

Results of the development of the comprehensive system of the regional high specialty hospital "Dr Gustavo A. Rovirosa Pérez": Medical emergency module

Cámara Ayala Luis Fernando, Gómez Zea José Manuel, Jesús Magaña José Ángel, Garrido Vázquez José Ney, Hernández Cadena Alejandro

Tecnológico Nacional de México – Campus Villahermosa / Instituto Tecnológico de Villahermosa, División de Estudios de Posgrado e Investigación.

Abstract

The purpose of this article is to mention how the main objective of the SIHR: Medical Emergencies Module is to develop and implement the medical emergencies module for the hospital administration, taking into account the data obtained from 2 months with 3 days in operation of the module and how it could affect for or against the decision-making of the senior management of this hospital complex.

Resumen

El propósito de este artículo es de mencionar como fue que el principal objetivo del SIHR: Módulo de Emergencias Médicas es el de desarrollar e implementar el módulo de emergencias médicas para la administración hospitalaria, tomando en cuenta los datos obtenidos de 2 meses con 3 días en funcionamiento del módulo y de cómo podría afectar en pro u en contra la toma de decisiones de la alta dirección de este recinto hospitalario.

Palabras Clave: Hospital, SIHR, Norma Oficial Mexicana

Keywords: Hospital, SIHR, Official Mexican standard

1. INTRODUCTION

The high specialty regional hospital Dr. Gustavo A. Rovirosa Pérez will be called the "Hospital", and the Hospital Rovirosa Comprehensive System will be called SIHR. The Hospital has an emergency area where currently the population that enters it for issues of family violence or vehicular accident, rape, work is attended, and they are treated quickly to improve their health. The computer environment of the emergency module is not updated to the new actions in terms of information systems, since the user (Social Work) has to fill in the documents twice to be able to view them in the emergency module, since their first step is to bring a blank sheet with the corresponding process.

For the development of a module of medical emergencies to have the requirements or important elements, the analysis and monitoring of the Official Mexican Standards, mentioned below, is required.:

- The Official Mexican Standard NOM-024-SSA3-2012 (DOF, 2021), which also refers to the Official Mexican Standard 024-SSA3-2010 (DOF, 2021) declares that it is necessary to have Implementation Guides and Terminology Catalogs for its correct functioning in the different health establishments.
- The Official Mexican Standard NOM-004-SSA3-2012 (DOF, 2021) of the Clinical Record, which aims to regulate the Electronic Health Record Information Systems, in its content are referenced some important catalogs for the correct operation of an electronic medical record.
- The Official Mexican Standard NOM-035-SSA3-2012 (DOF, 2021) on Health Information Matters, aims to establish the criteria and procedures to follow, to produce, capture, integrate, process,

systematize, evaluate and disclose the Information in Health, depending largely on the information that can be collected in a medical consultation or emergency, both for a routine or emergency surgical procedure.

2. CONTENT

The following results were extracted through the programs WinNMP V.20.11 & Navicat Premium V.15.0.14 using the tool “Chart Workspace” of the same.

The following Figures will show the number of patients seen during the months of April a few days after the beginning of May and June respectively.

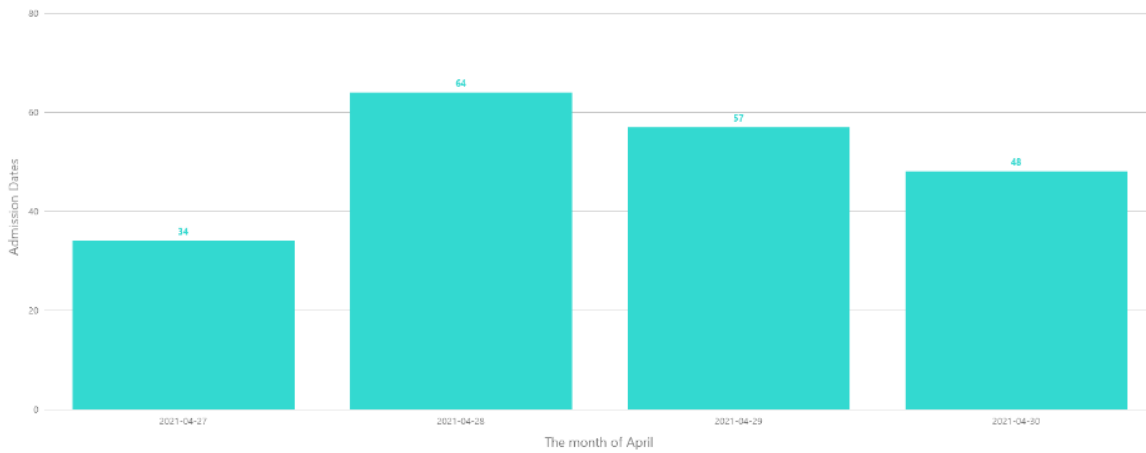


Figure 1. People attended in the last days of April

The Figure above shows that on April 27, 2021, 34 people were attended, that day being the first day that the system became operational within the Hospital facilities, on the 28th of the same month, 64 were attended. people during the course of the day, doubling those of the previous day, on the third day of using the system, 57 people were attended, on the last day of the month 48 people were attended, at the end of the month there is a record of a total of 203 people attended, below is Figure 2 which corresponds to the month of May.

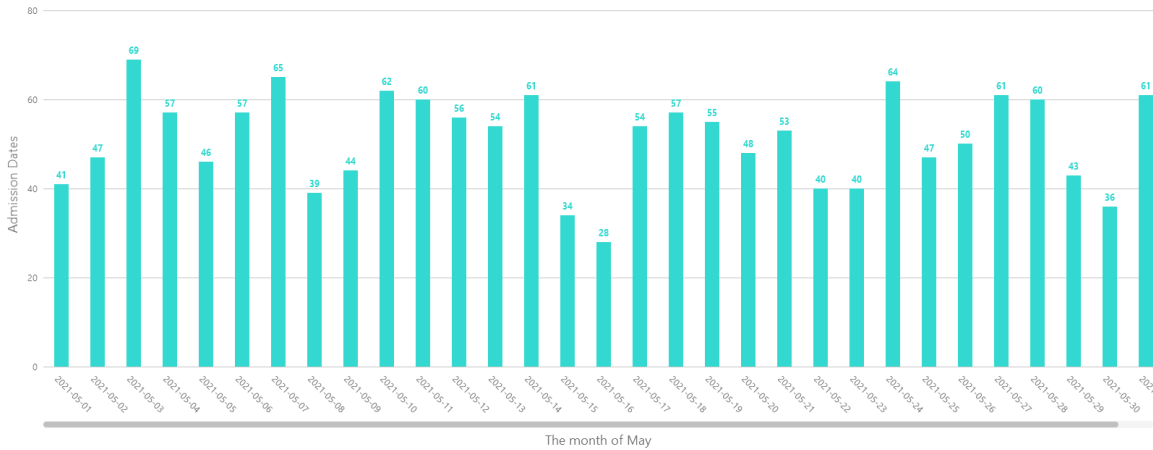


Figure 2. People served during the month of May

admission date	Admissions
2021-05-01	41
2021-05-02	47
2021-05-03	69
2021-05-04	57
2021-05-05	46
2021-05-06	57
2021-05-07	65
2021-05-08	39
2021-05-09	44
2021-05-10	62
2021-05-11	60
2021-05-12	56
2021-05-13	54
2021-05-14	61
2021-05-15	34
2021-05-16	28
2021-05-17	54
2021-05-18	57
2021-05-19	55
2021-05-20	48
2021-05-21	53
2021-05-22	40
2021-05-23	40
2021-05-24	64
2021-05-25	47
2021-05-26	50
2021-05-27	61
2021-05-28	60
2021-05-29	43
2021-05-30	36
2021-05-31	61
Total	1,589

Figure 3. Count of people attended during the month of May by date

Figure 2 shows a bar graph which shows how attention fluctuates during some days, with some days when attention is a little high, given the circumstances that they are days when people tend to reach more Hospital for medical attention for reasons of Accidents due to narcotics or some other accident, in Figure 3 a detailed information is obtained, in this way it is seen how medical attention fluctuates and you can have better control.

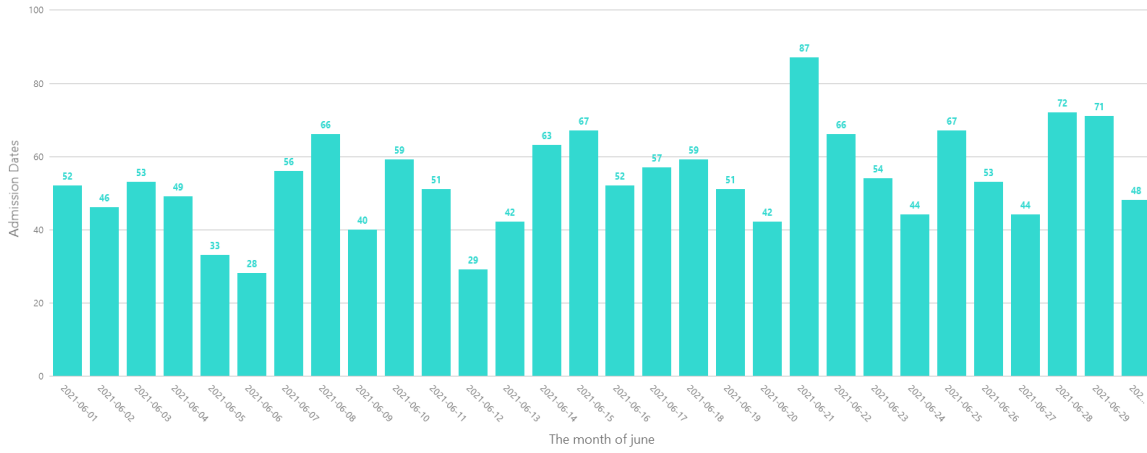


Figure 4. Bar Graph for the count of people served during the month of June

admission date	Admissions
2021-06-01	52
2021-06-02	46
2021-06-03	53
2021-06-04	49
2021-06-05	33
2021-06-06	28
2021-06-07	56
2021-06-08	66
2021-06-09	40
2021-06-10	59
2021-06-11	51
2021-06-12	29
2021-06-13	42
2021-06-14	63
2021-06-15	67
2021-06-16	52
2021-06-17	57
2021-06-18	59
2021-06-19	51
2021-06-20	42
2021-06-21	87
2021-06-22	66
2021-06-23	54
2021-06-24	44
2021-06-25	67
2021-06-26	53
2021-06-27	44
2021-06-28	72
2021-06-29	71
2021-06-30	48
Total	1,601

Figure 5. Specific count of the days of the month of June which shows the number of people served.

Throughout the aforementioned months, a total of 3,393 people were assisted in the different areas of the Hospital emergency coordination. It is worth mentioning that the start of care is within the time mentioned in the following table.

Table 1. Triage or Urgency Classification.

Urgency level	Type of Urgency	Color	Wait time
1	Emergency or Resuscitation	Red	Immediate attention
2	Urgent	Yellow	10 – 15 minutes
3	Normal	Green	2 hours
4	UNC – Unqualified Urgency	Brown	2 – 4 hours
5	Code Black	Black	0 minutes, Deceased patient

With the previous table you can obtain even more information since now there are the times in which medical care can be performed and the duration of the consultation a clear example is the duration of the consultation, below is a table with information based on the table above.

Table 2. First day of May, health care records with start datetime on the same day.

#	Admission date	Check In Time	Time before starting medical attention (Minutes)	Start Date Attention	Start Time Attention	Date End Attention	Time End Attention	Duration of medical care (Minutes)
306	01/05/2021	00:22:00	100	01/05/2021	02:02:14	01/05/2021	02:44:52	42
307	01/05/2021	00:48:00	129	01/05/2021	02:57:31	01/05/2021	03:07:20	9
308	01/05/2021	01:52:00	118	01/05/2021	03:50:25	01/05/2021	03:58:16	7
310	01/05/2021	02:54:00	116	01/05/2021	04:50:51	01/05/2021	05:31:55	41
311	01/05/2021	03:21:00	11	01/05/2021	03:32:29	01/05/2021	03:58:19	25
313	01/05/2021	06:09:00	44	01/05/2021	06:53:00	01/05/2021	07:03:21	10
314	01/05/2021	06:41:00	277	01/05/2021	11:18:11	01/05/2021	11:25:46	7
316	01/05/2021	07:17:00	143	01/05/2021	09:40:52	01/05/2021	11:07:57	87
319	01/05/2021	08:36:00	123	01/05/2021	10:39:10	01/05/2021	13:32:09	172
322	01/05/2021	10:04:00	6	01/05/2021	10:10:02	01/05/2021	10:19:06	9
323	01/05/2021	10:13:00	49	01/05/2021	11:02:53	01/05/2021	11:29:22	26
324	01/05/2021	10:22:00	4	01/05/2021	10:26:27	01/05/2021	13:52:28	206
325	01/05/2021	10:22:00	98	01/05/2021	12:00:46	01/05/2021	14:02:02	121
327	01/05/2021	11:38:00	66	01/05/2021	12:44:14	01/05/2021	13:07:30	23
328	01/05/2021	11:52:00	11	01/05/2021	12:03:06	01/05/2021	12:38:33	35
329	01/05/2021	12:16:00	60	01/05/2021	13:16:14	01/05/2021	16:10:38	174
330	01/05/2021	12:16:00	113	01/05/2021	14:09:25	01/05/2021	16:43:31	154
331	01/05/2021	12:28:00	41	01/05/2021	13:09:54	01/05/2021	14:01:37	51
332	01/05/2021	12:41:00	112	01/05/2021	14:33:13	01/05/2021	17:11:52	158
334	01/05/2021	13:03:00	116	01/05/2021	14:59:44	01/05/2021	17:16:48	137
339	01/05/2021	17:14:00	29	01/05/2021	17:43:35	01/05/2021	18:42:20	58
340	01/05/2021	17:39:00	6	01/05/2021	17:45:14	01/05/2021	18:20:27	35
341	01/05/2021	17:58:00	126	01/05/2021	20:04:51	01/05/2021	20:35:27	30
343	01/05/2021	18:57:00	283	01/05/2021	23:40:18	01/05/2021	23:56:34	16
345	01/05/2021	19:10:00	7	01/05/2021	19:17:37	01/05/2021	20:13:01	55
351	01/05/2021	20:10:00	16	01/05/2021	20:26:56	01/05/2021	21:40:56	74

352	01/05/2021	21:08:00	16	01/05/2021 1	21:24:06	01/05/2021	21:53:36	29
354	01/05/2021	21:17:00	3	01/05/2021 1	21:20:33	01/05/2021	21:57:53	37
362	01/05/2021	22:27:00	4	01/05/2021 1	22:31:32	01/05/2021	22:49:11	17
370	01/05/2021	23:02:00	1	01/05/2021 1	23:03:04	01/05/2021	23:28:55	25
376	01/05/2021	23:39:00	2	01/05/2021 1	23:41:11	01/05/2021	23:55:51	14

Table 2 presents the information of a total of 31 consultations on May 1, in which both the admission and the start and end of care ends on the same day, the table shows two very important items that are the waiting time for the start of medical care and the time spent in the medical consultation, even with these items it is necessary to know the type of urgency with which they were registered since the table only talks about times of care, for Therefore, in the following table, the same records, however, these will change to the types of urgency with which they are registered.

Table 3. Types of urgency according to table 1 "Triage or Urgency Classification"

#	Admission date	Emergency Type
306	01/05/2021	Urgent (Yellow)
307	01/05/2021	Normal (Green)
308	01/05/2021	Normal (Green)
310	01/05/2021	Normal (Green)
311	01/05/2021	Normal (Green)
313	01/05/2021	Attention immediate (Red)
314	01/05/2021	Urgent (Yellow)
315	01/05/2021	Normal (Green)
316	01/05/2021	Normal (Green)
319	01/05/2021	Normal (Green)
322	01/05/2021	Normal (Green)
323	01/05/2021	Normal (Green)
324	01/05/2021	Normal (Green)
325	01/05/2021	Normal (Green)
327	01/05/2021	Urgent (Yellow)
328	01/05/2021	Urgent (Yellow)
329	01/05/2021	Normal (Green)
330	01/05/2021	Normal (Green)
331	01/05/2021	Normal (Green)
332	01/05/2021	Normal (Green)
333	01/05/2021	Normal (Green)
334	01/05/2021	Normal (Green)
339	01/05/2021	Normal (Green)
340	01/05/2021	Normal (Green)
341	01/05/2021	Urgent (Yellow)
343	01/05/2021	Urgent (Yellow)

345	01/05/2021	Normal (Green)
347	01/05/2021	Urgent (Yellow)
351	01/05/2021	Normal (Green)
352	01/05/2021	Urgent (Yellow)
354	01/05/2021	Attention immedate (Red)
355	01/05/2021	Urgent (Yellow)
357	01/05/2021	Urgent (Yellow)
361	01/05/2021	Normal (Green)
362	01/05/2021	UNC – Unqualified Urgency (Brown)
364	01/05/2021	Attention immedate (Red)
366	01/05/2021	Normal (Green)
367	01/05/2021	Normal (Green)
368	01/05/2021	Urgent (Yellow)
370	01/05/2021	Urgent (Yellow)
376	01/05/2021	Urgent (Yellow)

The following Figure shows the content of the previous table with the sole purpose of exemplifying for a better understanding of the result obtained at the end of a work day from which the counts of the type of emergencies that are attended in the course of a day are obtained or a weekend.

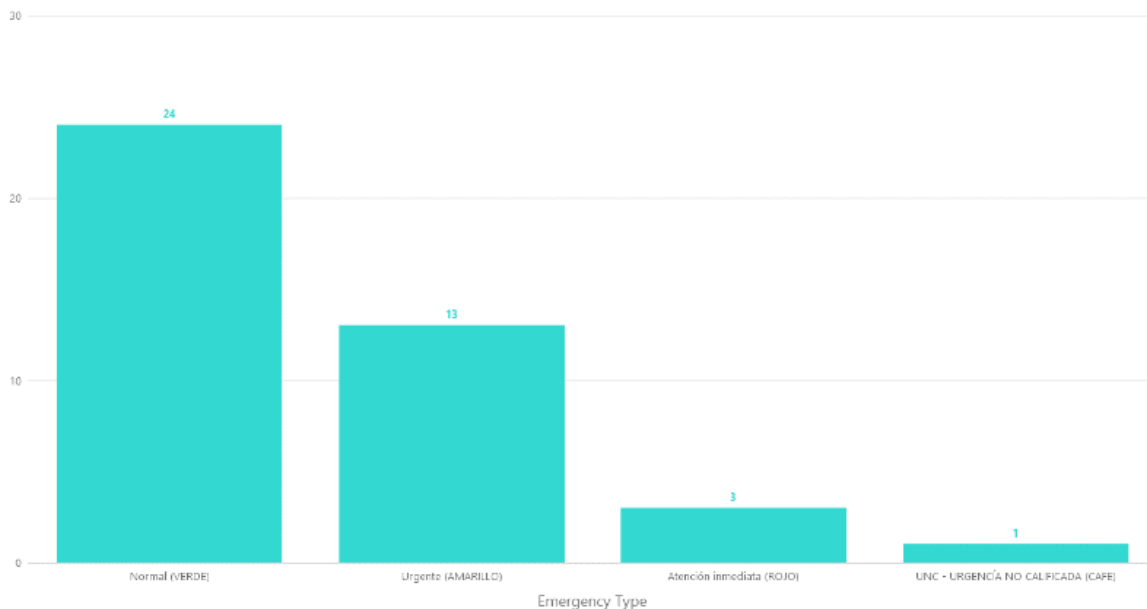


Figure 6. Emergency Type Counts in One day.

3. CONCLUSION

In response to the proposed development, the system is at the height of the problem presented at present and in the way in which it is developed in the future and the analysis of the information by the areas that are involved and the correct maintenance of the application this it can give even more positive results in the long run.

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Author's email: iscluisfdoayala@gmail.com