The Future of Bariatric Surgery Training: Remote, AI-Enhanced Skill Development and Real Surgery Evaluation

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[X] I have no potential conflict of interest to report

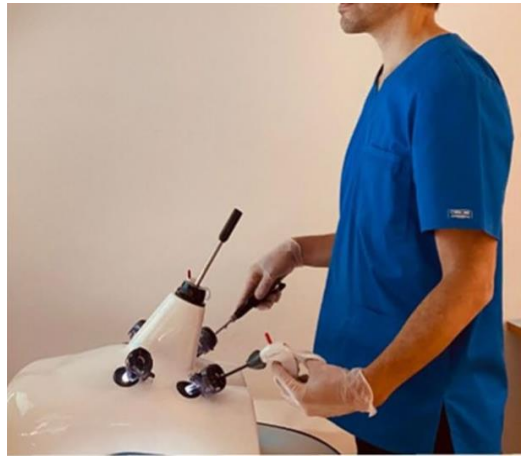
Background

Global obesity epidemic is on the rise

The demand for competent metabolic-bariatric surgeons has escalated

A long learning curve, limited access to expert tutors and the need for flexible training compromises skill development

Video-based platforms with remote and asynchronous feedback, enhanced with AI could help achieving proficiency in LRYGB technical skills



TEACH 1

Duran, V.Five-year experience training surgeons with a laparoscopic simulation training program for bariatric surgery: A quasi-experimental design. *Obesity Surgery*. 2023
Sundbom M. Laparoscopic revolution in bariatric surgery. World J Gastroenterol. 2014
Boza C, León F, Buckel E, Riquelme A, Crovari F, Martínez J, et al. Simulation-trained junior residents perform better than general surgeons on advanced laparoscopic cases. Surg Endosc. 2017

Objective: *"Describe a* ***remote and asynchronous laparoscopic bariatric surgery training program*** *and its* ***future potential*** *to facilitate corrections in* ***actual surgical procedures, leveraging artificial intelligence*** *to significantly improve decision-making and precision."*

Methods

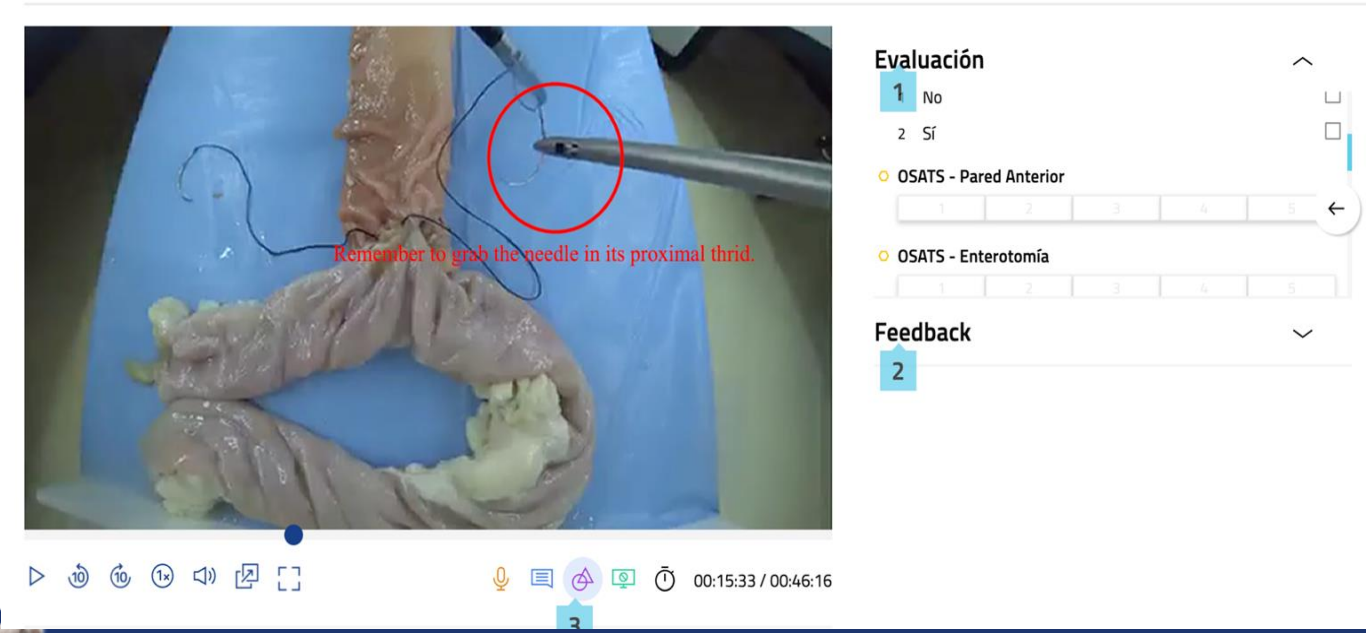
LRYGB Simulation program with 26 stages. Covering manual and stapled gastrojejunostomy (GJ) and jejunojejunostomy (JJO)

Instructional videos + literature

Trainees submit videos for expert review

Procedural time, anastomosis quality (permeability and leakage) and skills (OSATS) are assessed.

Feedback is enhanced with videos on common errors and with an AI tool



TEACH1

C1DO1

CREATE COURSE

9+

Hello Carrera Medi...

Evaluate student

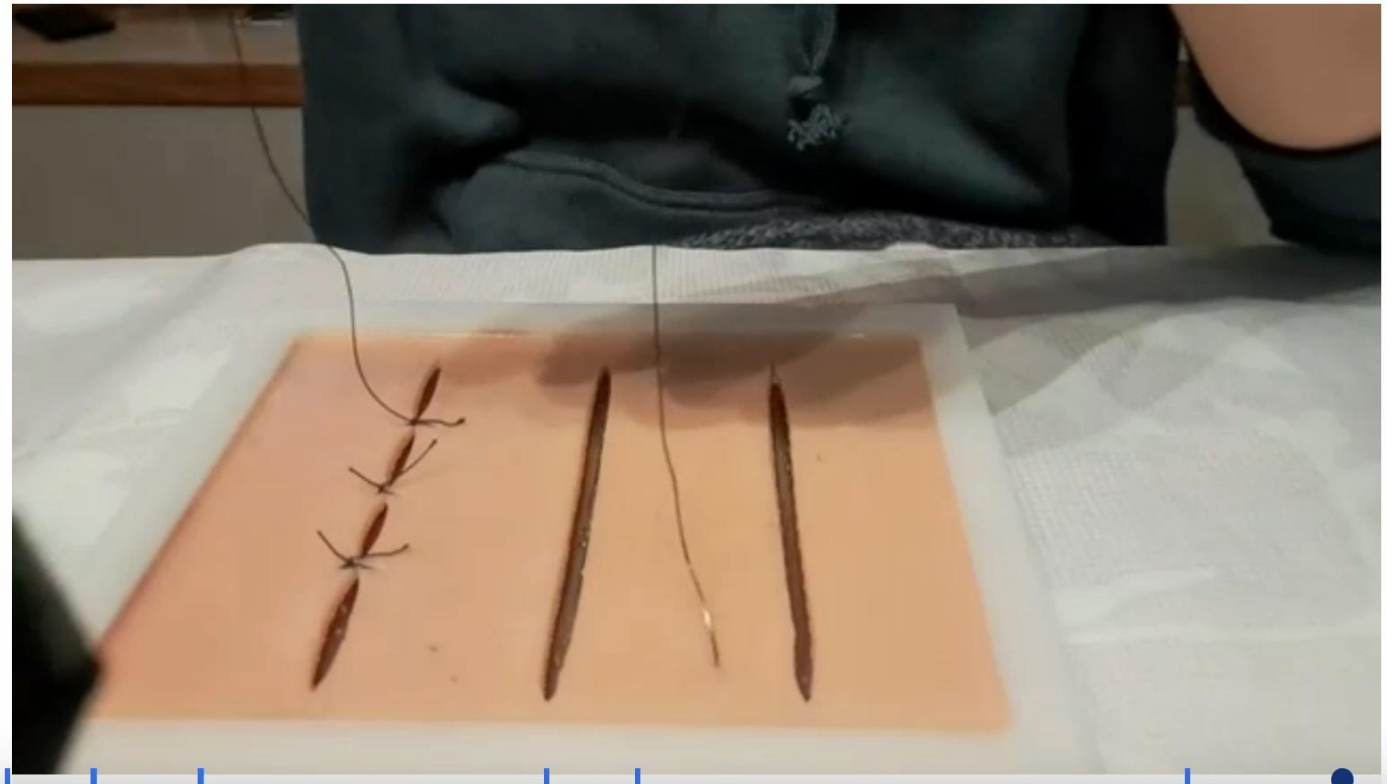
Stage: Curso de suturas 4 año 2023 (MED407-A)

Course: Curso de suturas 4 año 2023 (MED407-A)
Career: Carrera Medicina
Faculty: Facultad de Medicina

COMPLETE

Nombre: Denisse Camhi
Mail: denissecamhi@uc.cl

Student note: Estimad@, adjunto el video con los 3 puntos simples. Saludos!



Score

Feedback

1	00:00:00:000	
2	00:00:10:264	
3	00:00:22:997	
4	00:01:04:179	

ASSIST

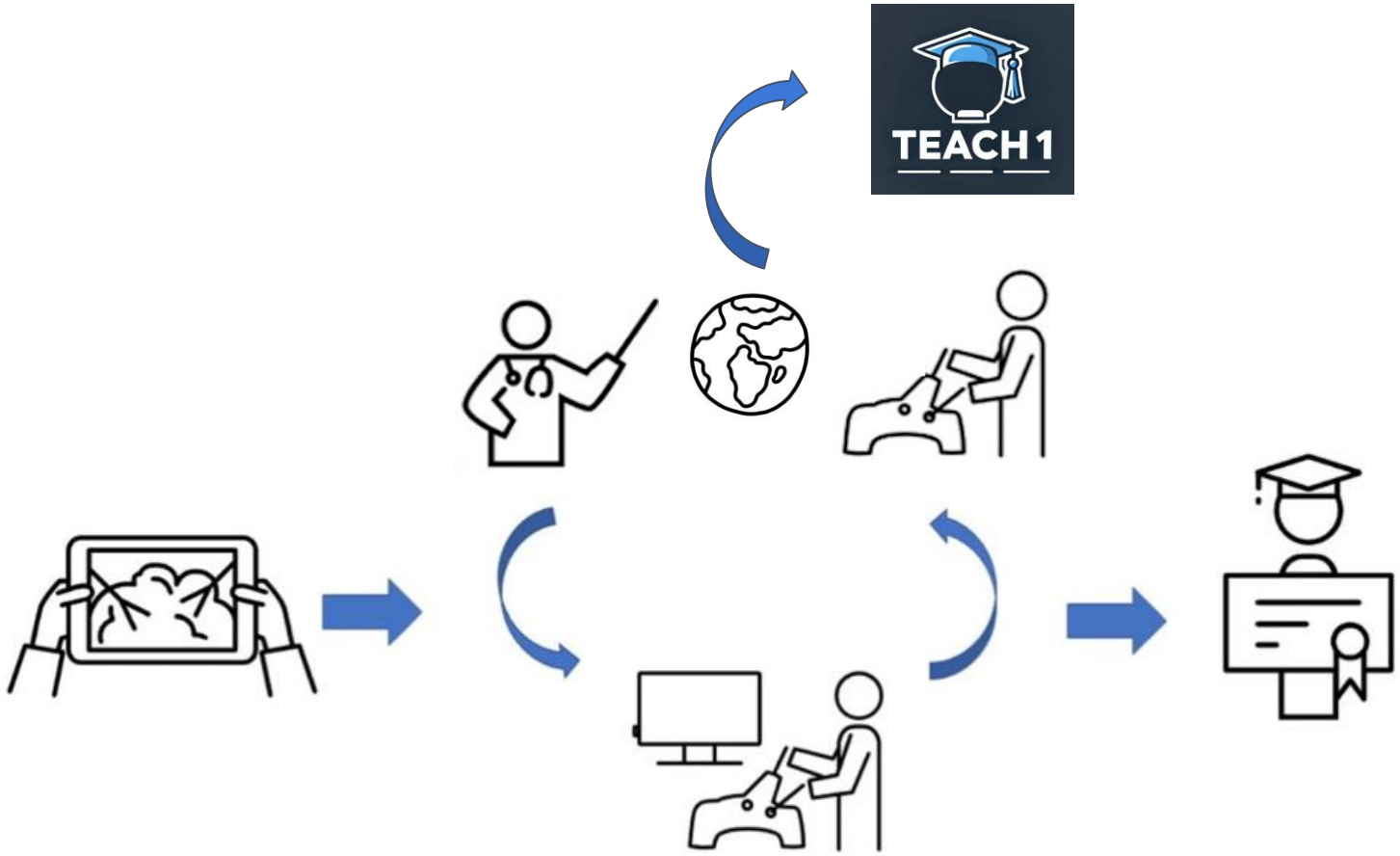
GENERAR RESUMEN

Results

Virtual format supports deliberate practice within a flexible, self-paced setup.

Video submissions and expert feedback ensure the LRYGB Program not only builds surgical skills but also suggests future real-surgery corrections

AI tools can enhance feedback



Duran, V., Belmar, F., Jarry, C., Gaete, M. I., Montero, I., Miguieles, M., Valencia, B., Escalona, G., Achurra, P., Quezada, N., Crovari, F., & Varas, J. (2023). Five-year experience training surgeons with a laparoscopic simulation training program for bariatric surgery: A quasi-experimental design. *Obesity Surgery*. https://doi.org/10.1007/s11695-023-06616-0

Conclusion and projections

Remote LRYGB simulation training is feasible. Expanding access and merging virtual learning, providing a dynamic, self-paced educational setting

Currently, AI based tools can automatically assess basic laparoscopy task in the simulated environment and in experimental fields have been able to identify bariatric-metabolic surgery steps

Regarding feedback, our platform permits the delivery of remote and asynchronous feedback, enhanced with an AI tool

Merging this advances and implementing them on this LRYGB training, can be a promising integration to scale automated bariatric-metabolic surgery training