Routine Babies Vaccination Management System in Iraqi Healthcare Center

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نظام ادارة لقاحات الاطفال الروتينية في مراكز الرعايةالصحيةالعراقية

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المستخلص

في هذا العصر التكنولوجي المتقدم، تحتاج معظم مراكز الرعاية الصحية إلى برامج الإدارة كبديل للكتب والدفاتر وكتابة أدلة المريض من قبل الموظف في إدارة مركز الرعاية الصحية كما كان في الماضي. ان استخدام برنامج لإدارة مركز الرعاية الصحية يساعد على التخلص من المشاكل التي تأتي عند الكتابة في الكتب لإنهاء تعرض هذه الكتب للأضراروالخسارة.اللقاحات مهمة للأطفال. لذا يتعين على جميع الأمهات إعطاء أطفالهم اللقاحات في الوقت المناسب لتجنب الأمراض الخطيرة. تتبع جداول اللقاحات لجميع الأطفال يدويا يمكن أن يكون شبه مستحيل، مما يتسبب في فرص ضائعة لجدولة الأطفال الذين يحتاجون إلى اللقاحات. هذا البحث يزيل هذه المشكلة عن طريق أتمت تتبع اللقاحات من خلال قاعدة البيانات لتنبيه الوالدين بمواعيد اللقاحات، مما يؤدي إلى مجتمع صحي خالي من هذه الأمراض المعدية والأوبئة التي تسببها.

Abstract

In this advanced technological age, most health care center need the management programs as an alternative to the books , notebooks and writing patient evidence by the employee in the management of health care center as in the past . the use of a program to manage the health care center helps to get rid of the problems that come when writing in the books to end the exposure of these books for damage and loss .Vaccinations are important for children. All mothers are required to give their children vaccinations on time to avoid serious diseases .Manually tracking to the Vaccinations schedules for all babies can be nearly impossible, causing missed opportunities to schedule babies in need of vaccinations. This paper eliminates this problem by automating vaccinations tracking through the database to alert parents about Vaccinations schedules , thus leading to a healthy society free of these infectious diseases and the epidemics that cause them.

Key words: routine babies vaccinations , immunizations schedule , Health center management system ,VB.NET with SQL server **.**

1.Introduction

The continuous development and expansion in modern technologies help the improve of many new healthcare management systems to improve efficiencies and quality of care .

babies deserve vaccination against all recommended preventable diseases, Unless there is a medical barrier. In support of that goal Healthcare Center System for Vaccines is a system that can help Health Center to administration the everyday activities. This system minimize the problems that happen while using the manual system[١].

The Healthcare Center Management System use huge resources as Hundreds of the babies will require the services instantly, fast response time are needed. The database must be so large and strong to keep very huge babies and Vaccines data[2].

"Vaccination management, a high-end module of Doctor and Clinic Management Software, has proved to be a boon for vaccination patients as it offers services such as automated reminders and alerts for vaccination pending patients, The main purpose behind the integration of the vaccination management module to our doctor and Clinic Management Software is to make the patients aware of their upcoming scheduled vaccination. The demand for vaccination management in the health care industry is also on the rise" says Ms. Meena , the Business Head of SBS Consulting[3].

To simplify the issues that related of vaccination , this system is being implemented to enable the medical employees to monitor and ensure that the timetable is not missed by the babies or by their parents. By sending constant reminders and alerts through the healthcare software that help to speed up the momentum of immunization or vaccination in babies[4].

The minimize rates of vaccination could cause a threat to the public health. more times can observe that most of the parents forget or skip the date of vaccination . At this situation, the vaccination management of healthcare management software submit big service by sending " Emails and SMS reminders" to the parents Frequently [5].

1.1"Vision of the National EPI Program in Iraqi health center"[6]
The far vision of the National EPI program in Iraq:
1. Each baby His birth is recorded and exist in Iraq take free and good EPI services.
2. All human in danger must be immunized from diseases that we can prevent it by vaccine .

1.2" Issues of Concern and Challenges"
● Lost of precise Demographic population data "as the last census was conducted in 1987".
● the procedure of purchase the vaccines is complex .
● Low levels during coverage routine vaccination "OPV3, Penta2, Hep B3 and measles".
● increase the rates of Deficiency of the vaccine especially between "Penta1 and measles".
● Safety issues .

جدول تعطيمات الأطفال الأساسية			
Basic Vaccination Schedule		جدول التطعيمات الأساسية	
Visit	**Vaccine**	اللقاح	الزيارة
At Birth	BCG	الدرن	الولادة
	HepB	الإلتهاب الكبدي (ب)	
months 2	IPV	شلل الأطفال المعطل	شهرين
	(DTP , HepB)	(الثلاثي البكتيري ؛ الإلتهاب الكبدي (ب) ؛ المستدمية النزلية)	
months 4	OPV	شلل الأطفال الفموي	4 شهور
	(DRP , HepB , Hib)	(الثلاثي البكتيري ؛ الإلتهاب الكبدي (ب) ؛ المستدمية النزلية)	
months 6	OPV	شلل الأطفال الفموي	6 شهور
	(DRP , HepB , Hib)	(الثلاثي البكتيري ؛ الإلتهاب الكبدي (ب) ؛ المستدمية النزلية)	
months 9	(Measles (mono	الحصبة المفرد	9 شهور
12 months	OPV	شلل الأطفال الفموي	12 شهر
	MMR	الثلاثي الفيروسي	
	Varicella	الجديري المائي	
18 months	OPV	شلل الأطفال الفموي	18 شهر
	(DTP m Hib)	(الثلاثي البكتيري ؛ المستدمية النزلية)	
	(Hepatitis (A	الإلتهاب الكبدي (أ)	
24 months	(Hepatitis (A	الإلتهاب الكبدي (أ)	24 شهر
years 4-6	OPV	شلل الأطفال الفموي	4-6 سنوات
	DTP	الثلاثي البكتيري	
	MMR	الثلاثي الفيروسي	
	Varicella	الجديري المائي	

Figure(1)national immunization program

1.3 Advantages to both parents& Employees

The system is useful for babies who are taking the free services from the health center all the details are stored in the database , so the service is done fastly. All the details about the vaccines are also kept in the database that use a development algorithm:

1 - asks for upcoming vaccinations so Appointments can be determined in advance .

2 - give alerts for delayed vaccinations .

3- marking the multiple vaccines .

4- justify the recommendations for vaccine .

the automation of the Health Center will help greatly in keeping exact information about the babies who are deserve the free services and the babies who are not deserve   the free   services , vaccine information , babies records ,and program daily dispatching of babies vaccine to various babies[7].

2-Overview of Technologies Used

1.Front EndTechnology:VB.NET Language

VB.NET is a programming language designed to create applications that work with Microsoft's new .NET Framework.

The .NET Framework is a new computing platform that simplifies application development in the highly distributed environment of the Internet. The .NET Framework is designed to fulfill the following objectives[8].

2. Back End Technology :SQL Server Database

A database in Microsoft SQL Server consists of a collection of tables that contain data, and other objects, such as views, indexes, stored procedures, and triggers, defined to support activities performed with the data[9].

We can easily retrieve various data based on our demands using SQL Queries. Sample data has been entered in the relational tables[10]. Some useful queries that can be imposed on our designed system but cannot be retrieved that speedily from the existing partly manual and partly computerized information system[11].

3-The Proposed System :

The exist system has clear problems, leading to more usage of human power and time. The exist system which has been proposed is very easy to work .The computerization of the vaccination in the health center will reduce the work that is done manually. The patients at the registration office are registered within no time, because every time there is no need search for the particular patient in the shelves .The information about vaccines are maintained without any complexity and all reports are made automatically by this system there is no need for the calculations.

3.1 Implementation

Immediate response on searching data where the end user can search for the babies records easily by only some criteria such as the baby ID or baby name instead of search the baby record from hundreds or thousands of the baby records from the shelves.

Healthcare management system contains five modules**:**

1.Vaccinating objectives.

2.Children information.

 3 .Vaccines information.

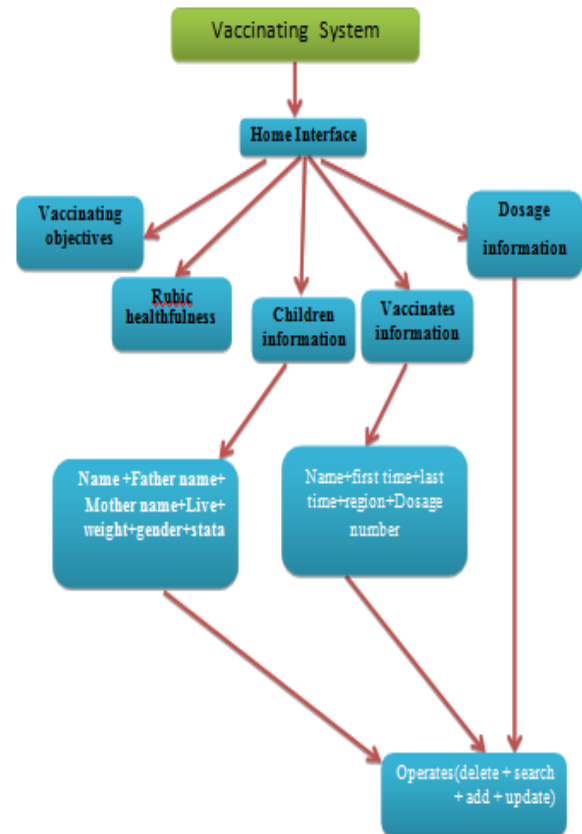4.Dosage Information

5. Health Guidelines

Figure (2)The Flowchart of the vaccination system

3.2 Results and Screens

3.2.1 Children information :-

When user wants to start running the system the user must firstly enter the

information. the following window will appear.

Figure (3)Children information

3.2.2 Vaccinates information:-

Figure(4) vaccinates information

the user must enter the information of vaccinates. When the user runs the system, the following window will appear (vaccinates information) .user can enter the(vaccinate name , first time, last time, the number of dosage),and can make the operates Such as (add, delete, and update).

After that user select the region of the medical clinical if the child isn't from the specific region the database doesn't agree This information.

3.2.3 Dosage Information

Figure(5) Dosage Details

Figure(5) Search for a child benefiting from the vaccine

3.2.4 Health Guidelines

Figure(7) Health Guidelines

4. Conclusion

Using a database management system is an effective way in current and future life. This Healthcare Center System for Vaccines also provides anabstract of Date of vaccination of each babyand required

vaccinations in the baby card, to immediately inform all employees on each baby's state.Detailed reports can be created according to timetables that separate vaccination from each other. The employee can also easily produce electronic reports on babies vaccines, Easy input, deletion and update of babies details.

The future enhancement is essential and continuous improvement is needed to access the final form such as the system must be on the internet.

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