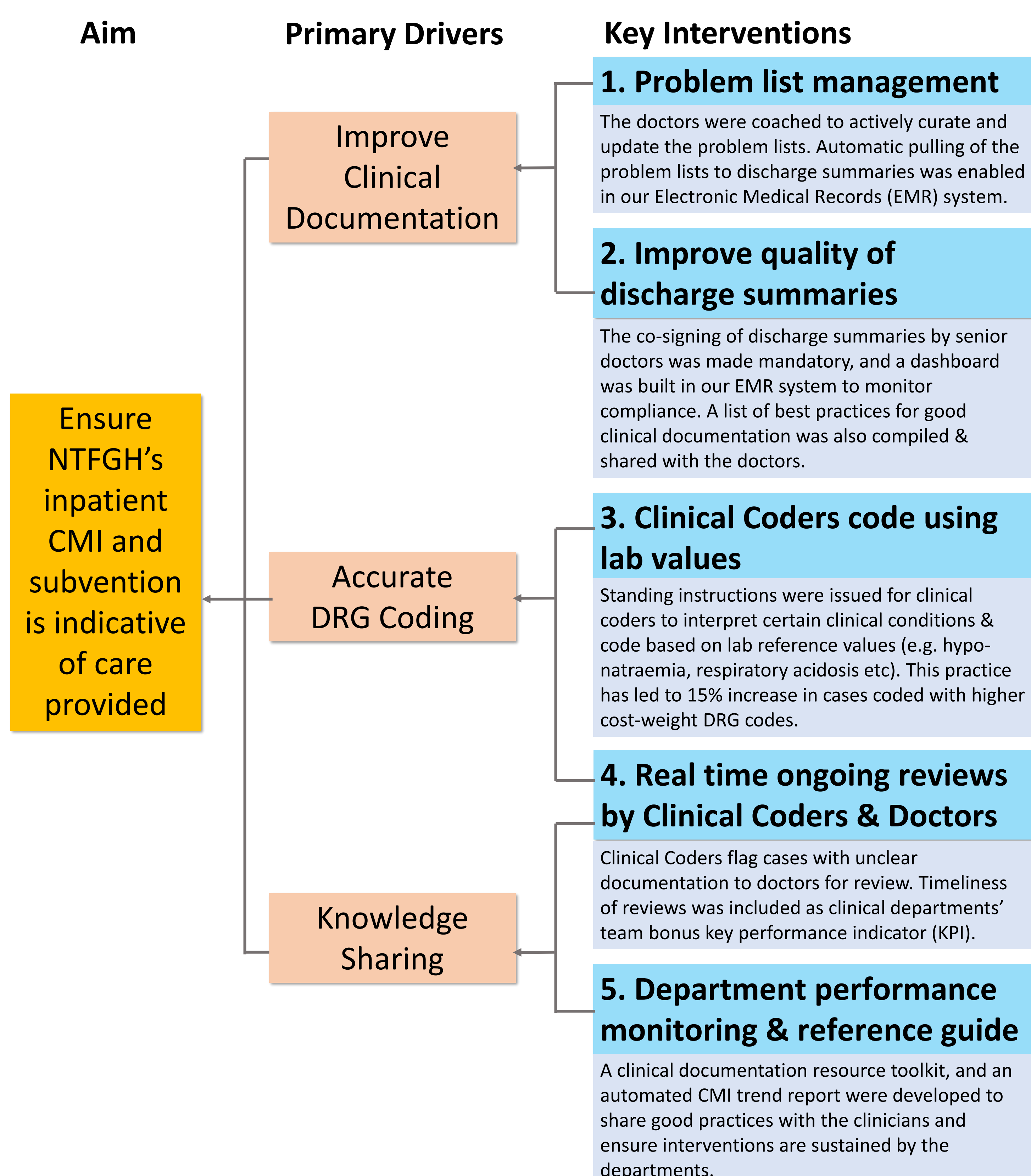
Figure 1: Inpatient CMI of Public Hospitals in Singapore (2017)

### Aim

To understand the reason for our low CMI and to mitigate the problem(s) in order to improve our hospital's CMI to 1.32 (on par with hospitals with similar inpatient complexity).

## C. Implement & Spread Changes

The project team worked closely through department representatives to implement 5 key interventions for all departments to improve clinical documentation and accuracy in DRG coding overall for the hospital.



## B. Analyse Problem

2 pilot studies were conducted where cases with high cost but low cost-weights were reviewed by doctors and clinical coders. 10%-40% of these cases had incomplete or unclear discharge summaries, and had lower cost-weight DRG codes. Improving clinical documentation of these cases led to 3%-60% increase in cost-weight. Based on the findings from the retrospective case reviews, the project team identified clinical documentation, coding accuracy and knowledge sharing as key problem areas that needed to be addressed.

## D. Results

With the effective implementation of the interventions, a marked increase in average CMI from 1.16 (2018) to 1.55 (Jan-Mar 2021) was achieved (Figure 2). This surpassed our initial target of 1.32 and is now in the same league as tertiary hospitals in Singapore (Figure 1: Hospitals C & D). Changes from the project have indirectly helped to improve patient care as we continue to see better clinical documentation which provides a more accurate representation of the complexity of inpatient cases being treated at our hospital. Corresponding increases in subvention were also observed.

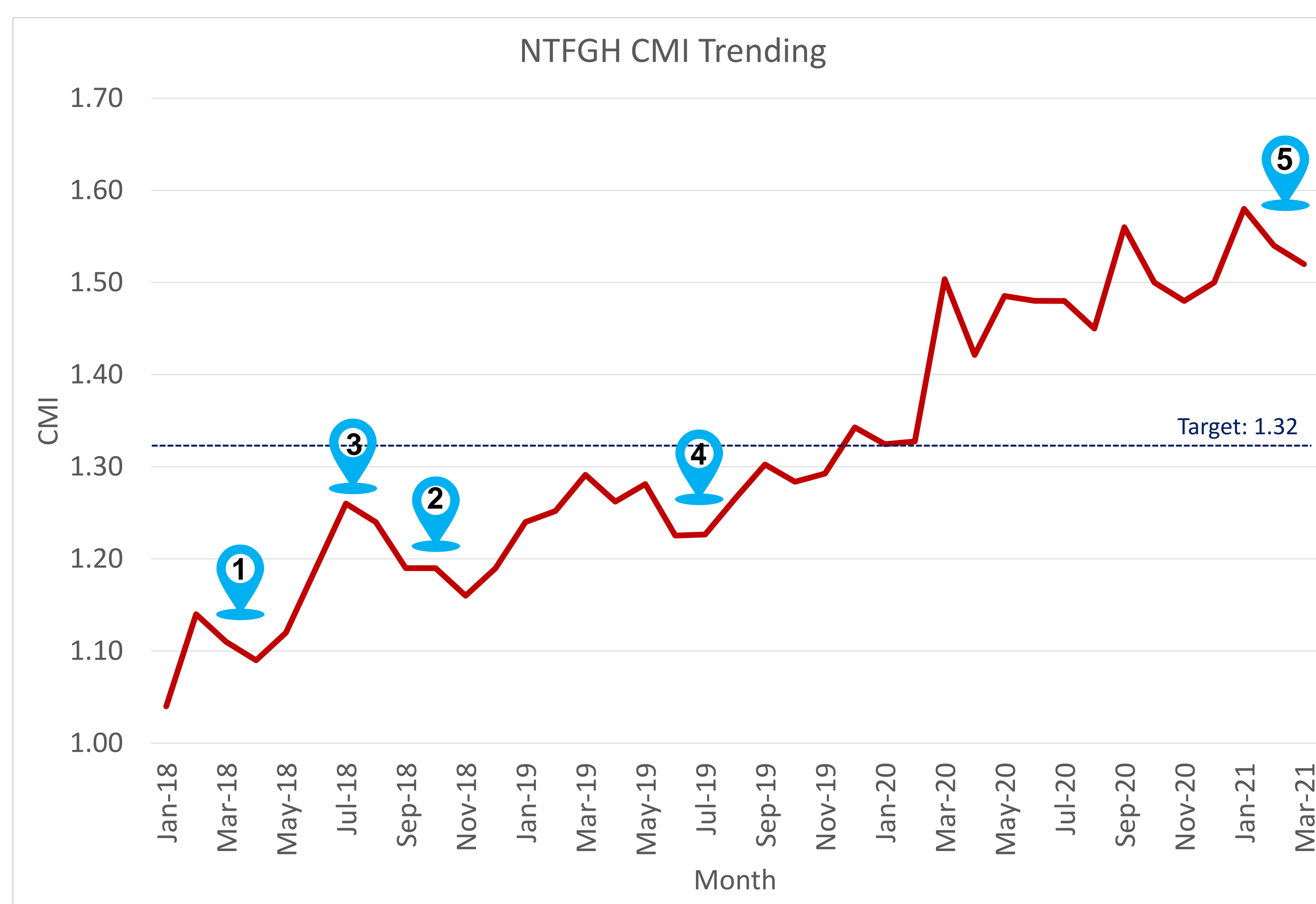


Figure 2: NTFGH CMI Trending (Jan 2018 to Mar 2021)

## E. Learning Points

### Key learning points

- Having a multi-disciplinary project team comprising members who are familiar with different aspects of the system was essential in our ability to identify and effectively implement interventions
- Systems level changes (e.g. process, IT) are necessary for improvement to be self-sustaining
- With the experience gained from the project, the DRG coding project learnings will also be shared across the cluster to help NUH and AH through the change in processes when they move onto the NGEMR system

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CEO; CFO; COO; VCMB (CRM&CQ); Snr Dir Allied Health; All inpatient doctors Departments of Medicine, Orthopaedics, General Surgery; Casemix Section, Medical Records Office; Medical Informatics; Finance; Epidemiology; Quality, Innovation & Improvement