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Review Article

A novel SAIF way for system's approach in medical education

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ABSTRACT

This paper discusses SAIF (Sophisticated Analytical Instrument Facilities) approach, the stages of SAIF approach, and how it can be implemented in day-to-day life in medical education as well as in the health care system. The steps involved in SAIF are study the system, analyze the system, Implement and lastly take feedback. The SAIF approach can be broken down to help systematically build various healthcare sectors. It is an effective problem-solving method. SAIF approach is not limited to health care but can also be applied in other sectors and industries as well. Even in our daily life, we use it multiple times. Here, we discuss the practicality of this approach as well as what it has to offer and if it can be held in great esteem.

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1. Introduction

The body works in collaboration with other organ systems in immaculate precision and harmony.¹ The cardiovascular system takes feedback from sympathetic and parasympathetic systems in determining further functioning. One system ceases to exist without the other such as if there is an anomaly in the body, other organs will also be affected resulting in them coming together to look for a solution.² Systems approach was originally from biology and it has been inculcated into our lives. Systems approach in medical education has recently gained traction and popularity. In the recent years, there have been many changes constantly being implemented in the education system, SAIF (Study the system, Analyze the system, Implement and take Feedback) approach being one of them to resolve any challenges. In SMT. NHL Municipal medical college NMC has a mandatory SAIF workshop of the basics for faculty development, it drastically helped the faculties in providing the education that is necessary in a

systematic manner. This has been introduced into many dental as well as medical colleges. SAIF is a simplified method that can be followed by individuals to seamlessly improve and solve various problems. Systems approach helps in sharpening management skills for those who may not be so strong in such aspects. It aids in keeping things organized especially since it occurs in a step wise manner. It saves time as well as reduces the hassle in decision making under pressure and scarce material situations.

1.1. Application of system

There are many types of analysis, VED being the main type.

1.1.1. VED analysis

In the system there are two types of analysis that can be used, VED Analysis and ABC Analysis. VED Analysis is as follows: V being very essential, E: Essential, D: Desirable. After all the steps mentioned, one can come up with a cost effective solution (Implementation). Once all the above has been completed a feedback can be taken regarding the effectiveness and success of the approach. For

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example, in an emergency situation assessing the patients is done through the triage system.³ Triage system is basically used by healthcare professionals to determine which patient needs priority care and which patient can be tended to later onwards based on the available resources. In this triage system, feedback would be the outcome of the patient. Due to better planning and implementation, the outcomes of the patient are better compared to how it would be if random patients were to be tended to. We can relate it with the SAIF approach as in a hospital, we can determine which instruments and equipment may be required in terms of priority. It aids in improvement of administrative skills thus bettering the health care system overall.

1.1.2. ABC analysis

In pharmacies in India, there occur many instances where there is shortage of drugs that are used frequently. In many situations a substantial portion of the budget is spent on high cost drugs.⁴ When ABC analysis is used, we can determine which drugs are used more frequently and which drugs should be stocked in a pharmacy more, in order to avoid shortage. It can effectively help ensure that the pharmacy runs seamlessly. In simpler terminology we are doing cost consumption analysis. The ones that are consumed maximally come first. IV fluid bottles and X-rays are a few that come in high cost and high consumption in our affiliated hospitals. By doing this analysis, we can curb the inadvertent use of both. For instance, it is said that in the Obstetrics and Gynecology Department, there was excessive use of IV fluid bottles after simple procedures. If usage of these were to be cut down, we would have more funds left to utilize it on other drugs and equipment.

There are other methods that can be used for analysis as well. Depending on the situation that one is presented with, a choice can be made accordingly. The two other types of analysis are SDE analysis and FSN analysis.

1.1.3. SDE analysis

It stands for Scarce, Difficult to get and easily available. This is the third type of analysis.⁵ The absence of equipment in health care settings has drastically affected the way administration runs as well as has posed a limitation for the quality of patient care being delivered.⁶ For instance, in some government hospitals in India, there is no availability of certain medications as well as advanced technology.⁷ It is easy to say that there are certain difficulties faced to provide the best medical care to patients in rural areas. This limits the care a doctor in a rural area can give to the patient. Hence, proper calculation and analysis can be done to figure out which advanced technology even though limited can be provided especially to underprivileged areas. To provide the bare minimum equality to disadvantaged individuals and to curb the neglect of rural populations SDE analysis can be used.

For instance, in rural populations there is no access to bedside X-ray machines, which makes it difficult for patients to receive the prompt and swift care that they require. The outcome of the treatment can also be changed because of this. There are many situations especially in road traffic accidents, where minute fractures are left undetected. Sometimes, this is not detected until later. Imagine the massive difference we could make to a patient's life, if we provided the proper equipment needed to change the outcome.⁸ Another example, in a lot of government hospitals there is a lack of CT scan. CT scans are used to detect cancer in earlier stages. If CT scans were performed when needed with easy accessibility, then a patient's life could be saved. The cancer can be detected early onwards and a treatment plan can be made.

Another example is COVID 19 testing kits. COVID-19 is a deadly virus which was at its peak in the years 2019-2021.⁹ During the initial stages of the pandemic, there was a lack of testing kits. Both, Reverse transcriptase polymerase chain reaction (RT-PCR) tests as well as Rapid antigen detection tests (RADT) were not accessible. Leaving the nation at a disadvantage. In the beginning of the pandemic, the individuals that needed testing were prioritized. Those that were required to get tested were those that had a history of international travel in the past 14 days as well as those that came in contact with individuals who tested positive. Then, slowly patients did not need to meet the above criteria in order to get screened for COVID-19. Those who had the general symptoms of COVID-19 even without being in contact with positive cases were required to get tested as well. Hence, analysis and implementation can be and were useful here.

1.1.4. FSN analysis

Last but not least, the fourth analysis which is FSN Analysis. This represents Fast, Slow, Non moving. This type of analysis can be best depicted with its use in decision making regarding building decisions such as infrastructure.

For example, in colleges there are always big funding decisions that need to be made. Decisions revolving around the building of certain infrastructure. For instance, if the college were to make the decision of building a large and elaborate lecture hall that would not be such a bad idea. That is because, even though it is a large investment it is slow moving. Which means that it is worth it since it is a long term investment and the benefits can be reaped after years have gone by.

In particular, making the decision of building a metro in a big city such as Ahmedabad.¹⁰ It is a massive investment with tax payers money, but it contributes massively to the progression of the state and country. The metro can be used for generations to come, making it easier for the transportation of students, working individuals, adults and elders. It also contributes to the well-being of Mother Earth

by reducing traffic and pollution. Proving that making the decision of building a metro is slow moving.

Suppose that, one was to invest a large amount of money on anything that is considered as fast moving that would be a bad financial decision. It would ultimately result in a major financial crisis, which is definitely somewhere we would not want to end up. A smart move to make would be to analyze before you make the decision. In a college if a huge amount of funds were taken for something that occurs yearly for entertainment purposes such as the college fest, that would be a wrong move. Instead of putting ample amounts of funds into something that lasts for only a week (fast moving), it could be utilized for slow moving. Slow moving such as investing towards dummies for CPR training, skills practice lab which would not only improve the country's future doctors but also the reputation and value that the college has to offer.

Using FSN analysis, we take the load of decision-making off of people. Making it easier as the facts obtained are easily depicted creating a better today and tomorrow.

Table 1: SAIF way for system approach

Parts of the SAIF Approach	Steps involved for successful implementation
(S) Study the System	The problem should be identified Status Quo -Context to larger system -Sub-Systems One should specify the objectives for action Analyze the inputs and the limitations We can select a system analysis method based on the problem or challenges we are facing
(A) Analyze the System	According to the criticality of requirement- VED analysis (Very essential, Essential and Desirable) ABC analysis Based on availability- SED analysis (Scarce, Difficult to get, Easily available) Based on utility FSN analysis (Fast, Slow, Nonmoving)
(I) Implement	Alternative strategies can be put forth to solve the problems. Choose the preferred solutions, while taking into account the cost benefit in the decision making process.
(F) Feedback	Collect feedback, evaluate and modify based on the feedback received.

For example- using Saif approach in voluminous medical curriculum- VED analysis

Medical students usually prefer to study in a pre-planned manner in order to be able to complete the syllabus on time. As the course is vast in nature, students tend to manage their

time by focusing on what is most important and essential by dividing the curriculum into sections where the syllabus can be prioritized. This is an example of VED analysis. The students look at the papers of previous years through which they gain an understanding of what is most frequently asked. The next step involves a stepwise segregation of the questions, which are grouped into most likely to be asked (Very essential) where this is given the most importance. Followed by moderately asked questions (essential) and those that are least likely to be asked (desirable). By doing this students are able to finish their portions, excel academically and manage their time. This method can be implemented in hospitals through which it can guarantee a significant improvement in the quality of management.

When we are faced with a problem, instead of having to brainstorm multiple paths for a resolution, one should follow a more concise and step wise path. Following given steps and directions one could come to a solution speedily. Systems approach is something that can easily be remembered for the long term. In this fast moving day and age, the attention span of individuals is reducing substantially. But, in the case of the SAIF approach, anyone can easily remember it with one or two subsequent exposures. Making this the best approach to follow. Needless to say why it would be extremely beneficial for us to start implementing it.

2. Conclusion

Although, we won't necessarily say that it is fundamental that we use the SAIF approach. It can surely improve the outcome of the administrative system in medical education as well as hospital management. Thus, improving the overall functioning and contribution to society as a whole.

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4. Conflict of Interest

None.


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