(Source: Sample case from McKinsey website)

Context
The interviewer will typically start the case by giving a brief overview of the context, ending with a question that is the problem definition. At the end of the description you will have an opportunity to ask any questions you might have to clarify the information that has been provided to you.

> **Our client is Magna Health, a health care company in the Midwest. It both insures patients and provides health care services. Employers pay a fixed premium to Magna for each of their employees in return for which Magna covers all necessary health services of the employee (ranging from physician care, and medications to hospitalization)**
>
> **Magna currently has 300,000 patients enrolled in its plan. It has 300 salaried physician employees who provide a broad range of services to patients in 6 centers. These physicians represent a wide range of specialty areas, but not all areas. When a patient needs medical treatment in a specialty area not covered by a Magna physician, they are referred outside of the Magna network for care, and Magna pays all referral costs on a fee-for-service basis. Magna doesn't own any hospitals itself, instead contracting services from several local hospitals.**
>
> **Over the past six months, Magna has been experiencing declining profitability. Magna's CEO has retained McKinsey to help determine what is causing the problem and how Magna might fix it.**
>
> **How can Magna Health improve its financial situation?**

Interviewer: How should Client determine how to improve its financial situation?

Some possible areas are given below. Great job if you identified several of these and perhaps some others.

- Magna's revenues
  - Price paid by employer for employee health coverage.
  - Number of employees covered by Magna.
- Magna's costs (or fixed and variable costs)
  - Magna's main cost components consist of administrative (non-medical) and medical costs (e.g., hospital, drugs, outpatient care)
  - Outpatient costs can be split into internal physician costs versus external referral costs

Magna's patient base demographics/overall risk profile which may affect medical costs

Interviewer: The team discovers that the demographics of Magna's subscribers have changed significantly in the past 5 years, from majority industrial workers/laborers to majority office employees. Knowing this, are there any specific areas you would investigate first?

We are looking for a few responses, similar to the ones below:

- Claim costs, as the change in the subscriber base will change the profile of diseases (e.g., more heart disease/stress and less work related injury)
- External referral costs, due to the change in the disease profile for which they have in-house competency

Interviewer: After reviewing the basics of Magna's business, your team believes that one of the root causes of Magna's financial problems is how it manages medical costs, particularly the cost of referrals to specialists outside of its physician network. Your team has gathered the following information on Magna and its primary competitor, Sunshine HMO:

	Number of patients	**Average cost of referral(per member per month)**
Magna Health	**300,000**	**$20**
Sunshine HMO	**500,000**	**$15**

What are the most likely reasons that the average cost of referral at Magna is higher than at Sunshine? (At this point you should feel free to offer hypotheses, and you could ask your interviewer questions to clarify the information)

A good answer would include some of the following suggestions:

- Referral pricing: Magna might be paying more than Sunshine for specialist services (e.g., its outside contracts with oncologists might be at higher rates than Sunshine's contracts).
- Number of referrals: Magna's physicians might have different practice patterns than Sunshine physicians, i.e., they may be less comfortable treating heart disease patients or have different training/protocols.
- Mix of specialties: Magna's mix of specialties that requires referrals (cardiology and neurosurgery) are probably more expensive specialties (than cardiology and psychiatry, Sunshine's referral specialties).
- Mix of patients: Magna has sicker or older (>65) patients (individuals over 65 are more likely to need medical care in the specialty areas outside of Magna's network, particularly cardiology).

Interviewer: What analyses would you do if the things you suggest were contributing to this problem?

You might take the following approach, where we've outlined different areas of analysis:

- Referral pricing:
  - Gain data on prices currently being paid by Magna for a sample of common specialties
  - Gain similar data for a competitor if possible for an industry average (perhaps through interviews with non-Magna specialists)

- Number of referrals:
  - Interview Magna physicians and non-Magna physicians to see if any obvious behavioral differences exist
  - Consult industry publications on this issue

- Mix of specialties:
  - Check number of referrals by specialty for Magna and estimate similar for Sunshine
  - Interviews with external specialties used by Sunshine may help again here

- Mix of patients:
    - Compare demographic data for Magna and Sunshine: should be easy to obtain from Magna; a scan of the employee schemes covered by Sunshine should give a good general picture of their demographic profile
    - See if Magna's referral cost has increased in line with the change in demographics of the subscribers

(**Helpful Tip:** In giving the answer, it's useful if you are clear about how the analysis you are proposing would help to answer the question posed.)

Interviewer: Magna's CEO has a hypothesis that Magna is paying too much in cardiology referral costs for its patient population. He asks the McKinsey team to look at Magna's cardiac patient population more closely and tell him how many referrals he should expect on an annual basis. Assume the following:

- **Magna has 300,000 patients in any one year**
- **20 percent of its patients are age 65 or older**
- **In the U.S., patients with serious heart disease visit specialists (cardiologists) on average of five times per year**

You should always feel free to ask your interviewer additional questions to help you with your response. In this case, you should recognize the need to know the prevalence rate of serious heart disease to complete this calculation. Once asked, your interviewer would provide you with the following information:

- **The prevalence rate of serious heart disease in the 65+ population is 30 percent**
- **The prevalence rate of serious heart disease in the under age 65 population is 10 percent**

Based on the correct calculations, your response should be as follows: Magna should expect 210,000 cardiac referrals annually based on its patient population. You should have approached the calculations as follows to arrive at that answer:

- 300,000 total patients
- 20 percent x 300,000 = 60,000 patients age 65+
- 18,000 x 5 = 90,000 referrals per year
- 240,000 Magna patients under the age of 65
- 240,000 patients x 10 percent = 24,000 patients under age 65 with serious heart disease and 24,000 x 5 visits per
- year = 120,000 visits per year total
- 90,000 + 120,000 visits per year = 210,000 total Magna patient external cardiology visits

Interviewer: When the team tells Magna's CEO that based on Magna's patient population he should expect about 210,000 cardiology referrals a year he exclaims, "We currently pay for 300,000 annual cardiology referrals for our patient population!"

Why might Magna's annual cardiology referrals be significantly higher than U.S. averages? What would you do to try to verify if any of these were a key cause of this problem?

There are a number of answers to these questions, and you are on the right track if your responses included some of the ones below:

- The prevalence rate of heart disease in Magna's patient population is higher than average. To see if this was a cause of the problem, McKinsey should audit the internal data on heart disease prevalence and compare it to US National data.
- Magna's primary care physicians are referring patients who do not have serious heart disease to specialists. The team should interview specialists to get their opinion, or follow through a sample of patients who were referred.
- Primary care physicians are not comfortable (e.g., they are poorly trained or inexperienced) treating cardiac patients, even those with minor problems; they want to avoid malpractice suits. McKinsey should interview Magna physicians and institute an external review.
- Magna doesn't have clear guidelines on when physicians should be referring patients to specialists (or if guidelines exist, physicians are not complying with them). The team should gain an expert opinion on the current guidelines to see if this was a key cause of the problem.
- There are no incentives or penalties to prevent physicians from referring patients with less serious problems to specialists. In order to verify this is a key cause of the problem, the team should review incentive schemes if they exist. They should also compare similar companies/situations (e.g., prescription control mechanisms, etc.).

Interviewer: At this point in the study, you bump into Magna's Head of Health Services in the corridor. He is responsible for all matters related to the provision of services to subscribers, both inside and outside the Magna Network. He asks you if you have made any progress. How would you respond?

The ability to come to a logical, defensible synthesis based on the information available at any point in an engagement is critical to the work we do. Even though we'd consider ourselves to be early in the overall project at this point in the case, we do want to be able to share our current perspective. One ideal answer would include the following points:

Findings

- We have investigated all the drivers of profit for Magna. Although there is likely to be room for improvement in a lot of areas, it seems the claims cost is a big area for improvement.
- Relative to the market and to competitors, Magna seems to have high claims cost per patient. Our initial indication is that there may be highest room for improvements in the cost of referrals outside the network.
- There are a number of reasons as to why this may be happening (list as in previous question).

Next Steps

- We are working to pin down the most significant reasons why Magna has high claims cost per patient.
- We are going to be looking into other areas such as reduction potential in other costs, as well as improvement potential in terms of premiums or other sources of revenue.

Interviewer: After some additional investigation, your team decides that changing the behavior of Magna's primary care physicians has potential to reduce cardiac referral costs while maintaining high quality care. The team believes that introducing some sort of incentive plan for physicians might help reduce the referral rate. You propose the following pilot plan:

- **Magna pays bonuses of $100,000 per year to each of the 10 primary care physicians with the lowest cardiac referral rates consistent with good patient outcomes.**
- **Magna increases overall fees paid to primary care physicians to handle more of their patients' basic cardiology needs. Overall fee increases would total $1 million.**

How many fewer cardiology referrals will Magna need to have in order to recoup the cost of the pilot incentive plan? For simplicity's sake assume:

- **The cost of a cardiology referral is $200.**
- **Magna currently has 300,000 cardiology referrals per year.**

If the incentive plan reduces cardiology referrals by 3.3 percent or 10,000 referrals, Magna will recoup the cost of the incentive plan. One potential approach to the calculation:

- $1 million + (10 * $100,000) = $2 million for incentive plan
- $2 million/$200 =10,000 referrals
- 10,000 referrals/300,000 total referrals = 3.3 percent reduction would pay for incentive program

Interviewer: Your team projects that the incentive plan has the potential to reduce referrals by 5 percent in its first year, and an additional 2 percent in its second year. If these projections are correct, by how much would Magna's referral costs be reduced over a two-year period with this program?

Referral costs would be $4.14 million lower in the second year. Over the two years Magna would save $7.14 million. One potential approach to the calculation:

Year 1 Savings with Program

- 300,000 total referrals
- 5 percent reduction in referrals = 15,000 referrals
- 15,000 x $200 = $3.0 million in savings in year 1

Year 2 Savings with Program

- 285,000 total referrals
- 2 percent reduction in referrals = 5,700 referrals
- 5,700 x $200 = $1.14 million in savings
- $3 + $1.14 = $4.14 million in savings

Therefore, total cumulative savings over the 2 years = Year 1 savings + Year 2 savings = $3.0m + $4.14m = $7.14m.

Interviewer: Your team presents its physician incentive proposal to Magna's CEO. The CEO, in consultation with his Medical Director, agrees that this is feasible and says that they will pilot it for cardiac referrals.

At the end of the meeting the CEO says, "I like the work you've done, but it's not enough to address our current financial situation. Physicians are professionals who care deeply about patient care and I think there's a limit to how much cost we can expect to reduce utilizing financial incentives exclusively. Besides cardiac financial incentive programs, what other ideas should we consider to reduce the cost of Magna's specialist referrals?"

Based on what we have discussed today, and any other ideas you might have, how would you respond to the CEO?

This question is a good one for demonstrating creativity because there's a long list of possible ideas. You might give some of the following responses:

- Pursue additional ways to change physician behavior
    - Provide training on how to treat patients with minor or stable medical problems
    - Define and clarify medical guidelines for referrals (e.g., establish a medical committee to define the difference between "serious" and "minor" heart disease)
    - Institute peer review committee charged with approving a subset of referrals (e.g., those that are considered "high cost")
- Spend time investigating "outlier" physicians (i.e., those who seem to refer patients to specialists at much higher rates than others) to determine how widespread the referral problem is and whether simply focusing on a few physicians will dramatically reduce referral costs
- Determine whether Magna can reduce referral costs in the other medical areas where it does not have specialists (i.e., neurosurgery)
- Look at the contracts Magna has for specialist services to determine if it is paying too much relative to competitors
- Consider whether bringing cardiology, neurosurgery, and oncology specialists in-house (i.e., within Magna) might reduce cost