

## Project Title

Collaborative Model of Care between Orthopaedics and Allied Healthcare Professionals for Knee Osteoarthritis (CONNACT)

## Project Lead and Members

- Dr Bryan Tan Yijia
- Dr Lee Keng Thiam
- Dr Yang Su-Yin (Weng Shuying)
- Ms Ngo Xueting
- Ms Quek Wei Lin
- Ms Vicky Chan Tin Ki
- Dr Ding Tze Keong, Benjamin (Chen Shiqiang)
- Ms Tan Chun Yue
- Ms Yeo Jia Ying
- Mr Goh Zhong Sheng
- Ms Chew Long Szu, Gillian (Zhou Longsi)
- Dr Michelle Jessica Pereira
- Ms Ng Lih Yen
- Ms Ong Pei Gin

## Organisation(s) Involved

Woodlands Health, Tan Tock Seng Hospital, Khoo Teck Puat Hospital, National Healthcare Group, St Luke's Eldercare

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

Allied Health, Medical; Nursing

## Applicable Specialty or Discipline

Orthopaedic Surgery

## Project Period

Start date: May 2021

Completed date: Sep 2022

## Aim(s)

To develop and implement a new model of care to improve clinical and economic outcomes for people with Knee Osteoarthritis (OA) in Singapore.

## Background

See poster appended/ below

## Methods

See poster appended/ below

## Results

See poster appended/ below

## Conclusion

See poster appended/ below

## Project Category

Care & Process Redesign

Value Based Care, Functional Outcome

Productivity, Cost Saving

## Keywords

CONNACT – Collaborative Model Of Care

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

Name: Dr Bryan Tan Yijia

Email: [Bryan\\_tan@wh.com.sg](mailto:Bryan_tan@wh.com.sg)

# Collaborative Model of Care between Orthopaedics and Allied Healthcare Professionals for Knee Osteoarthritis (CONNECT)

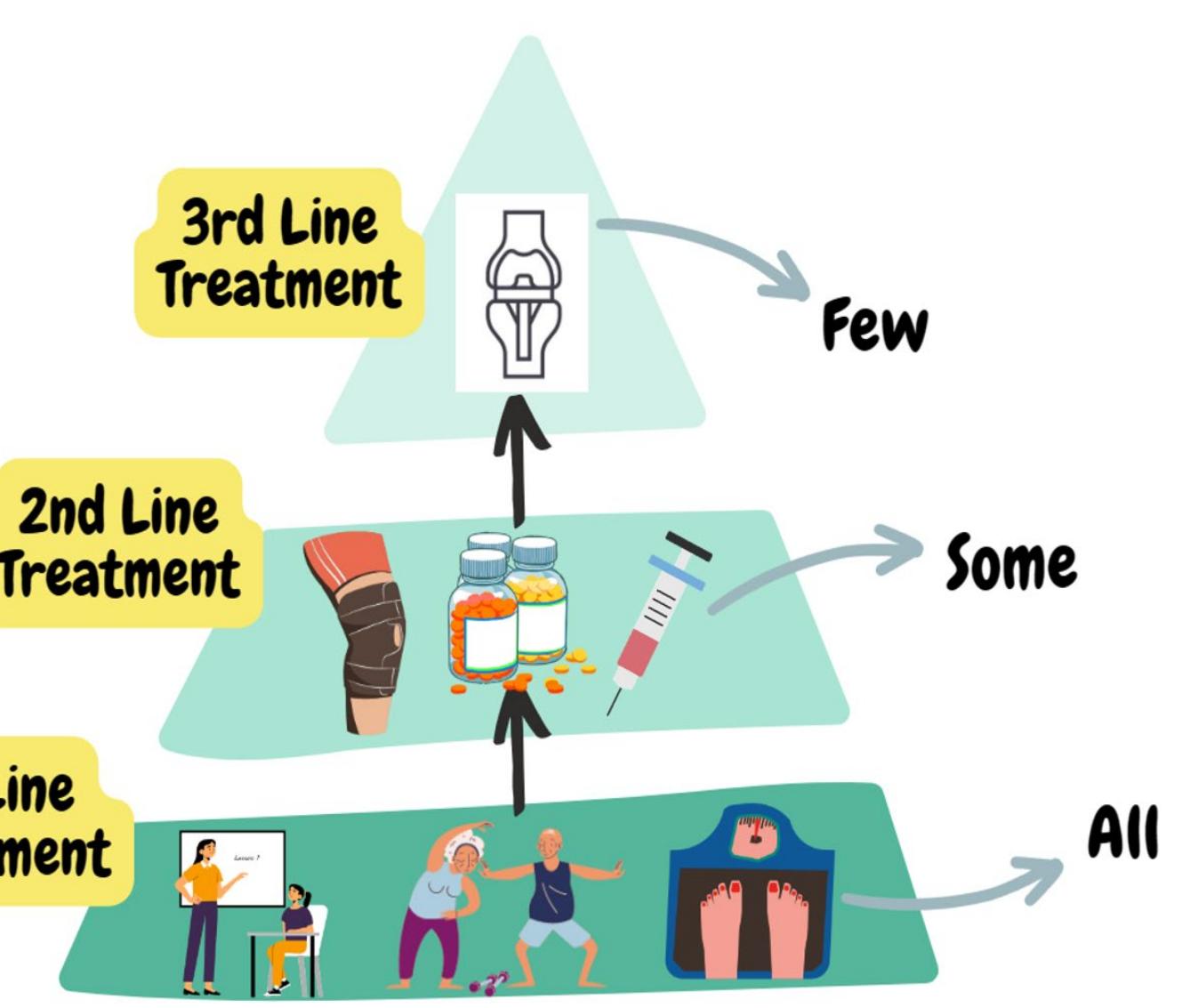
Bryan Tan<sup>1</sup>, Lee Keng Thiam<sup>2</sup>, Yang Su-Yin<sup>1</sup>, Ngo Xue Ting<sup>2</sup>, Quek Wei Lin<sup>2</sup>, Vicky Chan<sup>2</sup>, Benjamin Ding<sup>1</sup>, Ong Pei Gin<sup>2</sup>, Ng Lih Yen<sup>3</sup>, Michelle J. Peirera<sup>4</sup>, Tan Chun Yue<sup>1</sup>, Yeo Jia Ying<sup>1</sup>, Zack Goh<sup>1</sup>, Gillian Chew<sup>1</sup>

<sup>1</sup>Woodlands Health  
<sup>2</sup>Tan Tong Seng Hospital

<sup>3</sup>Khoo Teck Puat Hospital  
<sup>4</sup>National Healthcare Group HQ

## BACKGROUND & PROBLEM

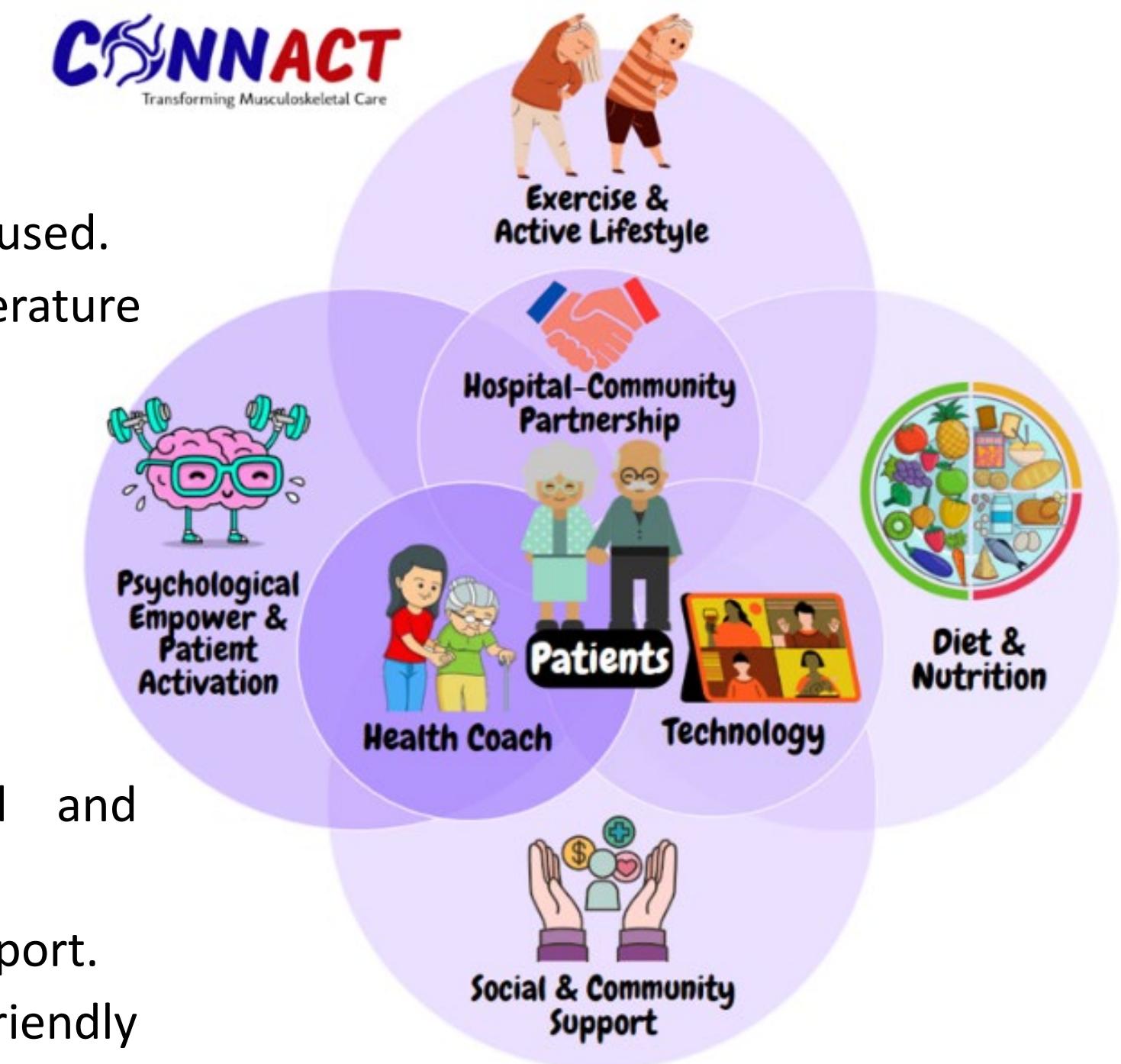
- Knee osteoarthritis (OA) is one of the fastest-growing cause of disability, pain, and reduced mobility worldwide.
- Although guidelines recommend a stepwise approach in managing Knee OA (see picture), more than half of patients are not receiving optimal non-surgical treatment. A 2017 local study showed that up to 50% of patients did not receive any physiotherapy, and a follow-up study in 2021 indicates OA care only achieved 56% of the quality indicators.
- While knee replacement is an effective option for knee OA, it is costly and potentially risky and up to 25% of cases potentially can be avoided or delayed.
- Singapore is witnessing an unsustainable growth of knee replacement rate of roughly 11.5% per year since 2008.



## SOLUTION & INNOVATION



- Transforming current traditional episodic care approach to **population health-centric, "biopsychosocial", chronic care approach**
- Medical Research Council (MRC) Guide on developing and evaluating complex interventions was used.
- Appraised the best available evidence and international models of care through extensive literature review.
- Key stakeholders** from TTSH (Departments of Orthopaedics, Physiotherapy, Dietetics, Psychology and Social Work) co-developed a new care model using the "biopsychosocial" approach in partnership with St Luke's Eldercare (our key **community partner**).
- CONNACT programme is a **community-based, personalised, multidisciplinary programme** developed with guidance from local experts and overseas collaborators.
- Key principles:** Evidence-based, personalised, synergistic, self-management, patient-led and community-based formed the programme's fundamentals.
- 4 pillars** of CONNACT: Diet, Exercise, Psychological empowerment, and Social and community support.
- 3 key enablers:** Hospital-community partnership, Transdisciplinary health coaching, and elderly-friendly technology are critical for **sustainability and scalability** while keeping the **patient at the centre**.



### CONNACT Development Timeline



**Phase 1:** Co-developed the CONNACT programme by the local and international multidisciplinary team and community partners in 2017. A study on patient journey was done to identify barriers and areas for intervention.

**Phase 2:** Pilot programme started in 2018 with 20 patients as a feasibility Randomised Control Trial (RCT) comparing CONNACT programme with usual care. The process evaluation identified themes for intervention optimisation and design feasibility.

**Phase 3:** Conducted the Effectiveness-Implementation Hybrid RCT in 2019 with 110 patients to assess the effectiveness through a pragmatic RCT, while understanding the implementation context through an explanatory sequential mixed-method process evaluation. Stakeholders' feedback and qualitative interviews helped to identify the programme's success factors and potential growth areas.

**Phase 4:** Key changes were made for an NHG-wide implementation since 2021 and implementation was supported by the NHG Population Health Grant. Key changes include the use of health coaches through a "transdisciplinary" approach, fostering a stronger hospital-community partnership while going upstream into primary care and community.

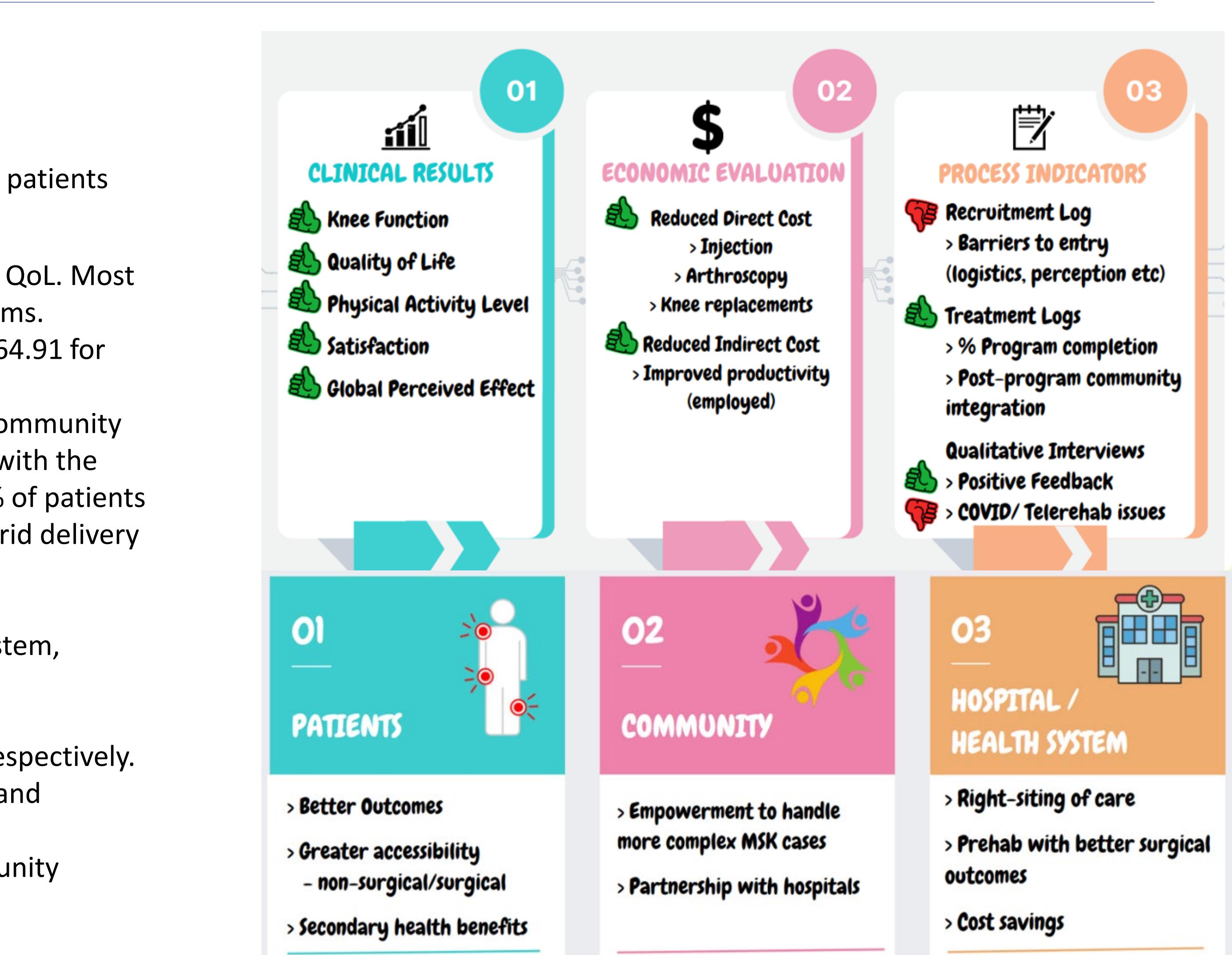
## RESULTS & OUTCOMES

Between May 2021 to September 2022, 96 patients underwent the CONNACT programme whereas 448 patients underwent usual care.

- Improved clinical outcomes:** CONNACT patients performed better in outcomes such as functions and QoL. Most significantly, 92.1% of CONNACT patients vs. 65.6% control patients reported improvement in symptoms.
- Better economic and productivity outcomes:** CONNACT patients reported a total cost savings of \$1964.91 for both direct and indirect costs over 1 year.
- Process indicators:** (1) Barriers to entry were identified and there are ongoing efforts to strengthen community engagements to optimise workflows and improve patient education. (2) Patients are highly satisfied with the group support and learning, benefits of exercise, with near 100% completion rate over 12 weeks. 50% of patients continued with regular physical activity after discharge. (3) Initial issues with the COVID-enforced hybrid delivery format were resolved over time.
- The diagram on the right illustrates the **key benefits** for patients, community, and hospital/ health system, resulting in a win-win-win situation.
- Patient education materials and facilitator's manual were created** for patients and health coaches respectively.
- Other work-in-process includes integrating the education materials on the **NHG Healthapp platform** and formation of **patient support group**.
- Stakeholders also expressed satisfaction** with their involvement in the programme with more community partners (e.g. NTUCHealth and ActiveSG) slated to come on board in 2023.

## REFERENCES

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