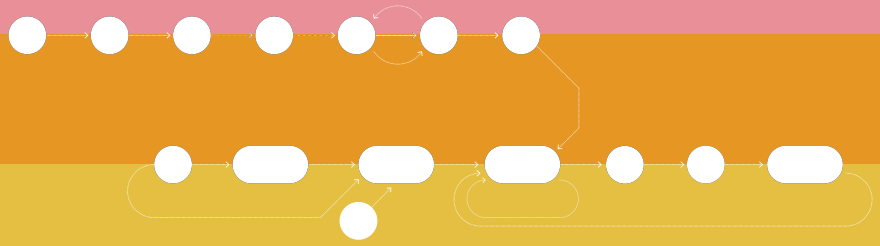
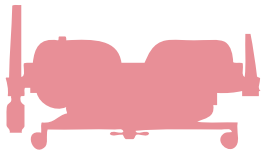
# The HCC Ecosystem



# Introduction

This document is a detailed visualization of the HCC ecosystem in China. The information contained in this document is based on interviews with 3 groups of participants in this ecosystem – Patients, HCPs and Hospital administrations/policy makers.

The ecosystem is divided into two journeys. First is the Equipment journey, this contains the interaction between the manufactures, HCPs and Hospital administrations/policy makers. Second is the patient journey, this consists of the exchanges between the patients and the HCPs in the choice of treatment. For particular moments of the ecosystem, there are related insights from our research for the 3 groups of people. These insights provide an understanding of how their behaviors and decision making incentives impact the ablation market in China.



HOSPITALS

HCPs

PATIENTS

# The HCC Ecosystem

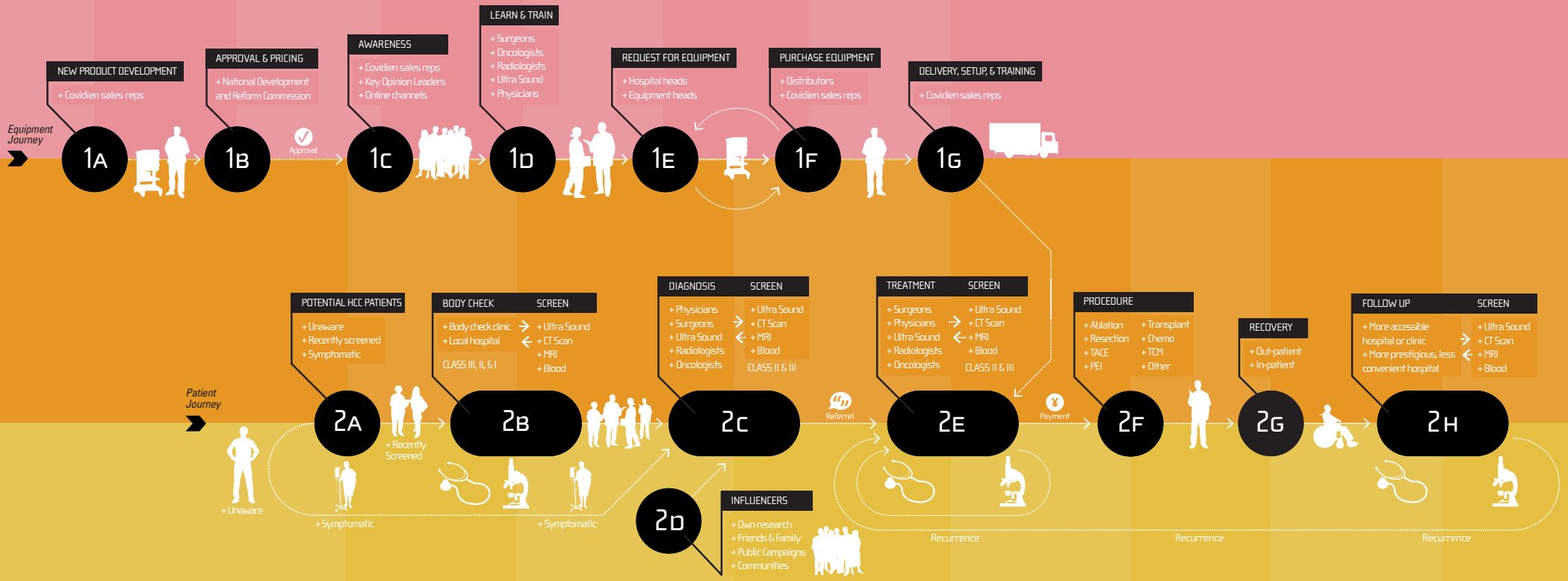
+ = IDEO insights

## Ecosystem Key Learning

+ Surgeons are the gate keepers on HCC treatment options, so patients tend to get resection whenever possible.

+ Ablation is currently a treatment that is associated with late stage cancer.

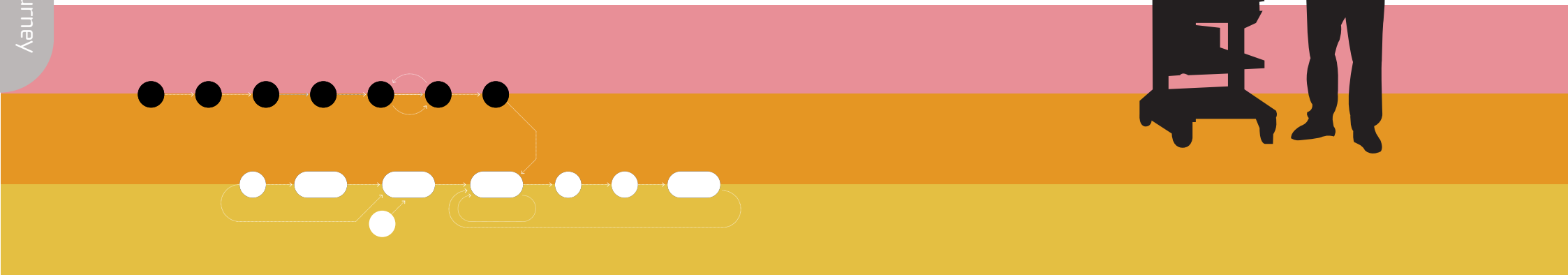
+ Most HCC patients will only accept care in Class III hospitals. TACE is a standard in all Class III hospitals and is implemented at most tumor stages after resection.



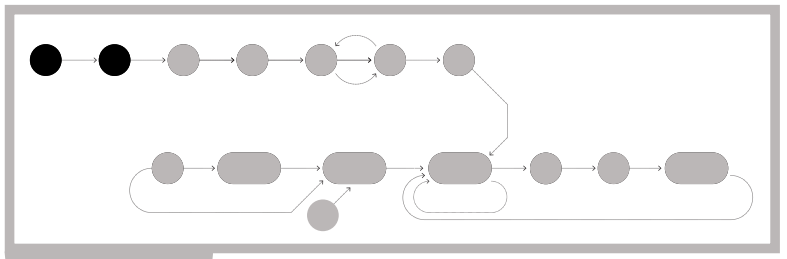

+ = IDEO insights

# The Equipment Journey

The Equipment Journey maps how new ablation technologies move from development and regulatory approval to hospital adoption. It highlights the roles of manufacturers, policymakers, hospital decision-makers, distributors, sales representatives, and clinical opinion leaders in shaping access to equipment across China.




The Equipment Journey



Ecosystem map

Description

Following product development, manufacturers navigate the National Development and Reform Commission process before establishing pricing and preparing sales teams. Regulatory requirements, reimbursement considerations, hospital budgets, and the perceived clinical value of the technology influence how effectively products can enter the market.

APPROVAL & PRICING

+ National Development and Reform Commission

1B

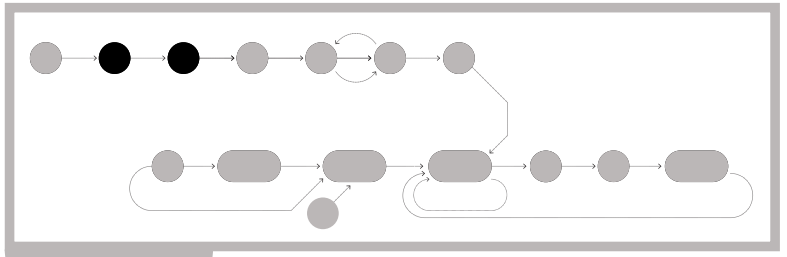
Approval

AWARENESS

+ Covidien sales reps
+ Key Opinion Leaders
+ Online channels

1C

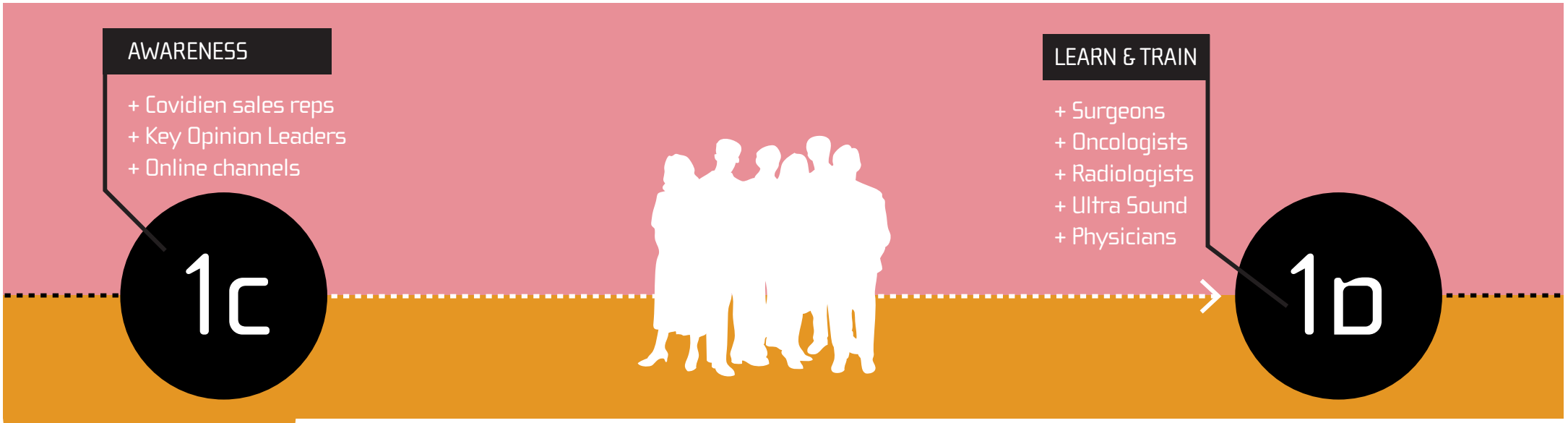
The Equipment Journey



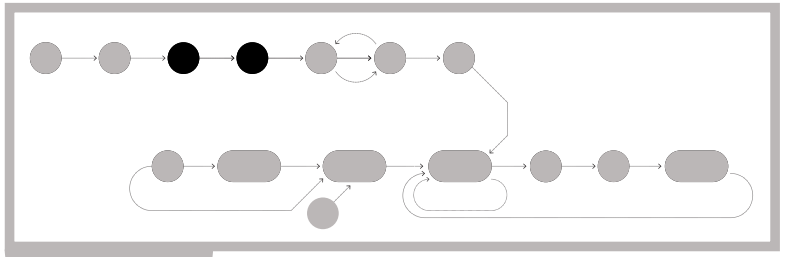
Ecosystem map

Description

Once approved and priced, product adoption depends on building awareness among sales representatives, clinical opinion leaders, and digital channels. Credible evidence, peer endorsement, educational activity, and clear differentiation help translate regulatory access into interest and consideration within hospitals.




The Equipment Journey



Ecosystem map

HOSPITALS

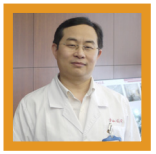
Insight

# Hospitals are interested in carrying out cutting-edge techniques to enhance their 'Brand'.

Quotes

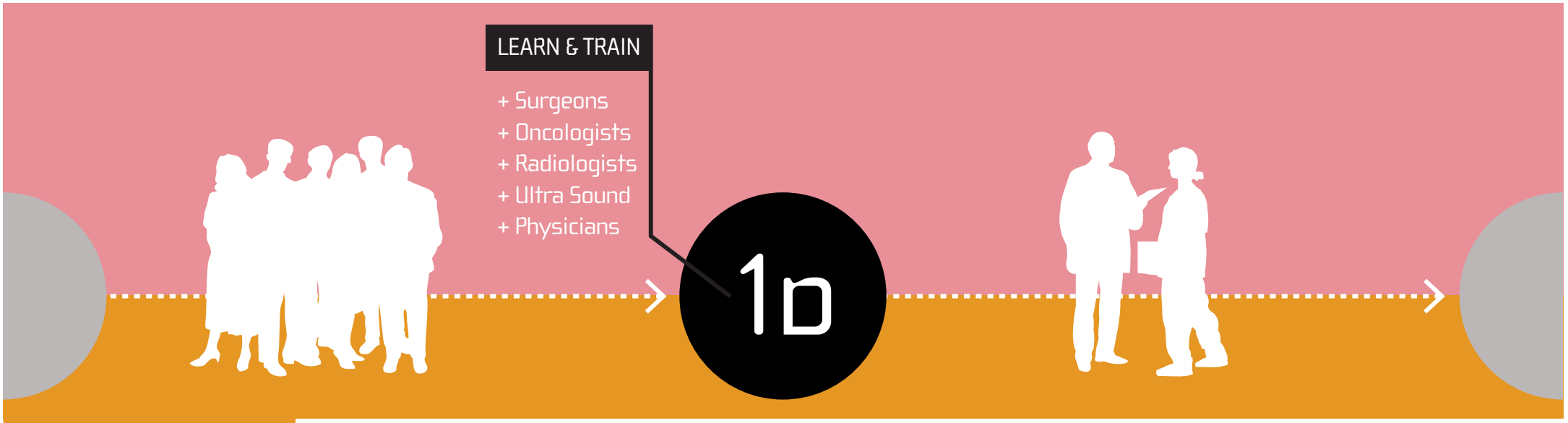
"As a class II hospital, last year we managed to buy an MRI machine, which is a key project in the hospital that symbolizes that we now also have cuttingedge machine and upgrade in our image."

**Dr. Zheng**, *Radiologist, Chang zhou wu jin hospital (class II)*



"We have world class equipment in our hospital. For example, we have the latest Da Vinci robot in our surgeon department... we have ablation machine in different departments – surgoen, physician, interventional department, etc.."

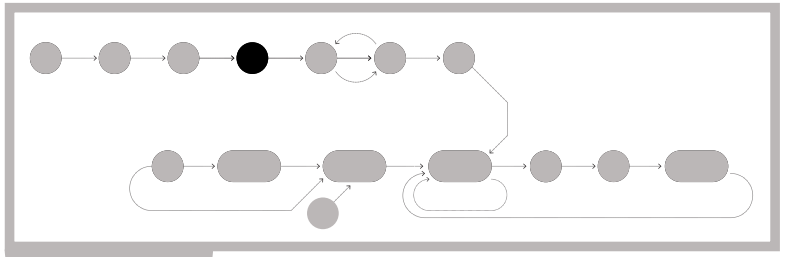
**Dr. Zhu**, *Associate head, Zhong shan hospital (class III)*




The Equipment Journey

Insight

# The Covidien ablation product is perceived as the best in the market in terms of quality and safety.



Ecosystem map

HCPs

Quotes

"I'm not afraid of comparing our product with other brands, because I'm fully confident that our products are good quality and safe. Everytime I am pitching for a new sale, I will bring the doctors to Hua Xi and to some doctors I trust to showcase our machine. In Hua Xi, they have one convidien machine and one other brand, now they use ours only, leave the other one idle."

**Eric**, *Covidien sales rep, Si chuan*

"We use Covidien now. The machine is free for use and we buy electrodes. Everytime we need to use the machine, we call them 1 day in advance and they will get it ready the next day. The service is quite good."

**Dr. Shen**, *Surgeon, Xin hua hospital (class III)*

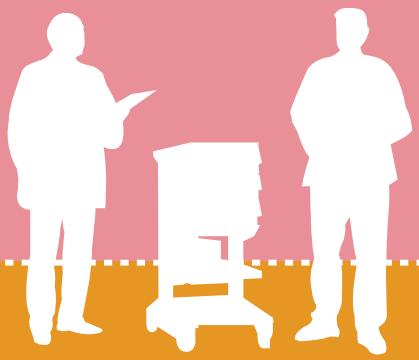
"I know Covidien, the needle is good ."

**Dr. Liu**, *Interventional ultrasound doctor, Yu yi guan (private hospital)*

REQUEST FOR EQUIPMENT

+ Hospital heads
+ Equipment heads

1E

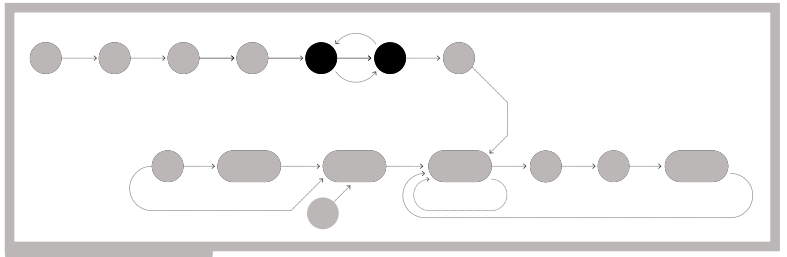


PURCHASE EQUIPMENT

+ Distributors
+ Covidien sales reps

1F

The Equipment Journey



Ecosystem map

HOSPITALS

Insight

# Hospitals want to maximise revenue for the institution and bonuses for physicians.

Quotes

"The system of payment of GPs is similar to that of hospital practitioners - ie, a basic salary supplemented by bonuses according to performance. In popular hospitals and busy specialties, these bonuses may be up to ten times the basic salary"

Source: *www.cma.org.cn/ensite/index/*

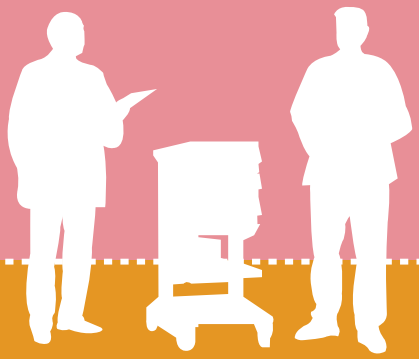
"Usually the margin is very high when it is not covered in medical insurance. Once it is covered, the margin is relatively low. Hospitals tend to prescribe less reimburseable items, which can in return reduce their cost and increase the profit margin."

**Mr. Xu,** *Associate head of Jing An medical insurance* bureau

REQUEST FOR EQUIPMENT

+ Hospital heads
+ Equipment heads

1E

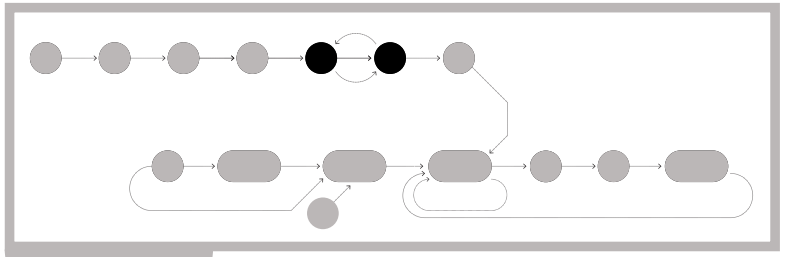


PURCHASE EQUIPMENT

+ Distributors
+ Covidien sales reps

1F

The Equipment Journey



Ecosystem map

HOSPITALS

Insight

Because of the lack of transparency in reimbursement models and the diverse differences in hospital's organization set ups, personal relationships remain the key point of entry for equipment in hospitals. Relationship building is as important as the product offering.

Quotes

"After having a purchase agreement, a department head will calculate the revenue (patients*charge rate) and come up with a budget for the purchase. Then we will work with them to come up with the best price offering to secure the deal."

**Eric**, *Covidien sales rep, Sichuan (class II)*

"Usually the process is that the department head proposes the equipment he wants for the hospital head to approve. Sometimes the department head may nominate one brand, whereas the hospital head may have another brand in mind, which totally depends on who they are approached by. That's why we also need distributors, as we can have a wider network."

**Eric**, *Covidien sales rep, Sichuan*

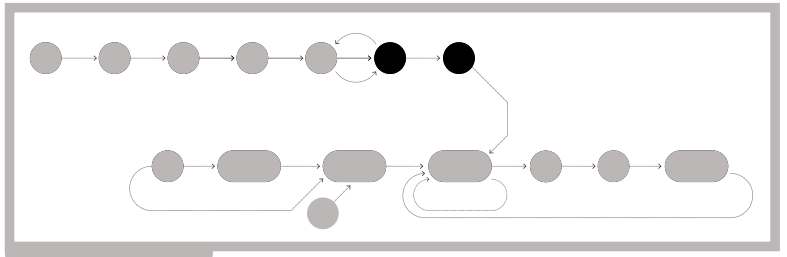
"In our hospital, many departments have ablation machines, surgeon, physician, ultrasound….they all have their own demand and source of information,"

**Dr. Zhu**, *Hospital head, Zhong shan hospital (class III)*

"The surgeon department in our hospital bought the ablation machine at that time because one VIP needs ablation for his treatment. It took only a few days to settle everything."

**Dr. Zhou**, *Ultrasound doctor, Chengdu No.3 hospital (Class III)*


The Equipment Journey



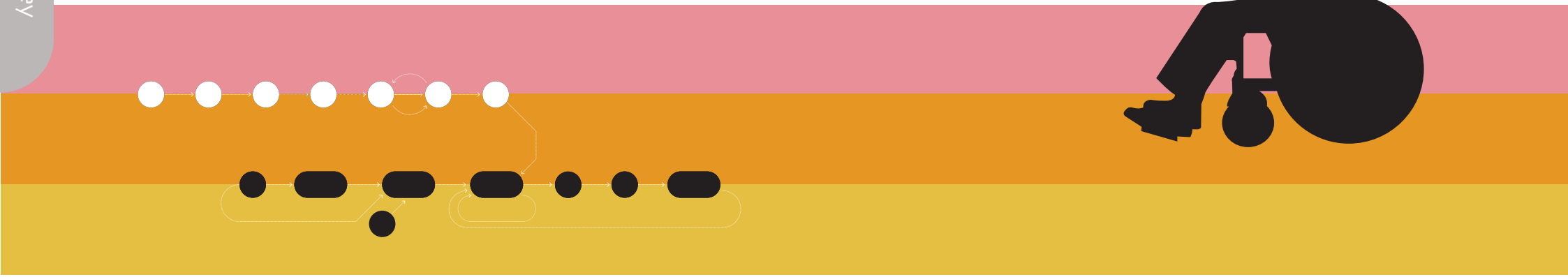
Ecosystem map

Description

When hospital and equipment leaders identify a need for new technology, distributors and sales representatives support the purchasing process. Procurement is shaped by budget availability, tender requirements, clinical demand, administrative approval, distributor relationships, and confidence in the product's operational and patient value.

# The Patient Journey

The Patient Journey follows the path from potential HCC risk and early detection through diagnosis and treatment selection. It illustrates how patient awareness, screening access, physician referral patterns, diagnostic capability, and clinical recommendations shape opportunities for timely ablation treatment.

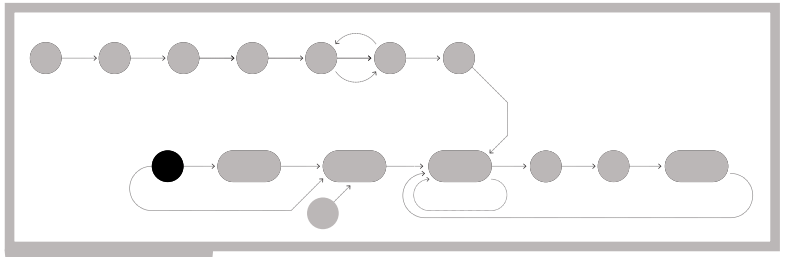


POTENTIAL HCC PATIENTS

+ Unaware
+ Recently screened
+ Symptomatic

2A

The Patient Journey



Ecosystem map

PATIENTS

Insight

# Finance is an important factor in patients' decisions.Lots of people believe prevention is not worthwhile, whereas treatment is worth everything.

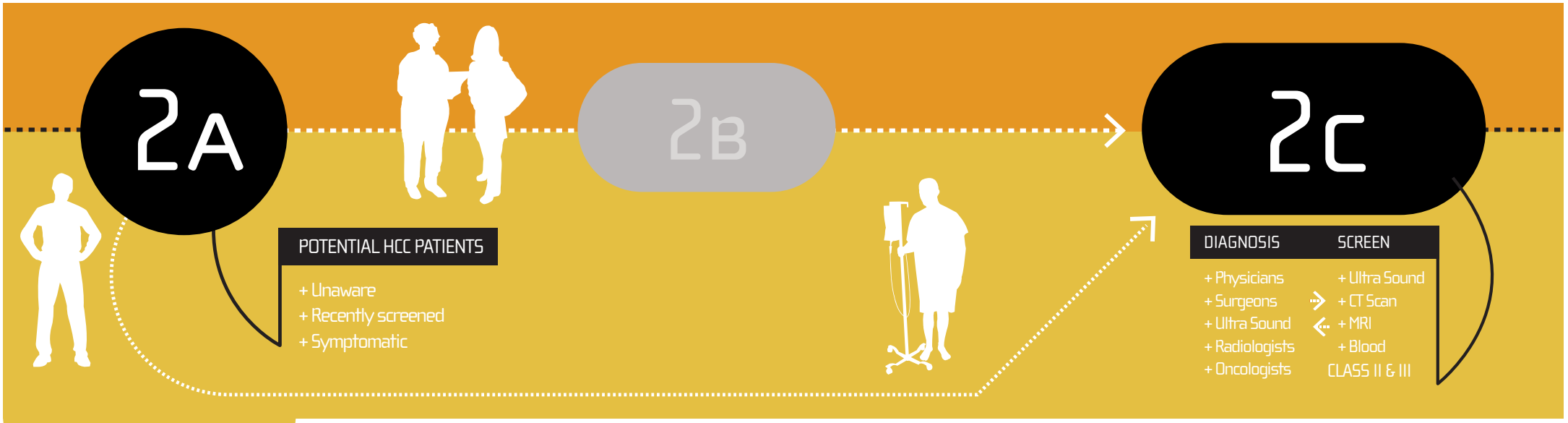
Quotes

"I don't usually go for body check. But last time when I went for screening because my sister had a free quota for that. So I went to Pu dong (quite far from his home) for the free check." "We decided to go for liver transplant, not only because it is the top line treatment but also, more importantly, we can get 300,000RMB reimbursement from his company, which is the maximum range and is appealing."

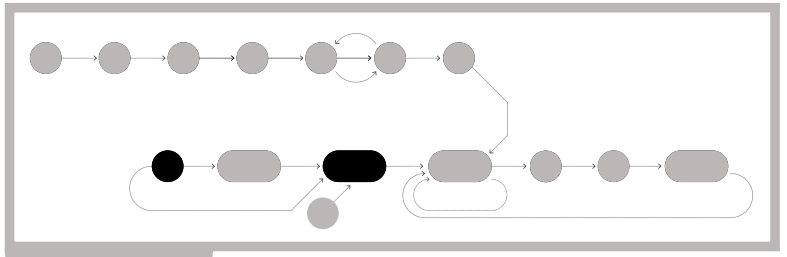
**Mr. Teng**, *Patient*

"Preventional screening is still not that popular here. People consider it's a waste of money for doing regular check. While after they are diagnosed with cancer, they suddenly change into the mindset that they are willing to spend anything on treatment, even getting loans."

**Ms. Chen**, *Nurse in Hua Xi hospital Hepatologist*
inpatient ward, Chengdu




The Patient Journey

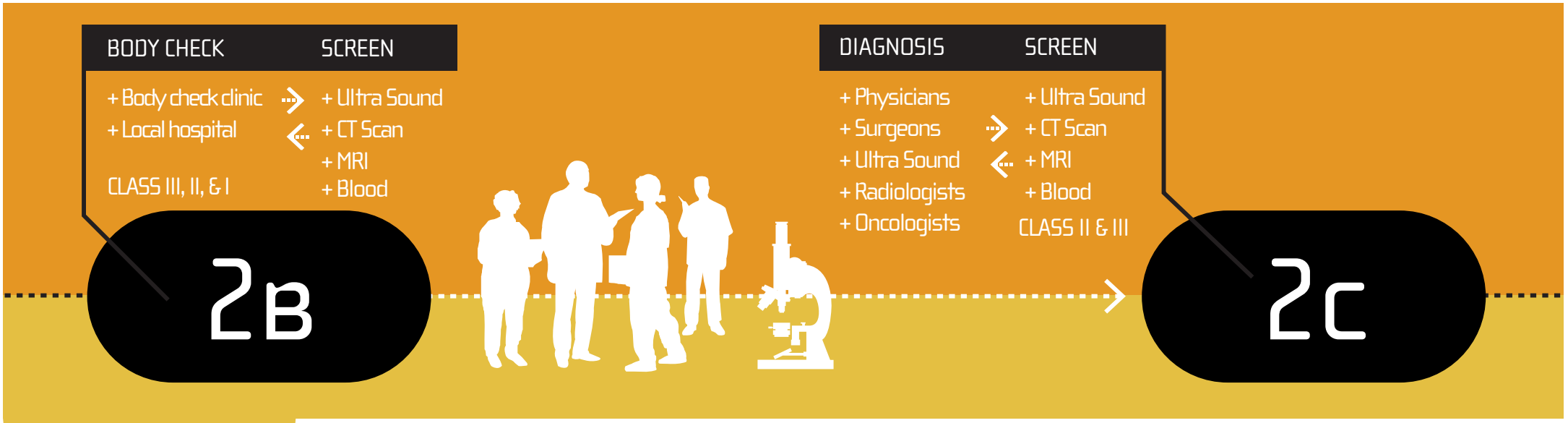


Ecosystem map

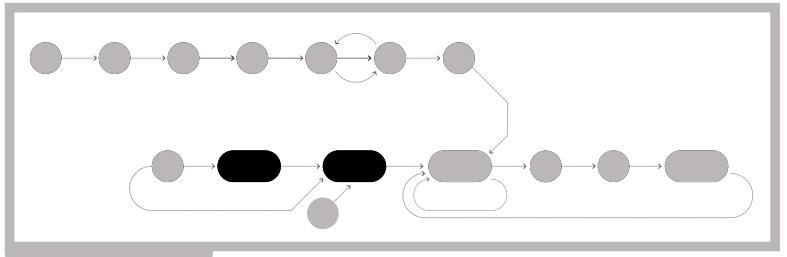
PATIENTS

Description

Many potential HCC patients remain unaware until screening, symptoms, or an unrelated clinical visit prompts further investigation. Physicians, surgeons, ultrasonographers, radiologists, and oncologists play central roles in recognizing risk, confirming diagnosis, and directing patients toward appropriate treatment pathways.




The Patient Journey



Ecosystem map

HOSPITALS

Insight

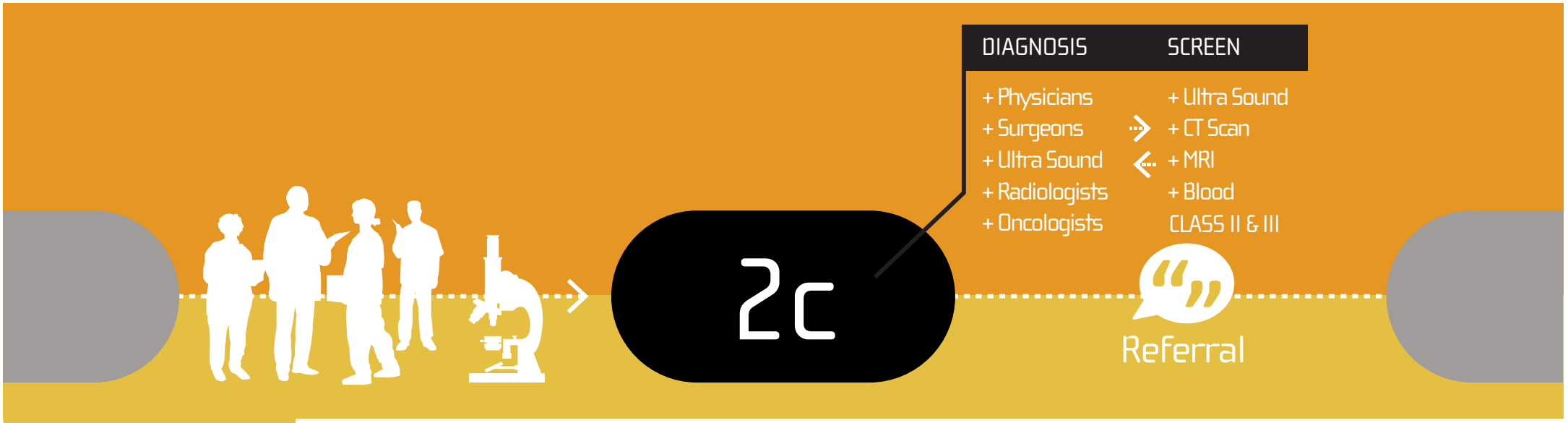
# A Primary Care (Group Alliance) movement strengthening the relationships between Class III and lower classes hospitals is underway.

Quotes

"After resection, and due to the shortage of beds are in short in Chang zhen, I did follow up check in the Zha bei central hospital. It belongs to the group of Chang zhen hospital, so the quality is guaranteed."
**Ms. Hu**, *Patient*

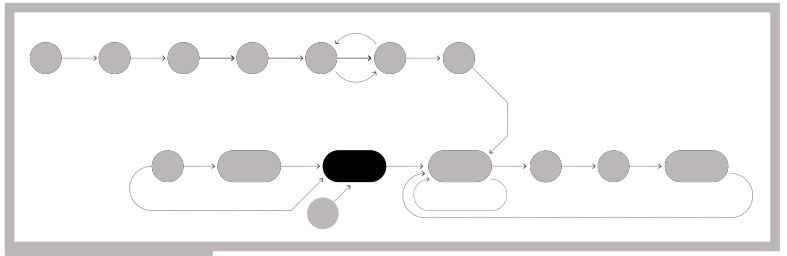
"It is like a satellite radiation, our hospital has connection with some class II hospitals in the city and some other hospitals in places around Chengdu. Then when they have some patients, they might prioritize to refer patients to our hospital."
**Dr. Zhou**, *Ultrasound doctor, Chengdu No.3 hospital (class III)*

"Now we have this group alliance. We put our name in several hospitals in the rural area. So they are kind of under quality control by us, as we often send doctors there to train and help in treating patients. They can also refer patients to our hospital."
**Dr. Wang**, *Interventional radiologist, Shanghai No.1 hospital (class III)*




The Patient Journey

Liver Cancer is perceived as a serious disease; patients therefore want to be treated at the best hospital (Class III) available. Class III hospitals are the authority for liver cancer diagnosis and treatment.



Ecosystem map

PATIENTS

Insight

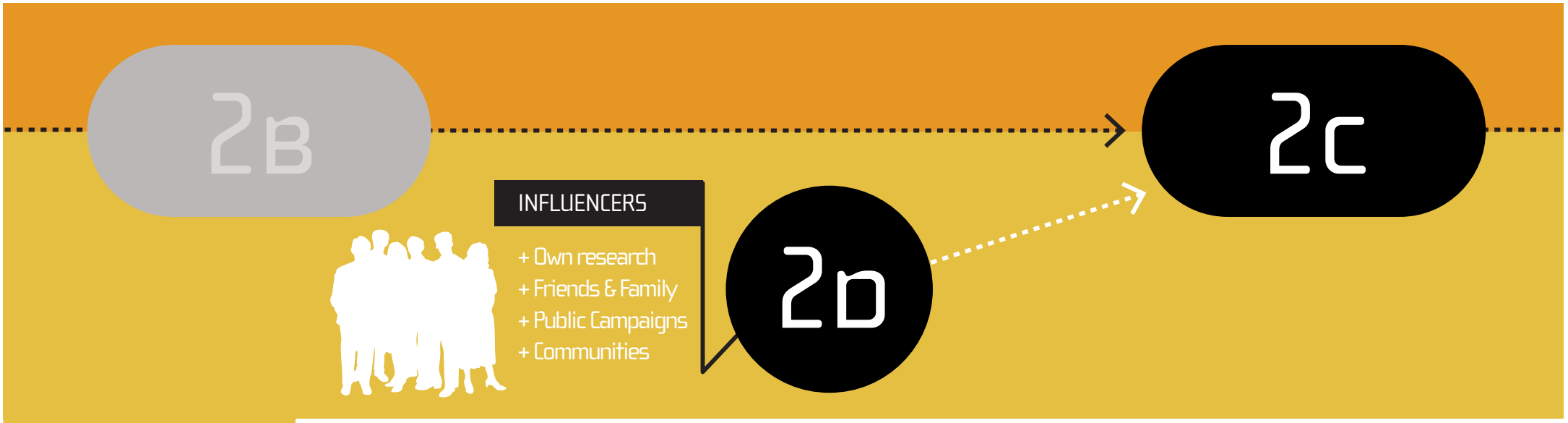
Quotes

"Many of the patients in our hospital (Hua Xi, the best hospital in Si Chuan) come from outside Chengdu. Even they had already been diagnosed in their local class III hospitals, they still want to come to be double confirmed by more authoritative doctors in the best hospital. After seeing the doctor here, they feel relieved since all that can be done has been done, then some might go back to their own place."

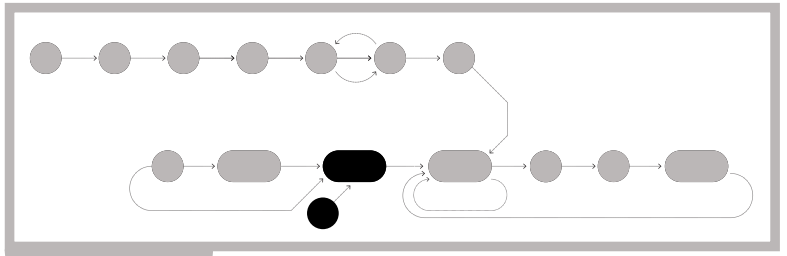
**Ms. Chen**, *Nurse in Hua Xi hospital Hepatologist inpatient ward, Chengdu*

"The community hospitals are just for treating small problems like flu or for prescribing regular medicine. For cancer, you definitely need to go to the best ones."

**Ms. Yu**, *Family of a deceased liver cancer patient*




The Patient Journey



Ecosystem map

PATIENTS

Insight

# Patients trust the 'Brands' of prestigious class III hospitals; there are already big gaps in the level of care amongst class III hospitals, let alone the lower classes.

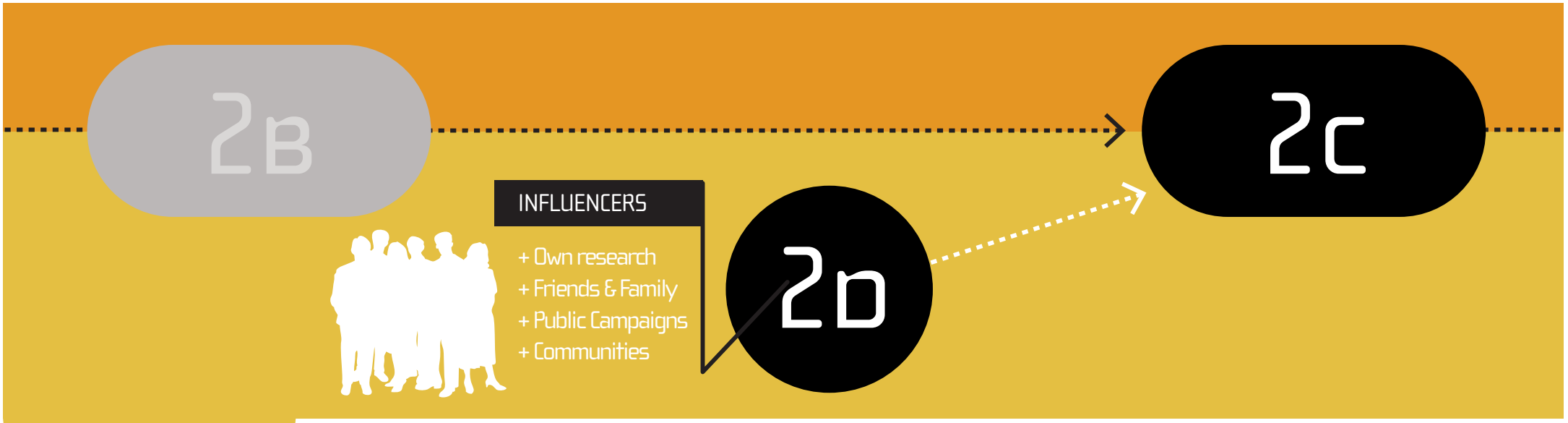
Quotes

"For liver cancer treatment, of course Zhong shan hospital and the Eastern hepatobiliary hospital are the best of the best."

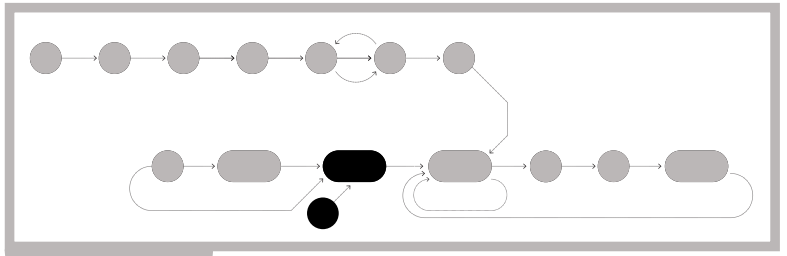
**Mr. Teng**, *Patient*

"My dad was diagnosed in Shu guang hospital as it is the closest class III hospital, and then we moved to Rui Jin hospital, since we know it is the best one in Shanghai. "

**Ms. Yu**, *Family of a deceased liver cancer patient*




The Patient Journey



Ecosystem map

PATIENTS

Insight

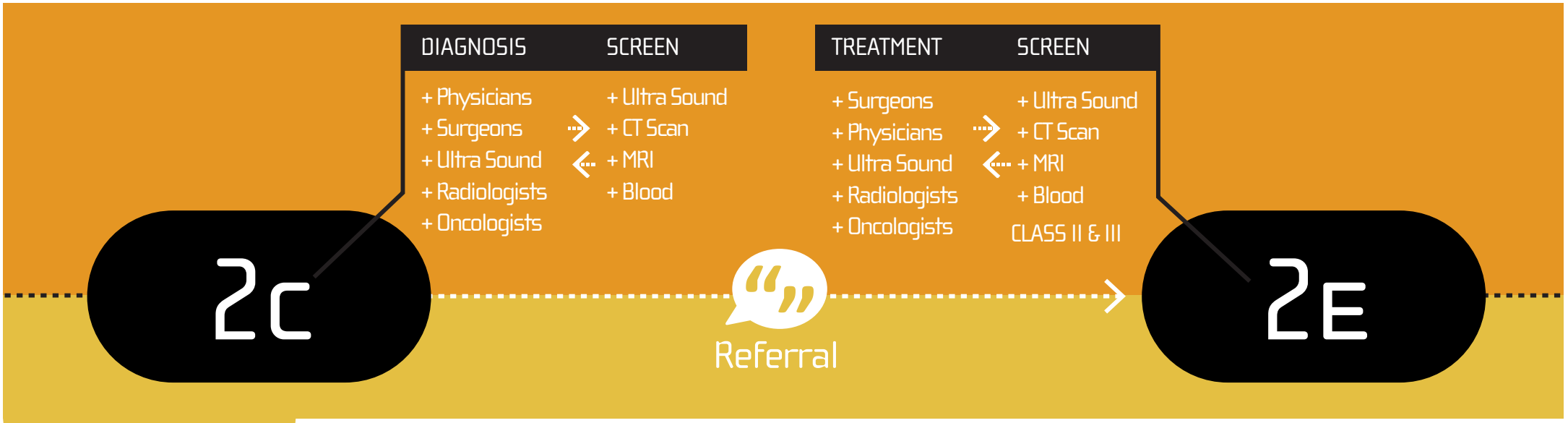
# Though government encourages patients to follow referral systems, people have more trust in referrals based on their personal 'Guan Xi'.

Quotes

"Now I retired from the public hospital and work in the private hospital, but I still constantly get referrals from other doctors who I'm familiar with, both surgeon and physician.They will directly refer their patients to me."
**Dr. Liu**, *Interventional ultrasound doctor, Yu yi guan (private hospital)*

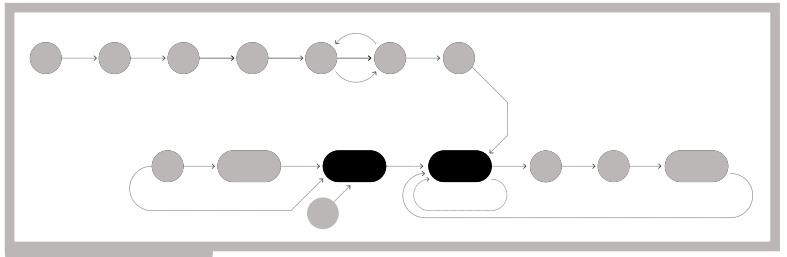
"Then the doctor in the community hospital referred me to this famous surgeon in Chang zhen hospital. He's the one who also did resection for the movie star Fu Biao, so you know how famous he is."
**Ms. Hu**, *Patient*

"My dad went to Shu guang hospital for screening because we know someonethere, who can give us better check. Later when we switched to Rui Jin hospital also because we knew someone there. Because the top hospitals are always running short of beds, you have to know someone to get in. It was also because we know someone inside, we were able to cut short in the waiting list for the liver transplant, which only took us less than a month to wait."
**Ms. Yu**, *Family of a deceased liver cancer patient*




The Patient Journey

# HCPs consider HCC treatments as a hierarchy of treament choice, not an equivalent set of options.



Ecosystem map

HCPs

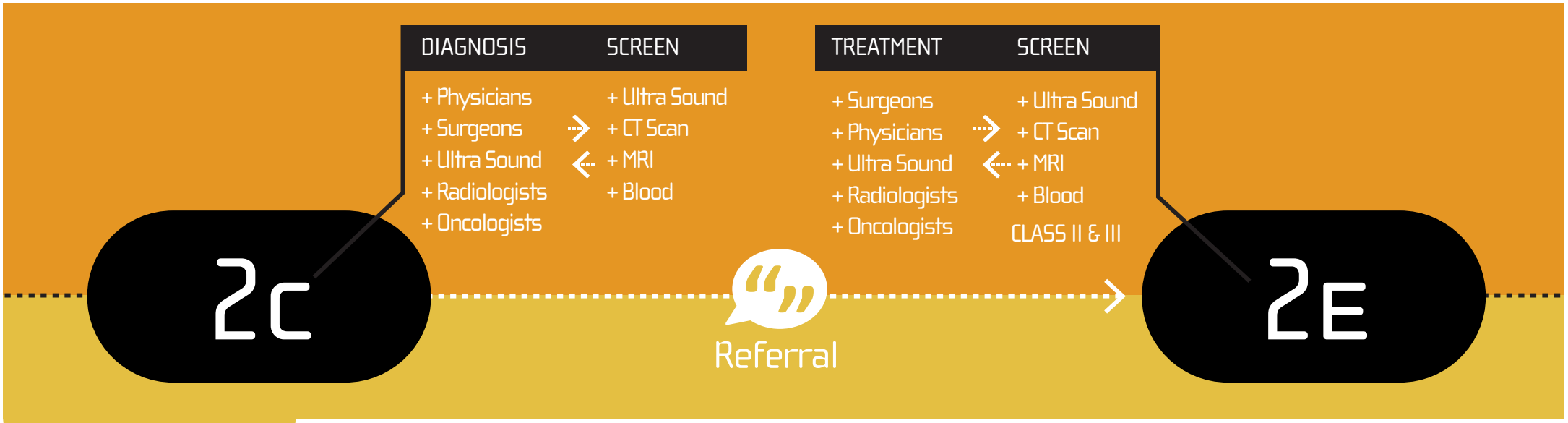
Insight

Quotes

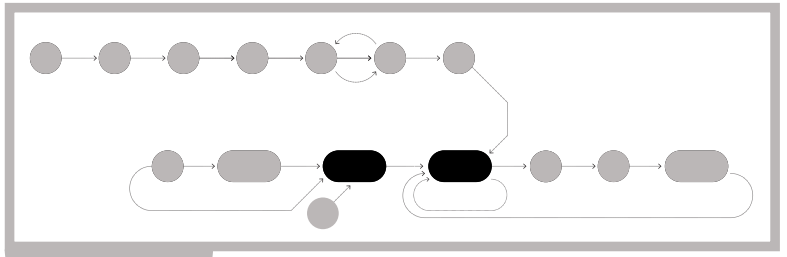
"For patients who can do resection, ie, the liver is good enough for resection and whether big or small tumors, I will definitely forward them to surgeons for resection; for those who cannot do resection, I will suggest palliative treatment. Resection is the only curative treatment, and the rest are just partial and palliative treatment."
**Dr. Chen**, *GI physician, Shanghai No.6 hospital (Class III)*

"If liver and overall situation is good enough, resection is still the first priority. If not resection, then patients will be referred to our department for TACE. If TACE doesn't work, then, well, just try whatever is available eg, PEI, ablation, hifu, etc. "
**Dr. Zhong**, *Oncologist, Shu guang hospital East (Class III)*

"I admit that there is some bias towards resection and ablation. Recurrence after resection can be considered as real recurrence, while recurrence after ablation is considered as residue. This may not be true since they may all be clean, but there is still problem with the blood and body."
**Dr. Shen**, *Surgeon, Xin hua hospital (classIII)*




The Patient Journey



Ecosystem map

HCPs

Insight

# Surgeons are the gatekeepers of HCC treatment choice in hospitals, but Physicians are the gatekeepers for screening and diagnosis. Because of the lack of confidence in non-surgeons to do treatment, surgeons are the referral of choice.

Quotes

"I have lots of long term HBV and cirrhosis patients, who have high chances to transform into HCC. If I could take close track of them, once there is some change in their AFP, I can use some treatment not necessarily refer them to surgeon for resection."

**Dr. Yao**, *GI Physician, Chang Zhen Hospital (Shanghai, Class III)*

"Patients usually come to me when they have not so obvious cancer symptoms, mostly just pain. But when they get diagnosed, most of them are already in their late stage with big tumors. So it's not good for ablation, I either refer them for resection or palliative treatment."

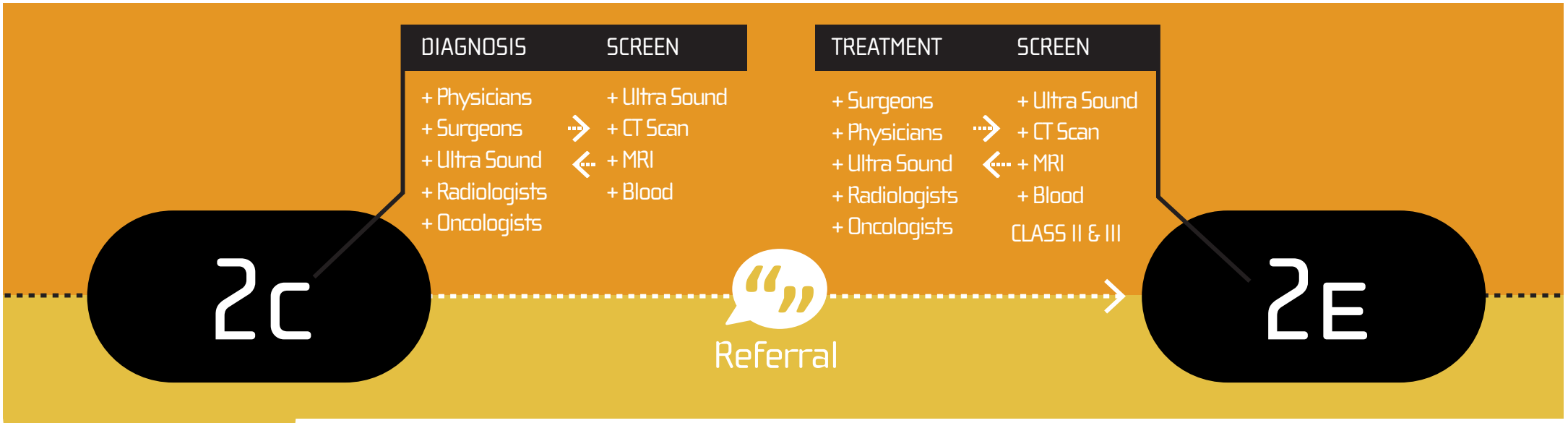
**Dr. Chen**, *GI Physician, Shanghai No.6 Hospital (Shanghai, Class III)*

"Usually patients come or are referred to me after initial diagnosis or with relatively obvious symptoms, they are almost confirmed HCC patients by that time. Then I will decide on the type of treatment. It can be resection, can be ablation, base on their situations"

**Dr. Sun**, *Surgeon, Beijing Chao yang hospital (Class III)*

"It totally depends on what treatment the surgeon decides to go after. We ultrasound doctors don't have direct patients, and we just support the surgeon for what needs to be supported, say, diagnosis, ultrasound during the surgery, etc."

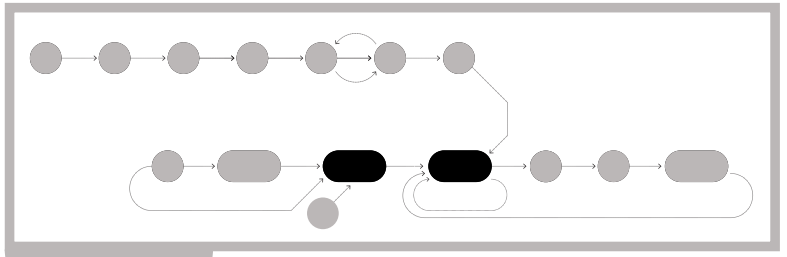
**Dr.Zhou**, *Ultrasound doctor, Chengdu No.3 hospital (Class III)*




The Patient Journey

Insight

Though ablation is much safer than resection or transplant surgery, there is still a sense of risk in ablation. HCPs feel it is necessary to have comprehensive back up support should things go wrong.



Ecosystem map

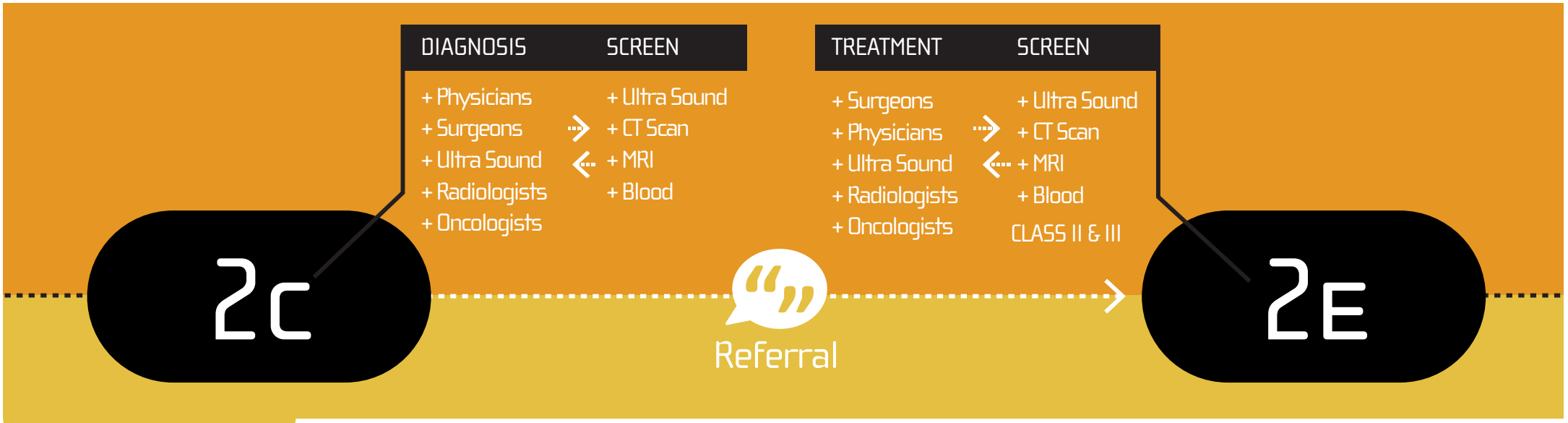
HCPs

Quotes

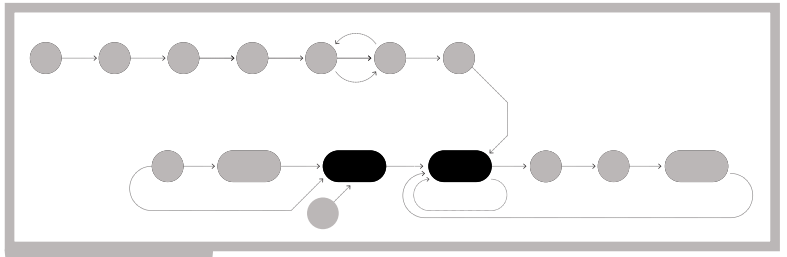
"The idea of mobile ablation clinic (concept 19) is interesting, but there are risk for complication and massive bleeding. This decides that such surgery still needs to be done in a hospital setting with comprehensive support from different departments."
**Dr. Sun**, *Surgeon, Beijing Chao yang hospital (class III)*

"There are still certain level of risk in the ablation surgery. It's not like transplanting a cornea, but it might still cause some complication. That's also why the supporting department doctors like ultrasound or interventional doctors might not handle complicated ablation (eg, liver cancer) because they lack of comprehensive knowledge to deal with potential complication."
**Dr.Yao**, *GI physician, Chang zhen hospital (class III)*

"We have seen the cyst treatment in other body parts such as thyroid, intestine etc. But liver is critical with abundant blood supply, so if not diagnosed precisely, the treatment might cause risk."
**Dr. Chen**, *GI physician, Shanghai No.6 hospital (class III)*




The Patient Journey



Ecosystem map

HCPs

Insight

Ablation technology has a well established position in the HCP's hierarchy of treatment choice. The lack of uptake in Ablation is not only due to cost and technological limitations, but its association with recurrence treatments and the small window of opportunity for small tumors.

Quotes

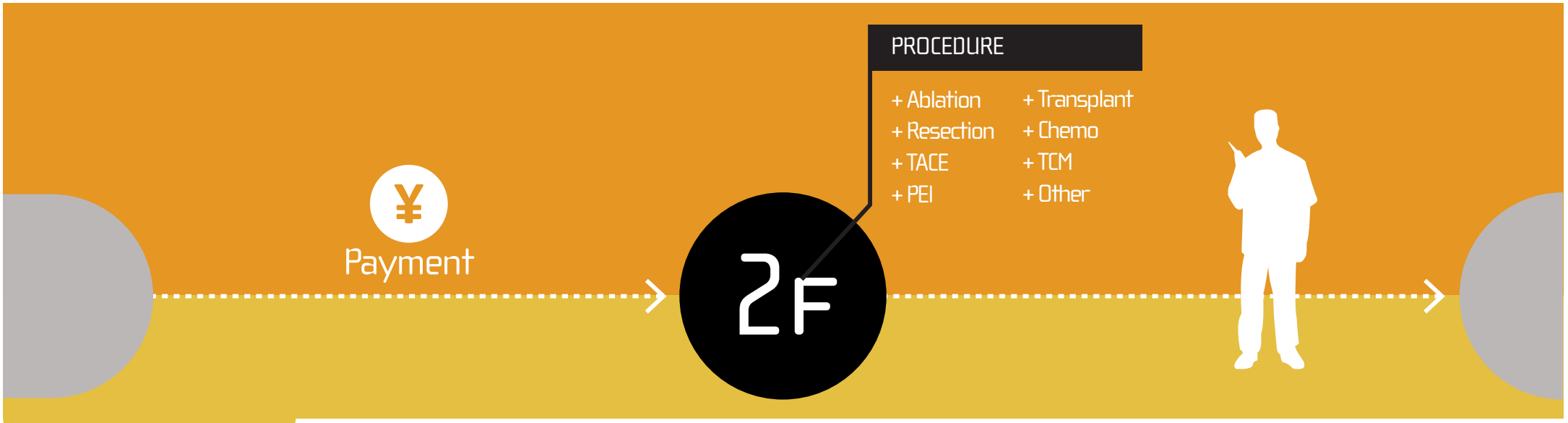
"Now as I think it over again, if I could make a choice again, I wouldn't have had resection, since my tumor is less than 1cm and only one tumor, there must be some other better treatment though the doctor recommended resection." (He had a resection after the transplant)

"I heard from the patients in the same ward that ablation is for small and single tumor. If there's too many tumors, it makes no sense to use ablation, since you cannot clean them altogether."

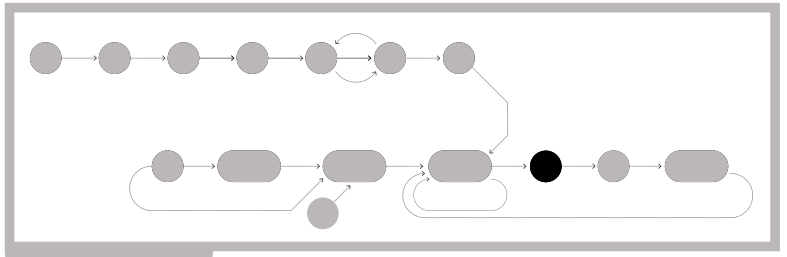
**Mr. Teng**, *Patient*

"Ablation is good for small and single/less amount tumor, but even it is small enough, as long as the patient is good for resection, I would still recommend resection, anyway it is the real cure."

**Dr.Chen**, *GI physician, Shanghai No.6 hospital (Class III)*




The Patient Journey



Ecosystem map

HCPs

Insight

# Imaging does not provide the same level of reassurance as "naked eye" verification

Quotes

"The surgeon decided on open surgery for my mother after the endoscopy diagnosis and some imaging scan. But aftert they cut open, it was surprising that the tumor had already widely metastasized. So the doctor ended up doing nothing but close the tummy.They didn't see this from the imaging at all."

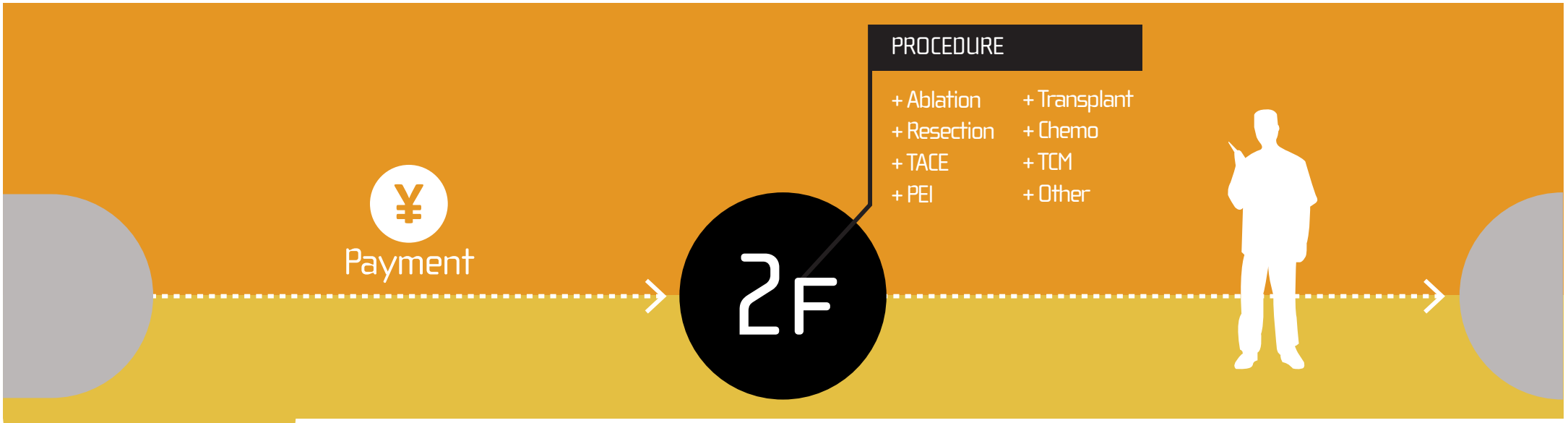
**Eddie**, *Familiy of a deceased stomach cancer patient*

"During ablation, it is possible that the burnt tumor can block the view or that some small or hidden tumors are missed from the imaging.

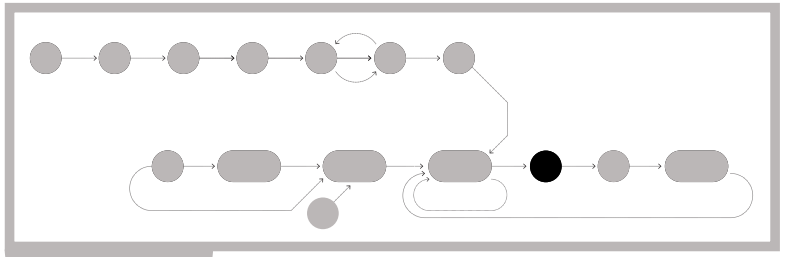
**Dr. Zhou**, *Ultrasound doctor, Chengdu No.3 hospital (Class III)*

"Imaging is not comparative to eyesight, no matter how high tech it is. Once you cut open, you see very clearly where and how big the tumors are."

**Dr. Shen**, *Surgeon, Xin hua hospital (classIII)*




The Patient Journey



Ecosystem map

HCPs

Insight

# Surgeons and physicians often deviate from clinical guidelines for treating HCC.

Quotes

"In our department, we combine traditional Chinese medicine with chemo or TACE, we can even inject TCM into TACE."

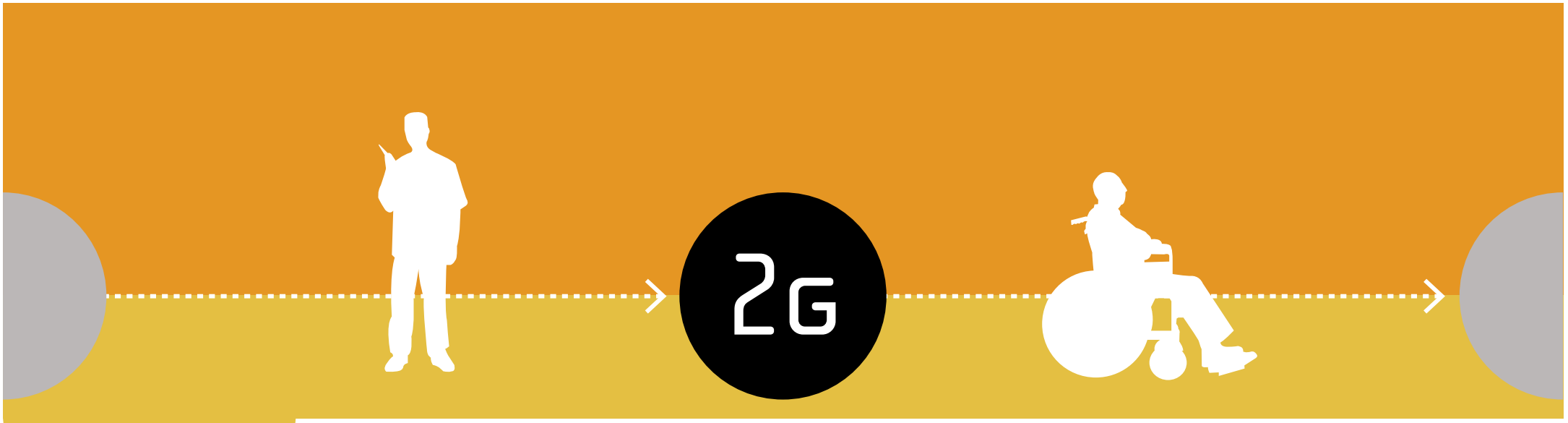
**Dr. Zhong**, *Oncologist, Shu guang hospital East (class III)*

"Chinese doctors have similar skill level as American doctors do, but just that they are influenced by too many things like patients and families, government, etc. Also the guideline is not that well documented."

**Dr. Chen**, *GI physician, Shanghai No.6 hospital (Class III)*

"I sometimes use self-invented treatment. For example I will inject hot water as one type of therma-therapy to some cyst patients."

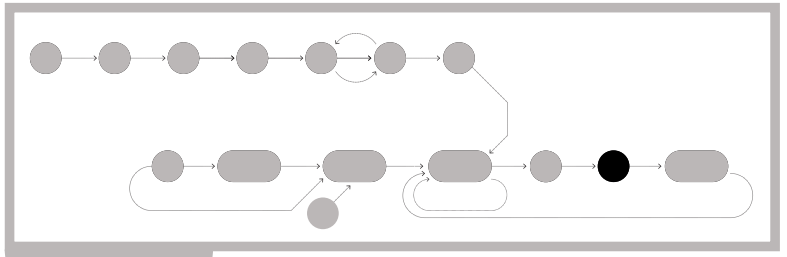
**Dr. Liu**, *Interventional ultrasound doctor, Yu yi guan (private hospital)*




The Patient Journey

Insight

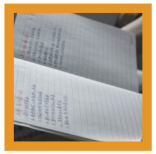
Patients choose the level of the hospitals depending on the perceived level of 'seriousness' of the condition. However, with less serious conditions, patients often prefer the convenience of lower class hospitals.



Ecosystem map

PATIENTS

Quotes



"Our hospital specializes in elderly disease, in particular, diabetics. Most patients here are seniors who come specifically for diabetes-related problems. For cancer, our hospital probably is not the first place people will come to."

**Dr. Ma**, *Associate head of Sichuan No.5 hospital (ClassII)*

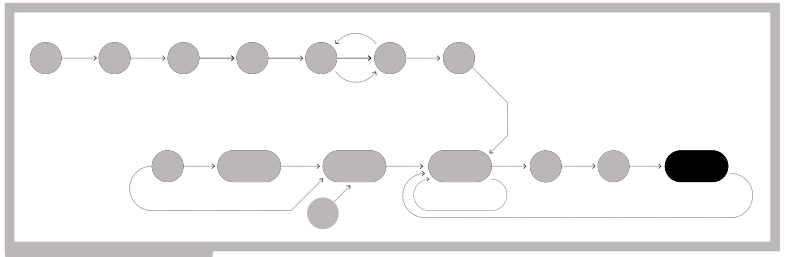
"Since I got cured from the resection, I just went to the Zha Bei Central Hospital (Class II) for follow up check, which is enough I think. I didn't go to Changzhen hospital again until last time I was diagnosed for HCC recurrence."

**Ms. Hu**, *Patient*

| FOLLOW UP | SCREEN |
| --- | --- |
| + More accessible hospital or clinic | + Ultra Sound |
| + More prestigious, less convenient hospital | + CT Scan |
| | + MRI |
| | + Blood |

2H

The Patient Journey



Ecosystem map

PATIENTS

Insight

# Even when told that no treatment will help in very late stage cancer, patients and families are often willing to try several treatments.

Quotes

"The doctor told me that my mother was already in a very late stage of her stomach cancer and could only have palliative treatment like chemo and medicine. Nothing much could be done. Yet me and my wife didn't give up and found some chemo medicine from online with less side effect than injection chemo. We then suggested this to the doctor, so my mom was able to get chemo at home with less pain."

**Eddie**, *Family of a deceased stomach cancer patient*

"After transplant and resection, apart from the treatment suggested by the surgeon, we also went to see the Chinese medicine doctor and took traditional Chinese medicine. It is always good for long term cure and care."

**Mr. Teng**, *Patient*

# Ecosystem Key Learning

+ Surgeons are the gate keepers on HCC treatment options, so patients tend to get resection whenever possible.

+ Ablation is currently a treatment that is associated with late stage cancer.

+ Most HCC patients will only accept care in Class III hospitals. TACE is a standard in all Class III hospitals and is implemented at most tumor stages after resection.