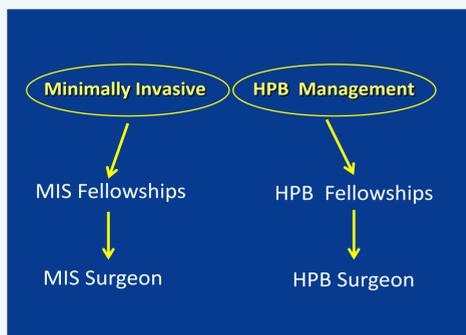


# Minimally Invasive Surgeon in Hepatopancreatobiliary Surgery Fellowship: One Academic Center's Model

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## Introduction and Background

- The development of Minimally Invasive Surgery (MIS) over the last 30 years is one of the most significant improvements in recent surgical history with proven benefits to patients (1).
- There was little enthusiasm for adopting the MIS techniques in complex Hepato-Pancreato-Biliary (HPB) procedures.
- One of the most significant barriers to increased utilization of MIS techniques in complex HPB procedures appears to be training.
- MIS skills for complex Gastrointestinal (GI) reconstructions are typically acquired during MIS fellowship.
- Multidisciplinary management and knowledge about HPB diseases is typically acquired through HPB fellowship.



## Methods

- One way to master both is to have one individual surgeon performing two fellowships.
- The Penn State HPB fellowship has trained a total of five fellows, four of them with formal MIS fellowship training including the current fellow.
- To further analyze this model we performed a survey of the Penn State faculty and the Penn State fellows with formal MIS training.

## Results

### Faculty

Do you believe in advancing MIS techniques for HPB diseases?	Yes	No	
	4	0	
Previous MIS training of the faculty?	Residency	MIS fellowships	Mini fellowships/Courses
	1	0	3
Number of MIS cases done during residency?	Less than 100	100-200	More than 200
	2	2	0
Number of MIS cases for HPB done during your fellowship?	Less than 25	25-50	More than 50
	3	1	0
Number of MIS Cases for HPB a year in your practice before adopting the MIS/HPB model?	Less than 25	25-50	More than 50
	3	1	0
Number of MIS Cases for HPB a year in your practice after adopting the MIS/HPB model?	Less than 25	25-50	More than 50
	0	4	0
Reason for the changes in MIS/HPB Case numbers	Availability of MIS trained fellow	Increase Interest	Marketing
	4	4	4
What do you think the best sequence for the two fellowships?	MIS >> HPB	HPB >> MIS	
	4	0	

### Fellows

What is the reason of performing two fellowships?	Advise by Mentor	Interest in MIS/HPB	Need for more training
	1	3	0
Number of MIS cases for HPB in MIS fellowship?	Less than 25	25-50	More than 50
	3	1	0
Number of MIS cases for HPB in HPB fellowship?	Less than 25	25-50	More than 50
	0	3	1
Number of MIS cases for HPB disease since practice?	Less than 25	25-50	More than 50
	2	1	0
Do you think doing 2 fellowships helped you to utilize MIS techniques in HPB diseases?	Yes	No	
	4	0	
Would you recommend doing an MIS fellowship to mentees interested in HPB surgery?	Yes	No	
	4	0	
What do you think the best sequence for the two fellowships?	MIS >> HPB	HPB >> MIS	
	3	1	

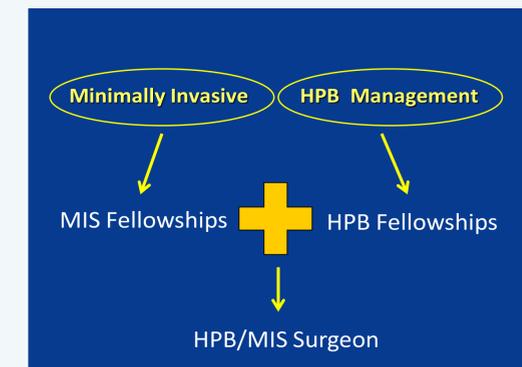
## Discussion

- Most MIS fellowships concentrate on minimally invasive management for benign diseases (2).
- Program directors of some HPB surgery fellowships (3) have incorporated a 1 month minimally invasive surgery rotation with the bariatric service in their HPB fellowship curriculum in order to help the HPB fellow improve his/her laparoscopic skills.
- The Penn State HPB surgery fellowship is a one year clinical fellowship that was established in 2006; it is one of the first HPB fellowships accredited by the Fellowship Council and the AHPBA.
- The survey indicated that all faculty strongly believe in advancing the MIS approach in HPB diseases in the future.
- All faculty have seen an increase in the number of MIS/HPB cases over the last several years.
- All fellows believed doing two fellowships helped them and would recommend the same for trainees interested in HPB surgery.
- The Penn State HPB fellowship established this model as a potential solution to the low adoption rate of MIS techniques in HPB resections.
- Pioneers of minimally invasive HPB surgery have utilized this approach and done two fellowships.
- This solution may represent the best approach for the future.

## Conclusions

- Lack of well established training programs for MIS-HPB procedures represents a challenge to the current HPB training paradigm.
- Performing two fellowships in MIS and HPB is a potential solution to master the technical skills required for MIS surgery and the knowledge and multidisciplinary approach of the HPB surgeon.

## Penn State Model for HPB/MIS



## References

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