



Recent trends in Management and Commerce

Vol: 2(4), 2021

REST Publisher

ISBN: 978-81-936097-6-7

Website: <http://restpublisher.com/book-series/rmc/>



Evaluation of Infection Detection using DEMETAL method

Nikam Suvarna Prashant

SSt College of Arts and Commerce, Maharashtra, India.

Email: suvarnanikam@sstcollege.edu.in

Abstract

Infection Detection. Laboratory tests help determine the presence of infection, the causative organism, and the progression of the infection. Various laboratory tests for infection include Blood tests: White blood cells (WBC) fight infection. Therefore, an increased level of WBC indicates an infection. A detection and analysis method is a specific analytical procedure suitable for the detection of a specific chemical in a specific matrix, such as air, water, soil, or food, used for the purpose of detecting or measuring the concentration of a chemical. Because of its global and human health impact, relatively few treatments exist. Paradoxically, there is a huge amount of information available on RSV replication during purification, RSV-induced mechanisms, and social spread. RSV adds to the high burden of infection with existing chronic respiratory diseases. A bacterial culture test can help identify harmful bacteria on or in your body that could be making you sick. To perform the test, you must give a sample of your blood, urine, skin, or other tissue. The type of specimen depends on where the infection is located. DEMATEL (Decision-Making Trial and Evaluation Laboratory). They are divided into analyses using the infection detection in Coronary heart disease, Rheumatic valvular heart disease, Hypertension, Chronic cor pulmonale, and Congenital heart disease in the value. Coronary heart disease, Rheumatic valvular heart disease, Hypertension, Chronic cor pulmonale, Congenital heart disease. Coronary heart disease, Rheumatic valvular heart disease, Hypertension, Chronic cor pulmonale, Congenital heart disease. Coronary heart disease got the first rank whereas Chronic cor pulmonale, has the lowest rank.

Keywords: Viral Pathogenesis, Medical Diagnosis Problems, Infrared Thermography, DEMETAL Method.

Introduction

A febrile patient during a visit to the doctor with medical history establishes the physical baseline they were diagnosed with fever and primary physician infection. 1 However, less than half of patients with febrile episodes may have severe underlying episodes attributed to infections. 2 Furthermore, patients with clinical manifestations of infection in these severe diseases are often subtle, regulation, or the lack of it, is still a symptomatic infection and is very important in the early stages of the disease. Many medical disorders manifest as H pylori infection, primarily gastrointestinal mucosa. Unexpectedly, without assessment tools with confirmed indication. Total knee arthroplasty provides rehabilitation to a large population of mobility and productive individuals. Clinical conditions that require biomechanical degradation of the different courses of treatment are implantation or pathogen infection. Accurate diagnosis of bacterial infection is important to determine clinical action in arthroplasty sites. Despite the progress and success of the artificial method, these devices can bacterial sequestration of the microorganism and development of surgical contamination, superficial wounds, or hematogenous sources are compatible. An experienced nurse epidemiologist determines when a medical record review is conducted time reported by blood culture phlebotomy doctors complete phone medical microbiology laboratory results are gram-positive blood stain culture bottle, and AST results are available at any time in a hospital information system. The possibility that there is no information about AST profiles and blood cultures reported by gram stain results in the phone at that time. Where is the medical field of vaccines when there are so many researchers being developed, there are many drugs and medical procedures that are being developed to prevent the virus to cure infected patients and prevent it from spreading to others. States have an unknown and unpredictable process to implement new policies. An example of technological advancement is robots and drones used for food delivery and pharmaceutical hospitals. Where is there are many researchers when vaccines in the medical field.

Material and methods

VIRAL PATHOGENESIS

The term "oxidative stress" refers to what can lead to a disturbed antioxidant-oxidant balance Cellular must damage. This imbalance may be due to impaired antioxidant capacity or excess reactive species (RS). However, redox signaling pathways are involved in many systems such as the presence of oxidative stress. A better definition is oxidative stress is "disruption/regulation of signaling and redox regulation". Peterhans published the first evidence that a virus induces oxidative stress and increases RS levels. The author demonstrated infection of mouse splenocytes induced by the Sendai virus (a paramyxovirus). An increase in chemiluminescence levels is due to luminal oxidation by RS. It was also revealed that UV light inactivation of the virus can generate RS, whereas heat inactivation of the virus does not constitute RS, suggesting compliance with the viral system mediates this activity. Later, other studies showed that many retroviruses, DNA, and RNA viruses can induce Cell death by forming RS. Several methods are available to assess viral mutability, including measuring

Phenotypic variables such as mutation frequencies for the development of temperature sensitivity, plaque morphology, host range, and pathogenicity. However, these criteria cannot be used precisely and quantitatively to assess viral mutation, as phenotypic variations often involve multiple base changes in different genes. Identification of a strain that escapes neutralizing antibodies is the most reliable measure of viral mutation. For example, viral escape, especially by a neutralizing monoclonal antibody, occurs through base substitution, which leads to a codon change in an epitope.

MEDICAL DIAGNOSIS PROBLEMS

Often to solve the problems of clinical diagnosis, the geometric interpretation Theory Recognition Method (TPR) tool is used. However, many problems of practical importance in the field of information have features of complex geometric structure classes. In addition, the solution to the problem of classical DPR methods of clinical diagnosis is the lack of complete statistical material covering various functional aspects of the subject, available caustic situations, and inaccurate or misdescribed subjects in the training material; Often the meaning of "author" cannot be defined. Objects can have source space in the same class and so on. A special tool is the surest solution under these conditions for diagnostic decision-making problems. Required; It should be analyzed the system of classes that provide relevant hypotheses and the subject field under special language studies. In data analysis, a computational test helps with such a radius. Classification and diagnosis, the calculation to solve problems Test of Pattern Recognition (DSPR) was implemented using interactive dialog systems. A competitive swarm optimizer (CSO) is one of the recently proposed variants of BSO. It has been reported that BSO does not work well with high doses of menstrual problems, and when it is optimal for many localities. This leads to a premature convergence, which is slow in BSO. To overcome these problems, many PSO types have been introduced to improve the search process, but the cost calculation is complicated. Most of these categories are derived from the problem of pre-integration with a strong influence of the original PSO global best solution. The main objective of CSO The universal best solution to reduce leverage is to reduce premature accumulation.

INFRARED THERMOGRAPHY

Infrared thermography consists of a camera with interchangeable optics and a computer. At the heart is a camera with an infrared detector, IR energy is emitted by the absorbent material (whose surface temperature must be measured) and it changes voltage or current. Any object emits a proportional force to its surface temp. However, the actual detection depends on the energy (infrared detection). Its lower surface emission coefficient is measured. Researchers' efforts are generally aimed at improving quality of life, a concept that is certainly associated with high safety standards. Safety at home, work, safety in everyday life and so on performance largely depends on the device used (electrical household appliances, machine tools, energy converters, transportation) and environmental conditions. In this environment, design, and quality control plays an important role and quality assurance. The general behavior of fluids represents the primitive nature of the study of physics and engineering, an important point that Improves quality of life. Fluid motion is more complex to understand, including more nonlinearity Events such as turbulence. This was the primary problem for our primitive ancestors who faced difficulties in water use and control works for agricultural development, consumption, and travel. The energy emitted from infrared radiation by an object with a surface temperature above absolute zero. A function of emission is radiation temperature means; the higher the temperature, the bigger intensity of emitted infrared energy. Infrared radiation emitted by thermometry using the IRT scale is a material and religious change in the detected energy is a temperature value.

DEMATEL METHOD

Modeling this structure Approach adopts the form of a driven diagram, which is a causal effect for presenting values of influence between interrelated relationships and factors. By analyzing the visual relationship of conditions between systemic Factors, all components of A causal group and the effect are divided into groups. It also provides researchers with Structure between system components Better understanding of the relationship and complexity for troubleshooting computer problems Can find ways. The DEMATEL system is integrated with Emergency management together with Manage. In the manner proposed, it is not necessary to defuzzify obscure numbers before using the DEMATEL method. Therefore, this method is uncertain of whether evaluation Will truly reflect the character. Finally, to get the final results from different aspects Twice in each integrated PPA We use DEMATEL, which is ours. Decision Testing and Assessment Laboratory (DEMATEL). The DEMATEL method is a powerful method of gathering team knowledge to build a structured model and visualize the causal relationship of subsystems. But crisp values The ambiguity of the real world Is adequate reflection. DEMATEL explores the interdependence between equity The number of investment factors and factors and ANP to assess their dependencies Integrated. This section is, first of all, DEMATEL Establishes network relationships through, secondly, for each factor ANP to increase weight compared to Uses. Third, a systematic data collection process is provided. The DEMATEL method effectively calculates the consequences between criteria, which efficiently separates the set of complicated elements right into a sender organization and a recipient institution and transforms it right technique to choosing a management gadget Between alternate configurations Explicit Priority Weights come from in addition, the ZOGP model allows companies to make full use of limited resources for planning to implement optimal management systems. DEMATEL methods. This influence and causal Group barriers pro or Source for affected group barriers Can be considered due. Therefore, to effectively implement electronic waste management, barriers belonging to a causal or an influential group Should be considered on a priority basis.

Therefore, decision-makers need to determine obstacles. The legal framework is strong. Make sure it is controllable to minimize impact or influence barriers. Therefore, derived from ISM and DEMATEL methods the results are somewhat consistent. Integrated ISM DEMATEL Results for e-waste management constraints determines not only the structure but also the structure and the interactions between these barriers.

Result and discussions

TABLE1. INFECTION DETECTION

	Coronary heart disease	Rheumatic valvularheart disease	Hypertension	Chronic cor pulmonale	Congenital heart disease	Sum
Coronary heart disease	0	7	5	8	4	24
Rheumatic valvularheart disease	9	0	5	3	6	23
Hypertension	5	8	0	4	9	26
Chronic cor pulmonale	7	5	8	0	9	29
Congenital heart disease	6	4	9	3	0	22

Table 1 shows that DEMATEL Decision making trail and evaluation laboratory in infection detection in Coronary heart disease, Rheumatic valvular heart disease, Hypertension, Chronic cor pulmonale, Congenital heart disease sum of the pair in the value zero.

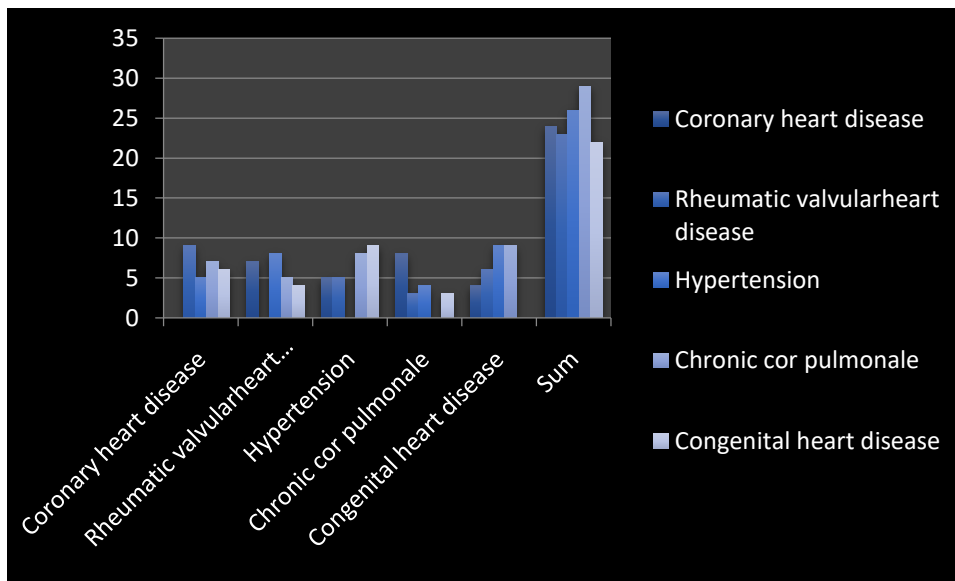


FIGURE 1. INFECTION DETECTION

FIGURE 1 shows that DEMATEL Decision making trail and evaluation laboratory in infection detection in Coronary heart disease, Rheumatic valvular heart disease, Hypertension, Chronic cor pulmonale, Congenital heart disease sum of the pair in the value zero.

TABLE 2. NORMALIZING OF DIRECT RELATION MATRIX

Normalisation of direct relation matrix					
	Coronary heart disease	Rheumatic valvularheart disease	Hypertension	Chronic cor pulmonale	Congenital heart disease
Coronary heart disease	0	0.24137931	0.1724	0.2759	0.1379
Rheumatic valvularheart disease	0.3103	0	0.1724	0.1034	0.2069
Hypertension	0.1724	0.27586207	0	0.1379	0.3103
Chronic cor pulmonale	0.2414	0.17241379	0.2759	0	0.3103
Congenital heart disease	0.2069	0.13793103	0.3103	0.1034	0

Table 2 shows that the Normalizing of direct relation matrix in infection detection in Coronary heart disease, Rheumatic valvular heart disease, Hypertension, Chronic cor pulmonale, Congenital heart disease. The diagonal value of all the data set is zero.

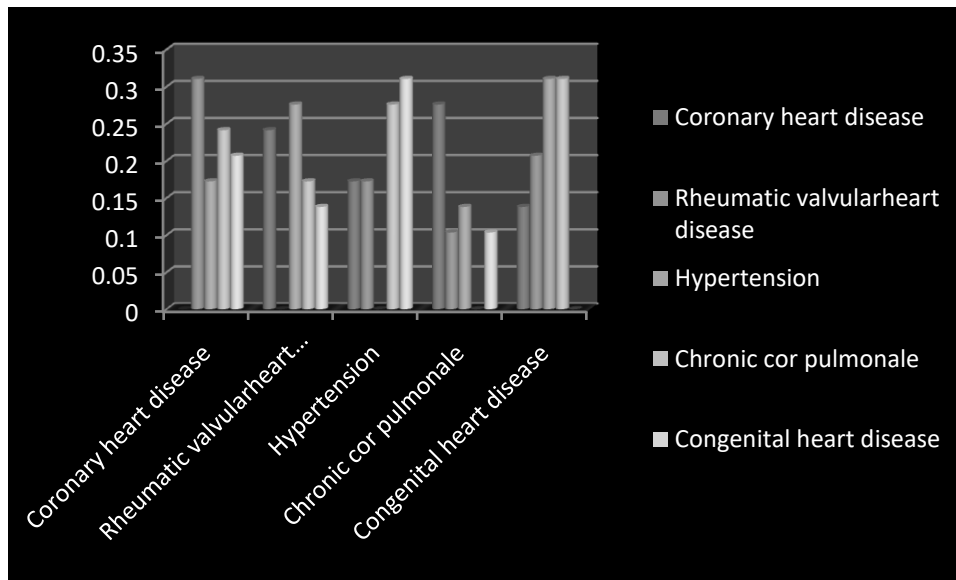


FIGURE 2. NORMALIZATION OF DIRECT RELATION MATRIX

Figure 2 shows that the Normalizing of direct relation matrix in infection detection in Coronary heart disease, Rheumatic valvular heart disease, Hypertension, Chronic cor pulmonale, Congenital heart disease. The diagonal value of all the data set is zero.

TABLE 3. CALCULATE THE TOTAL RELATION MATRIX

Calculate the total relation matrix					
	Coronary heart disease	Rheumatic valvular heart disease	Hypertension	Chronic cor pulmonale	Congenital heart disease
Coronary heart disease	0	0.24137931	0.172413793	0.275862069	0.137931
Rheumatic valvular heart disease	0.310344828	0	0.172413793	0.103448276	0.206897
Hypertension	0.172413793	0.27586207	0	0.137931034	0.310345
Chronic cor pulmonale	0.24137931	0.17241379	0.275862069	0	0.310345
Congenital heart disease	0.206896552	0.13793103	0.310344828	0.103448276	0

Table

3Shows the Calculate the total relation matrix in infection detection in Coronary heart disease, Rheumatic valvular heart disease, Hypertension, Chronic cor pulmonale, Congenital heart disease Calculate the Value.

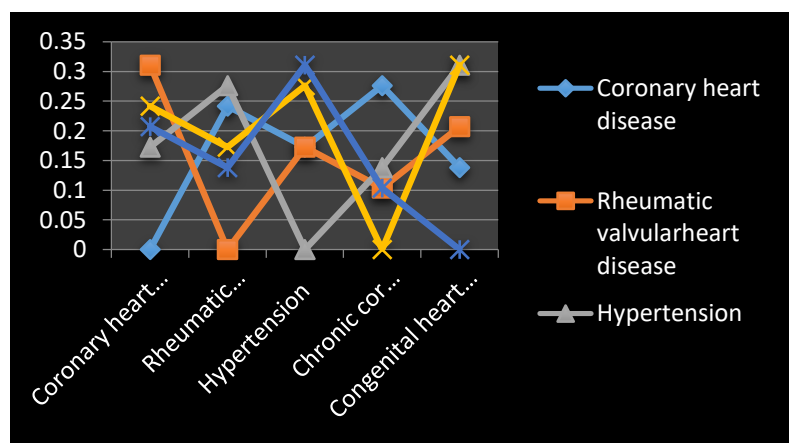


FIGURE 3. CALCULATE THE TOTAL RELATION MATRIX

Figure Shows the Calculate the total relation matrix in infection detection in Coronary heart disease, Rheumatic valvular heart disease, Hypertension, Chronic cor pulmonale, Congenital heart disease Calculate the Value.

TABLE 4.T= Y (I-Y)-1, I= Identity matrix

1	0	0	0	0
0	1	0	0	0
0	0	1	0	0
0	0	0	1	0
0	0	0	0	1

Table 4Shows the T= Y(I-Y)-1, I= Identity matrix in v is the common Value.

TABLE 5. Y

0	0.181818182	0.363636364	0.181818182	0.27272727
0.272727273	0	0.181818182	0.090909091	0.18181818
0.181818182	0.090909091	0	0.272727273	0.18181818
0.090909091	0.272727273	0.181818182	0	0.18181818
0.181818182	0.181818182	0.090909091	0.181818182	0

Table 5 Shows the Y Value in Coronary heart disease, Rheumatic valvular heart disease, Hypertension, Chronic cor pulmonale, Congenital heart disease is the Calculate the total relation matrix Value and Y Value is the same value.

TABLE 6. I-Y VALUE

1	-0.181818182	-0.36363636	-0.18182	-0.27273
-0.27272727	1	-0.18181818	-0.09091	-0.18182
-0.18181818	-0.090909091	1	-0.27273	-0.18182
-0.09090909	-0.272727273	-0.18181818	1	-0.18182
-0.18181818	-0.181818182	-0.09090909	-0.18182	1

Table 6 Shows the I-Y Value Coronary heart disease, Rheumatic valvular heart disease, Hypertension, Chronic cor pulmonale, Congenital heart disease table 4 T= Y (I-Y)-1, I= Identity matrix and table 5 Y Value Subtraction Value.

TABLE 7. (I-Y)-1 VALUE

1	-0.18182	-0.36364	-0.18182	-0.27273
-0.27273	1	-0.18182	-0.09091	-0.18182
-0.18182	-0.09091	1	-0.27273	-0.18182
-0.09091	-0.27273	-0.18182	1	-0.18182
-0.18182	-0.18182	-0.09091	-0.18182	1

Table 7 Shows the (I-Y)-1 Value Coronary heart disease, Rheumatic valvular heart disease, Hypertension, Chronic cor pulmonale, Congenital heart disease Table 6 shown the Minverse Value.

TABLE 8. TOTAL RELATION MATRIX (T)

0.610232	0.753533	0.945449	0.78095	0.890051
0.706331	0.474562	0.692764	0.577162	0.691634
0.613624	0.561334	0.513002	0.697287	0.671283
0.555681	0.678067	0.65065	0.459864	0.658564
0.57801	0.579423	0.553703	0.575749	0.468344

Table 8 shows the Total Relation Matrix the Coronary heart disease, Rheumatic valvular heart disease, Hypertension, Chronic cor pulmonale, Congenital heart disease direct relation matrix is multiplied with the inverse of the value that the direct relation matrix is subtracted from the identity matrix.

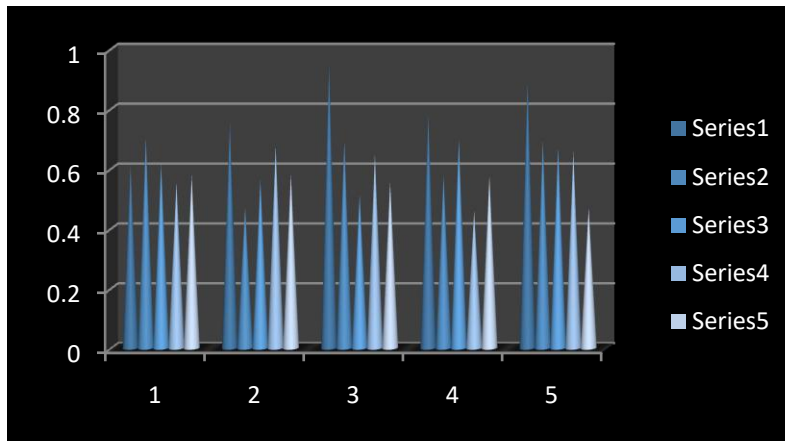


FIGURE 4. TOTAL RELATION MATRIX (T)

Figure 4 shows the Total Relation Matrix the Coronary heart disease, Rheumatic valvular heart disease, Hypertension, Chronic cor pulmonale, Congenital heart disease direct relation matrix is multiplied with the inverse of the value that the direct relation matrix is subtracted from the identity matrix.

TABLE 9. HEALTHCARE INFORMATION SYSTEM Ri, Ci VALUE

	Ri	Ci
Coronary heart disease	3.980215	3.063878
Rheumatic valvularheart disease	3.142453	3.046919
Hypertension	3.056529	3.355568
Chronic cor pulmonale	3.002826	3.091012
Congenital heart disease	2.755229	3.379876

Table 9 shows the healthcare information system Coronary heart disease, Rheumatic valvular heart disease, Hypertension, Chronic cor pulmonale, Congenital heart disease Ri, Ci Value. Coronary heart disease is showing the Highest Value for Ri and Chronic cor pulmonale is showing the lowest value. Current is showing the Highest Value for Ci and Never showing the lowest value.

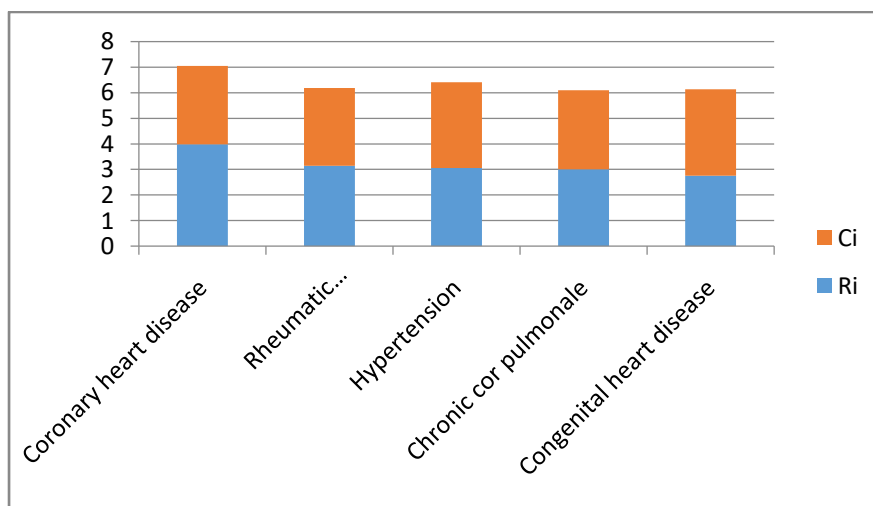


FIGURE 5. HEALTHCARE INFORMATION SYSTEM Ri, Ci VALUE

Figure 5 shows the healthcare information system Coronary heart disease, Rheumatic valvular heart disease, Hypertension, Chronic cor pulmonale, Congenital heart disease Ri, Ci Value. Coronary heart disease is showing the Highest Value for Ri

and Chronic cor pulmonale is showing the lowest value. Current is showing the Highest Value for Ci and Never showing the lowest value.

TABLE 10. CALCULATION OF RI+CI AND RI-CI TO GET THE CAUSE AND EFFECT

	Ri+Ci	Ri-Ci	Rank	Identity
Coronary heart disease	7.044093	0.916337	1	cause
Rheumatic valvularheart disease	6.189373	0.095534	3	cause
Hypertension	6.412097	-0.29904	2	effect
Chronic cor pulmonale	6.093838	-0.08819	5	effect
Congenital heart disease	6.135105	-0.62465	4	effect

Table 10 shows the Calculation of Ri+Ci and Ri-Ci to Get the Cause and Effect. Infection detection Coronary heart disease, Rheumatic valvular heart disease, Hypertension, Chronic cor pulmonale, Congenital heart disease. Current got the first rank whereas Former, has the lowest rank.

TABLE 11. T MATRIX VALUE

0.610231769	0.753533	0.945449	0.78095	0.890051
0.706331261	0.474562	0.692764	0.577162	0.691634
0.613623516	0.561334	0.513002	0.697287	0.671283
0.555681176	0.678067	0.65065	0.459864	0.658564
0.578010175	0.579423	0.553703	0.575749	0.468344

Table 11 shows the T Matrix Value Calculate the Average of the Matrix and Its Threshold Value (Alpha) Alpha **0.63749** If the T matrix value is greater than threshold value then bolds it.

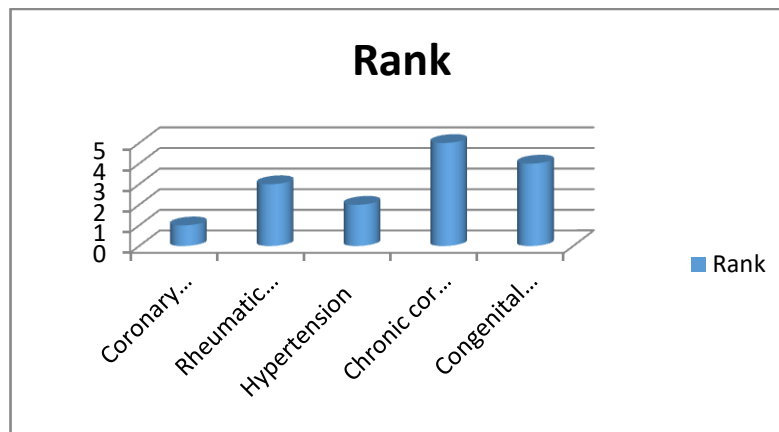


FIGURE 6. SHOWN THE RANK

Figure 6 shows the Rank using the DEMATEL for Coronary heart disease got the first rank whereas Chronic cor pulmonale, has the lowest rank.

Conclusion

Added to the technology are the advantages of non-invasiveness, perhaps sensitivity to early stages of infection, and time spent unconstrained by other bioassay techniques. Application of infrared thermography A notable addition is the current application of clinical scores. There is exceptional knowledge of the basic mechanisms of RSV replication, transmission, and clinical management of RSV in the community, However, advances are being made in RSV vaccines and treatments inside the virus which is especially bad compared to the 1950s to other viruses such as the flu virus, hepatitis C virus, and it is known that a large amount of RSV replication is HIV. There are several steps that can be used as replication cycle antiviral treatment strategies. Our understanding is that RSV replication is a step-by-step process leading to new developments in therapies, and clinical trials continue as new treatment advances are made. In summary, everything we know about RSV and its mode of transmission, morbidity, and the resulting death virus makes it difficult to understand the proportional availability of treatment and prevention and treatment options for RSV disease. Virulence studies in ferrets were animal models that began with fever in the early 20th century, and are apparently highly susceptible to human respiratory viruses, with each follower adding several additional numbers of pathogens. The interactive construction of this method solves two-dimensional classification space problems initially and differential diagnosis of diseases provides solutions when there is no information about the lack of statistics, diversity of classes, extreme structure, feature descriptions, and pre-caustic situations. Scope of

intermediate zones between classes, and information on the organization of classes in non-priority situations besides, with excellent temperature sensitivity, spatial resolution, and non-correlation in nature, IRT is a completely non-invasive imaging modality. Thermal images can be digitally stored and post-processed using various software packages to gain insight into the thermal system.

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