

# **Dissertation Title**

## **Web-Based Application for Appraisal Department – “A Step towards Making Department Paperless”**

**A Dissertation Proposal for  
Post Graduate Diploma in Health and Hospital Management**

**By**

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**International Institute of Health Management Research  
New Delhi**

# **Dissertation Title**

## **Web-Based Application for Appraisal Department – “A Step towards Making Department Paperless”**

**A dissertation submitted in partial fulfillment of the requirements  
for the award of**

**Post-Graduate Diploma in Health and Hospital Management**

**by**

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**International Institute of Health Management Research  
New Delhi**

**May, 2013**

May, 2013

## Certificate of Internship Completion

Date: 1/4/2013

### TO WHOM IT MAY CONCERN

This is to certify that **Aminderbir Singh** has successfully completed his 3 months internship in our organization from January 01, 2013 to April 01, 2013. During this intern he has worked on **Web-Based Application for Appraisal Department- A step towards Making Department Paperless** under the guidance of me and my team at National Board of Examinations.

We wish him good luck for his future assignments

(Signature)

(Name)

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## Certificate of Approval

The following dissertation titled " **Web-Based Application for Appraisal Department- A Step towards Making Department Paperless**" is hereby approved as a certified study in management carried out and presented in a manner satisfactory to warrant its acceptance as a prerequisite for the award of **Post- Graduate Diploma in Health and Hospital Management** for which it has been submitted. It is understood that by this approval the undersigned do not necessarily endorse or approve any statement made, opinion expressed or conclusion drawn therein but approve the dissertation only for the purpose it is submitted.

Dissertation Examination Committee for evaluation of dissertation

Name

Signature

  
DR. BRIJENDER SINGH DHILLON

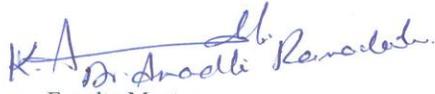
Dr. Anandli Ramachandran KA dl.

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## Certificate from Dissertation Advisory Committee

This is to certify that **Aminderbir Singh**, a graduate student of the **Post- Graduate Diploma in Health and Hospital Management**, has worked under our guidance and supervision. He is submitting this dissertation titled "**Web-Based Application for Appraisal Department- A step towards Making Department Paperless**" in partial fulfillment of the requirements for the award of the **Post- Graduate Diploma in Health and Hospital Management**.

This dissertation has the requisite standard and to the best of our knowledge no part of it has been reproduced from any other dissertation, monograph, report or book.



Faculty Mentor

Designation

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Date



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## FEEDBACK FORM

**Name of the Student:** Aminderbir Singh

**Dissertation Organization:** National Board of Examinations under Ministry of Health & Family Welfare

**Area of Dissertation:** Training & Monitoring Section

**Attendance:** Complete

**Objectives achieved:** Completion of tasks with sincerity  
Timely Completion of Projects Assigned  
Timely Submission of Reports and Documents

**Deliverables:** "Web Based Application for Appraisal Department- A Step towards Making Department Paperless"

**Strengths:** Good Managerial Skills  
Good Communication Skills  
Time Management  
Professionalism  
Multitasking

  
Signature of the Officer-in-Charge/ Organization Mentor (Dissertation)

Date: 30/04/2013

Place: New Delhi

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Aminderbir Singh

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## National Board of Examinations

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The National Board of Examinations was established in 1975 on the basis of the Report of a Working Group set up by the then Prime Minister Smt. Indira Gandhi. Since 1982 the Board has been functioning as an independent autonomous body established under Societies Registration Act.

The Board conducts following activities:

1. **EXAMINATIONS** : The National Board of Examinations conducts examinations in a planned and scientific manner in regard to evaluation, assessment.

The following exams are conducted by NBE:

a) **CENTRALIZED ENTRANCE TEST (CET)** : There is a common CET for all Broad specialties . Candidates who have completed their compulsory internship after graduation are eligible to take the CET examination Centralized Entrance Test ( Super- Specialities) and Centralized Entrance Test (Post-Diploma) ( Conducted twice a year).

b) **FINAL THEORY EXAMINATION** consists of 4 papers of 3hours duration on each consisting of 10 short answer/essay type questions. A total 3056 and 4324 candidates appeared and 1011 and 1743 passed in the DNB-Final Examination during the year 2009-2010 and 2010-2011 respectively ( exam conducted twice a year at exam centers all across country ).

c) **POST DOCTORAL FELLOWSHIP PROGRAMMES** India has the expertise in various sub-specialty areas, with centers having high tech equipment and trained man power performing exceptional quality work. There are many young medical post graduates with aptitude for higher learning. Considering the need to increase man power that can render highest degree of profession work , the National Board has started Postdoctoral Fellowship courses in 16 specialties.

d) **SCREENING TEST FOR FOREIGN MEDICAL GRADUATES** -The Government of India has entrusted the conduct of screening test under Screening Test Regulations 2002 for the candidates who have undergone medical training abroad to the National Board. The purpose of screening test is to qualify for registration as medical practitioner with the MCI or any State Medical Council. Exam inducted twice a year since year 2002.

## 2. ACCREDITATION

The Board is the prime national level organization that has set a mechanism for imparting post graduate teaching and training in the sphere of higher medical education. Leading centers of excellence and in public, private and defense institutes all over the country that have been accredited by NBE for imparting training based on the defined accreditation criteria.

## 3. CONTINUING MEDICAL EDUCATION PROGRAMME/WORKSHOPS.

The trainers as well as the trainees are given adequate exposure to the fundamentals of the education system and advances in medical sciences.

4. SPECIALITY ADVISORY BOARDS - NBE has constituted Specialty Advisory Boards for various disciplines in which the examinations are conducted. The experts from all over the country drawn for various institutes in various disciplines are member of these Boards.

5. Diplomate qualifications (DNB) awarded by the National Board of Examinations have been equated with post graduate degree and postdoctoral level qualifications of universities by the Government of India Ministry of Health and Family Welfare. The holders of Board's qualifications awarded after an examination are eligible to be considered for specialist's posts in any hospital and teaching institutions.

Till date, NBE has certified approx 30,000 distinguished professionals as Diplomate of National Board (DNB). 4521 candidates have been declared successful during the year 2010-11 in the DNB Final Examinations. Successful candidates are conferred with DNB qualification at convocation conducted by NBE. NBE has conducted 16 convocation a till date. 17th Convocation is scheduled to be held on 1st Feb,2012 at New Delhi.

6. The Board sustains its activities through following means:

i. Income from examination fees etc (Operational activities) - Examination fees and accreditation fees are charged from applicant institute/candidates to cover the recurrent operational expenditure. Any income more than expenditure, is any, is utilized for capital expenditure and creation of infrastructure of NBE such as regional offices and extending the activities of NBE.

ii. Plan development/capital expenditure capital expenditure and planed development are supported by Ministry

of Health by giving bulk grant. In the past five years, MOHFW granted 7.1 crores to NBE for creation of offices building.

iii. During the previous year NBE income including grant-in-aid was 28.31 crores and expenditure including outstanding liabilities of 27.34 crores.

7. The National Board of Examinations has following employees:

Group A ( Assistant Director's and Above ).	- 15
Group B.	- 56
Group C.	- 10

In addition , 22 contractual employees are working in NBE.

Non Core activities as Housekeeping, Operations of Call Center Logistics etc. are outsourced.

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### **Areas of Engagement**

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Conducting Tele conferences  
Conducting Radio conferences  
Conducting CME/ Workshops  
Website Designing

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### **Managerial Tasks**

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1. Coordinated meetings
2. Coordinated CME ON “Evolving Paradigms In Diabetes Management”
3. Coordinate Tele & Radio Counseling at IGNOU every Thursday
4. General Tasks in the Training & Monitoring Department

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### **Reflective Learning**

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1. Conducting meetings
2. Organizing CME’S
3. Conducting Tele & Radio Counseling’s
4. Preparation of Official Documents
5. Prioritization of work
6. Time Management

**Part II:**  
**Dissertation Report**  
**“Web-Based Application for Appraisal Department –**  
**“A Step towards Making Department Paperless”**

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## Chapter 1 - Introduction

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High quality vision, efficiency, and creativity are key ingredients to a successful organization. While much emphasis is placed on how these factors affect work output, organizations are also seeking ways to improve their internal operations. Increasingly, they are finding that reducing paper consumption can improve efficiency and reduce costs. Additionally, it can earn them a reputation for being environmentally conscious.

As many people who work in an organization can attest, paper is ubiquitous. While buried under piles of memos, reports, to-do lists, order forms, and staff manuals, paper's services seem indispensable, yet the paper itself seems to be a great burden. Quite likely, both impressions are true.

The ability to document processes, place or fill orders, manage human resources, communicate between employees, store information, edit documents, bill customers, and legally protect oneself or the organization can be the core of business operations. Historically, providing these services required the use of paper.

Yet for many of these services, there are new tools or methods available that could replace the use of paper and provide the service more efficiently and/or cost less. There are significant economic and environmental concerns related to sustained paper dependence. To fully understand these concerns, it is important to understand the magnitude of current paper consumption.

A paperless office is a work environment in which the use of paper is eliminated or greatly reduced. It is argued that "going paperless" can save money, boost productivity, save space, make electronic documentation and information sharing easier and minimize environmental damage.

In a paperless environment one can easily store documents e.g. reports, faxes, invoices, letters, etc.. in electronic forms on a centralized hard drive thus eliminating the need for cumbersome physical files. Once implementation of the paperless office begins, one can improve its firm's efficiency & effectiveness, security, accuracy, and ease of document retrieval, along with eliminating the need for additional physical storage space for department files.

The National Board of Examinations was established in 1975 on the basis of the Report of a Working Group set up by the then Prime Minister Smt. Indira Gandhi. The terms of reference of the Working Group set up in 1975 by the Government of India were:

“To examine the need for uniformity in the standard of examination for the award of postgraduate degrees and

diplomas and to suggest ways and means of achieving it either through one or more national examining bodies, in replacement of or in addition to the existing system.

### **Recommendations of the Working Group**

“There is an urgent need for an organization that could conduct postgraduate examinations at national level of high academic standards to ensure: A high quality of medical services given to the people by doctors certified by such examinations Raising of Standards of medical education in general Availability of prestigious qualifications within the country comparable to similar qualifications given in foreign countries and thus minimize the tendency of medical graduates to go abroad to acquire these degrees National integration The National Board functioned as a wing of the National Academy of Medical Sciences from 1975 to 1982. The Government of India, after a review, took a policy decision to make it an independent autonomous body with effect from March 1, 1982 under the Ministry of Health & Family Welfare as a registered society.

There are more than 350 recognized Medical Colleges in the country. In addition to Postgraduate teaching institutions under MCI, there are 450 accredited institutions imparting training in various Broad and Super specialities for the award of postgraduate qualification in Broad and super specialities. The Board at present conducts postgraduate and postdoctoral examinations in 54 disciplines approved by the Board for the award of Diplomate of National Board. The Medical Council of India has laid down standards for post graduate examinations conducted by various medical colleges and affiliated to concerned universities and other institutions, yet the levels of proficiency and standards of evaluation vary considerably in these institutions. The setting up of a National Body to conduct post graduate medical examination was intended to provide a common standard and mechanism of evaluation of minimum level of attainment of the objective for which post graduate courses were started in medical institutions. Moreover, intra country and international comparison is facilitated with the availability of commonly accepted evaluation mechanism. Training & Monitoring

NBE is doing appraisal on yearly basis for checking the infrastructure and teaching facilities of its accredited Hospitals/Institutions and the Registered DNB Candidates how they are studying in these hospitals by appointing external appraisers for them.

For the benefit of candidates NBE conducts various type of CME's all across India. These workshops are mandatory to attend for DNB Candidates.

Restructuring NBE to become electronic and paperless can seem like an overwhelming task. Because its structure and workflow touches so many different parts of the academics, Examinations, Appraisal, Accreditations, organizing CME's, Thesis and protocol, planning to improve this inconvenience of paper-based documents and manual invoice processing routines can easily become an unmanageable nightmare.

With recent laws that require businesses to exercise due diligence in managing and storing documents with personally identifiable information, paperless office systems are now more critical. In reducing the amount of paper used, processes and systems are employed to further that objective and convert all forms of documentation to digital.

To "go paperless" one uses systems that work entirely online and without the need to print on paper. Common examples are financial systems that replaced general ledgers, databases replacing index cards and rolodexes, email replacing type-written letters and faxes, the internet replacing reference books (e.g. phone books, vendor catalogs, encyclopedias, etc.).

Another way to eliminate paper is to automate paper-based processes that rely on forms, applications and surveys to capture and share data. This method is referred to as 'Enterprise Forms Automation' and is typically accomplished by using existing print-perfect documents in electronic format to allow for pre-filling of existing data, capturing data manually entered online by end-users, providing secure methods to submit form data to processing systems and digitally signing the electronic documents without printing.

The technologies that rights One of the main issues that have kept companies from adopting paperwork automation is capturing digital signatures in a cost-effective and compliant manner.

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## Chapter 2 - Problem Statement

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Paper Consumption Statistics shows that the average American office worker is estimated to use a sheet of paper every 12 minutes—a ream per person every two and a half working weeks—and to dispose of 100-200 pounds of paper every year. The number of pages consumed in U.S. offices is growing by about 20 percent each year. The introduction of email into an organization resulted on average in a 40 percent increase in paper consumption. A worldwide growth of 600 percent in printer accessibility between 1988 and 1993 is in part what contributes to this. The U.S. is by far the world's largest producer and consumer of paper. Per capita U.S. paper consumption is over six times greater than the world average and about 25 percent greater than Japan, the world's second largest per capita paper consumer. According to the Food and Agriculture Organization, global paper products consumption has tripled over the past three decades and is expected to grow by half again before 2010.

To store 2 million paper documents, an organization can expect to spend between \$40,000 and \$60,000 on filing cabinets alone. Those same files could fit on fewer than ten CD-ROMs. Adding the cost of floor space required to house the filing cabinets, and considering that for many companies 45 percent of files stored are duplicates, paper storage is both inefficient and expensive. An effective electronic network and storage system could help cut costs dramatically. Despite the best intentions and even the best filing systems, documents are lost on a regular basis. In fact, approximately three percent of all paper documents are filed incorrectly, and almost eight percent of all paper documents are eventually lost. A study of managers in the U.S. found that they spend an average of three hours per week looking for paper that has been misfiled, mislabeled, or lost. Overall, the cost of misfiled documents is upward of \$120 per document. An effective electronic storage system combined with a well-developed organization system could dramatically reduce this loss.

According to the IPMA, India, per capita paper consumption increased to 8.3 kg as of December 2008, compared to 7.5 kg during 2007-08.

Distributing documents by electronic rather than regular mail can significantly reduce postage costs. This is especially true for larger documents. A 1996 case study found that because of shipping costs, producing and delivering five thousand 1,000-page documents on CD-ROM cost less than half as much as producing and delivering the documents on paper.<sup>17</sup> Savings can also be significant for lighter weight but higher volume mailing. AT&T, for example, found that paper and postage together account for 72 percent of the cost of billing their corporate customers. Online billing can reduce the costs of rendering bills dramatically. Using lighter weight paper, for example 20-pound instead of 24-pound, can also reduce postage costs.

A Lawrence Berkeley Labs study estimates that the cost per ton of handling paper is 20 times the cost of purchasing it and 200 times the cost of throwing it away Automated processes can increase productivity by 50 percent or more. The Superior Court in Cobb County, GA, for example, reduced their real estate processing time from 46 days to 3 hours by implementing a scanning system with electronic document access.

About Appraisal department problems

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## **Rationale**

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There have been many efforts done at NBE to reduce the over all consumption of papers and switch to automation but so far it has not been fully achieved. This is the first effort to convert the appraisal department into a paperless department.

This paper provides the general guidelines for the implementation of a paperless department by developing a website for the same.

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## Chapter 3 - Review of Literature

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### Guidelines for local Appraisers 2012

1. NBE is pleased to suggest your name as local appraiser. The purpose of introducing appraisals of NBE accredited hospitals/institutions is to further improve the quality of training, assess the training infrastructure for the DNB candidates and also assist the local institutions to develop in to a center of academic excellence. This would further add value to the services being rendered in these accredited hospitals/institutions. Please do not think that this assessment has negative connotation. Please plan your appraisal in such a way as to minimally affect the routine working of the department.
  
2. The appraiser should have enough time and expertise to carry out the following activities in the allotted hospitals/Institutions:
  - 2.1 He/she should participate in thesis protocol/progress presentation & discussion; assist the DNB candidates in their thesis work by giving them suggestions and monitoring their progress. He/she should give specific remarks to improve the Thesis work after reviewing the objectives, methodology (sample size, sampling technique, data collection tools etc.), data analysis plan and statistical tests, results and discussion plan etc. of thesis of each candidate. These remarks should also be communicated in writing to the supervisor and the concerned candidate by the appraiser and a copy be sent to National Board of Examinations.
  
  - 2.2. He /she is expected to examine the log book maintained by the candidates and give specific remarks to improve the log book maintenance after reviewing the contents of the log book ( name of procedure, details of the case, salient findings, remarks of the supervisor for the improvement of the candidate etc). Please ensure that the candidates are entering seminars attended , and National Board of Examinations teleconferencing sessions attended by them on the log books. These remarks should also be communicated in writing to the supervisor and the concerned candidate by the appraiser and a copy be sent to National Board of Examinations.
  
  - 2.3. He/ should prepare question paper containing ten short structured questions in the speciality on the topics covered and evaluate the answer sheets. He/she will maintain total confidentiality in these

activities. The arrangements for theory and practical examination will be made by local accredited hospitals/institutions.

- 2.4. He/she will formally conduct practical examination (On the topics/areas covered). The practical will have long case, short cases; ward round, spots and viva voce as per the DNB format.
- 2.5. He/she will communicate the result of assessment to the concerned candidates along with detailed feed back on their performance. He/she will give detailed suggestions to each candidate in writing for improving his/her performance. He/she will act as counselor and give specific remarks for improving the overall performance level of the candidate. **These remarks should also be communicated in writing to the DNB coordinator by the appraiser and a copy be sent to National Board of Examinations. Please note that the feed back must be given to the candidate so that he/she can improve his/her performance.**
- 2.6. He/she will prepare the Examination worksheet for each candidate and submit the same to the concerned hospital for records with a copy of the same to the National Board of Examinations.
- 2.7. He/she will submit the report to the **Training & Monitoring, National Board of Examinations, Medical Enclave, Ansari Nagar, New Delhi – 110029** on the format (enclosed herewith) and should not handover this to the local institution.
- 2.8. He/she will also send report on the infrastructure, patient load and manpower in the concerned speciality of the accredited hospital, to the **Training & Monitoring, National Board of Examinations, Medical Enclave, Ansari Nagar, New Delhi – 110029**
- 2.9. The appraiser should get undertaking from the hospital as given in the annexure-I that the consultants had spent 8-10 hours per week in teaching and training of DNB candidates during the appraisal period, have regular fulltime staff, had followed norms of the Board for the duty assignments to DNB candidates, stipend paid to DNB candidates, leave, fee structure, work assigned to candidates as per residency scheme etc duly signed by the head of the institution.

### **3. Remuneration / Honorarium to the Appraisers**

NBE recommends that suitable honorarium be given to the local appraisers by the concerned accredited hospital/institution, considering the activities performed and number of DNB candidates in the speciality. The recommended minimal amount be given as follows:

- 3.1. Assessment of Infrastructure and facilities in the hospital/institutions in the speciality = Rs. 500/-.
- 3.2. Participation in thesis protocol presentation and discussion = Rs. 500/-per candidate.
- 3.3. Development of theory paper = Rs. 500/-.
- 3.4. Assessment of theory paper(s) = Rs. 500/-
- 3.5. Holding of practical examination = Rs. 1000/- per candidate.

This expenditure will be met out of the fee collected from the candidates. The appraisers should also follow the requirements of the accounts department of the local hospitals for payment of honorarium. The payment for the appraiser will be made to the expert immediately by the concerned hospital as per NBE norms given above, after the completion of the appraisal.

### **Research papers**

A study named “ **Behavior and Decision-Making Research Related to Energy-Efficiency and Climate Change** by **Dr. Carrie Armel** proposed to develop an interdisciplinary website and integrated literature database containing key research relevant to energy decisions and behaviors, for behaviors occurring at the individual and group levels. The goal of the site was to accelerate the adoption and sustained use of energy-efficient technologies and climate-positive actions which would be accomplished by providing a variety of tools that enable visitors to increase the effectiveness of policies, research, and programs, and also by fostering interdisciplinary communication and work. The audience for the site included researchers, policymakers, and program/communication designers at universities, businesses, and governmental or non-governmental organizations. The research was compiled from currently disparate areas including psychology, behavioral economics, diffusion of innovation, marketing, program evaluation, technology commercialization, and others. As a demonstration of the use of this resource, Dr. Carrie Armel, project leader prepared an analytic research paper on a specific topic that explores one or more high-impact approaches for promoting energy-efficient behavior change. The website provided access to professional profiles, research tools, and other resources. The central research tool was a bibliographic database, described below, that will be complemented by supporting

foundational and overview readings. Other research tools included key questions to be addressed by future research, tools for measuring behavior, and resources for comparing the relative energy footprint of specific behaviors. The website also provided links to organizations, academic programs, conferences, and other relevant websites.

According to a study done by the Penn State Green Destiny Council, reducing margins to 0.75” on all sides results in a total reduction of paper usage of 4.75%.<sup>v</sup> Based on potential savings, the following recommendations were made for Penn State to encourage paper use reduction via:

1. The Center for Academic Computing reduced default margin settings to 0.75” in all computer labs.
2. The Executive Administration sent a memo to all Penn State units and departments explaining the benefits of margin reductions to 0.75” to their individual budgets.
3. The Executive Administration requested that default margin settings be reduced to 0.75” for all software available to students through the university licensing agreement.
4. The University President wrote a letter to all the University presidents at other Pennsylvania Institutions and the Big 10 encouraging them to follow their lead of environmental stewardship by following suggestions 1 through 3.

The study goes into further calculations of average printing done in Penn State facilities, based on cited printing practices:

A more in depth look at your agency’s print practices can refine these assumptions for your own organization. (Keep in mind that the calculations are from 2000, and the data cost per ream may have changed. At EPA, the cost per ream in 2012 is approximately \$9.00 per ream or \$90.00 per case.)

These policy recommendations can very easily be adapted to the federal government. The key to the success of the above recommendations is ensuring that everyone is educated as to why the changes are needed by the organization and to show users how the changes will affect them personally, i.e. increased budget due to savings. In addition, executive level engagement is important because staff will be more likely to recognize and respond to requested changes.

**An article called “The Complete Guide To Going Paperless”** provides the general guidelines for the implementation of a paperless office starting from planning the storage and processing of documents, planning the roles of people in an organisation till the implementation phase of the paperless office. It is imperative to

define key personnel roles especially in medium to large organisation. All personnel roles must be properly defined. Staffs who will be responsible for maintaining the file structures, train other staff members on using the file structures and who will scan documents will have to be identified. It may be appropriate that the staff who does the copying and printing is responsible for scanning and storing the documents. In terms of hardware needs, it is recommended that sufficient disk space is made available. Because hard drive space is relatively inexpensive, we recommend purchasing more hard drive space than you think your firm will need in the future to accommodate additional storage space. When assessing your hardware needs, you need also to consider your scanning needs. Depending on your scanning needs, the type and number of scanners required for your organization will have to be determined. The scanners will be used to convert all your documents to electronic and in universal format for e.g. PDF. PDF captures documents as they appear on-screen with fonts and formatting intact. In terms of software one may also need OCR software to convert hard copy to text document for editing purposes

In a case study “**AT&T: The Benefits of the Intranet and Online Billing**” showed that because of the technological nature of AT&T’s business, the company was at an advantage to implement significant communication improvements that could simultaneously reduce paper consumption and improve efficiency. They implemented two significant changes—providing company-wide access to the intranet and introducing online billing to customers—that are both proving to bring significant returns on their investment. By 2001, 95 percent of AT&T’s employees were connected to the internet.<sup>72</sup> This change allowed AT&T to not only transition previously printed material to online versions, it also allowed them to circulate more information without an increase in costs. For example, daily or weekly updates are sent to all employees about AT&T’s activities. These updates help create a more coherent corporate culture, yet would be cost-prohibitive to print and distribute in paper form. Completing projects is often faster online as well, such as shifting the development and distribution of their Environment Health & Safety paper newsletter to their internal website. This change reduced the turn-around time on the project from months to weeks.<sup>73</sup> Overall, AT&T has reached a communication rate of at minimum one million electronic messages per week, or fifty million per year, within the company. One focus of having the Internet is converting numerous documents from paper to electronic versions. Almost all human resource procedures and training manuals are available on the company’s intranet. They now distribute the Environmental Health and Safety newsletter online.

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## **Chapter 4 – Aim**

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Development of Web Based Application for conducting the formative assessment i.e. appraisal of DNB trainees in paperless electronically manageable platform

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## **Objectives**

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- Map the turn around time for current process based on previous year records and NBE staff feedback
- Prepare system requirements identifying the elements of input, process and output.
- Develop the web based application for reducing the process turn around time and for process standardization
- Pilot test the application

## Chapter 5 - Methodology

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### Study Design:

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Descriptive

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### Study Population:

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All NBE accredited institutions/hospitals, DNB candidates and Appraisers registered with NBE

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### Sampling:

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State Delhi was selected for conducting pilot study based on convenience. Appraisers were contacted for their availability. Only 6 appraisers were available during the period of pilot study. One appraiser was assigned for one specialty. One appraiser for medicine one for Radio Diagnoses, Two for Orthopedics, One for Anesthesia and One for OBGYN were assigned. The appraisal was conducted for 3 Hospitals in Delhi based on convenience namely Deen Dayal Upadhyay Hospital, St. Stephens Hospital and ISIC. A total of 40 candidates were assessed by these appraisers. Out of 40, 20 candidates were then included in a study to determine the feedback on the online system to appraisal based on convenience.

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### Tools & Techniques:

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Online reports submitted by these appraisers on the web-site designed for online system of appraisal were used to form the feedback of the candidates and hospitals. A questioner comprising of 7 questions was used to take the feedback of candidates about the online appraisal.

### Inclusion Criteria

Only hospitals/institutions accredited with NBE were included in the study. Appraisals available during the phase of pilot study were included

### Exclusion Criteria

Hospitals not accredited with NBE were not included in the study.  
Appraisals not available during the phase of pilot study were not included.

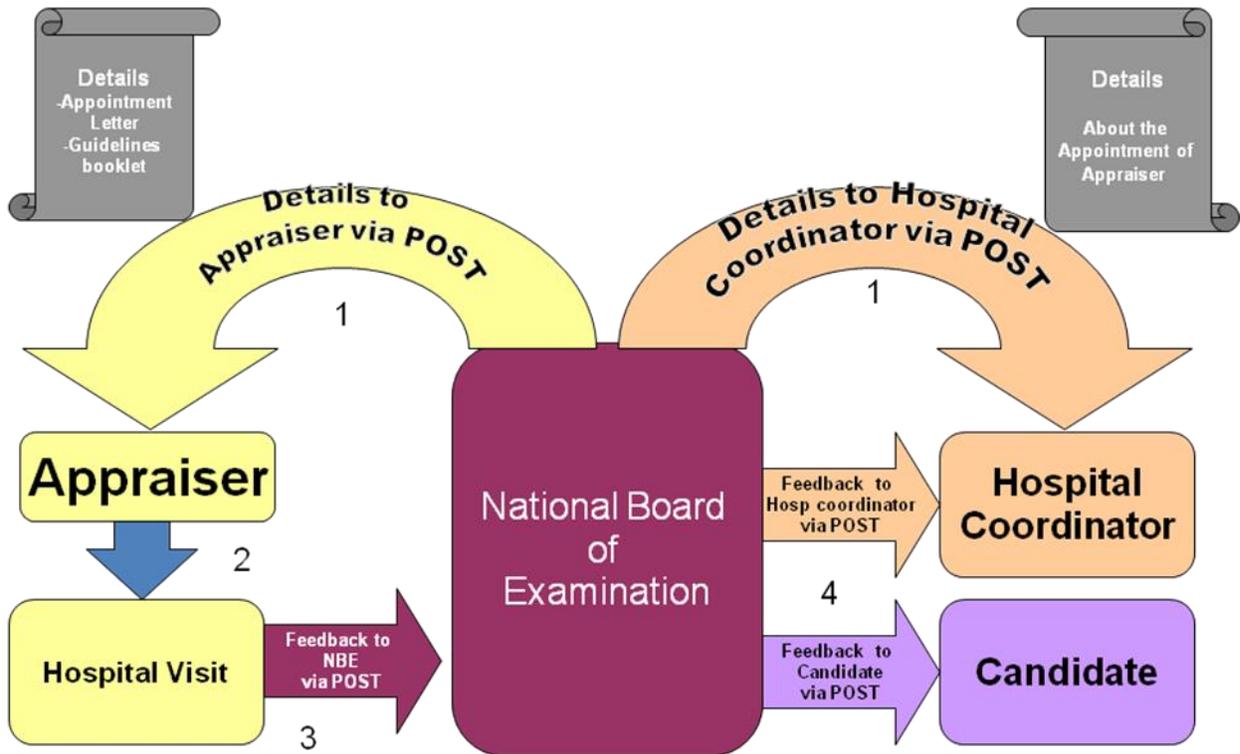
### Data Management and Statistical Analysis

Analysis was done on Microsoft Excel

### Fig 5.0 GANT CHART

<b>ACTIVITIES</b>							
1. Exploring of IT deptt.							
2. Studying of all the manual processes							
3. Proposal Designing							
4. Learning and Practiced Php & Web Hosting							
5. Data gathering							
5. Designing & Implementation							
6. Testing							
8. Pilot Testing							
<b>TIMELINE</b>	21 <sup>st</sup> Dec – 2 <sup>nd</sup> Jan	3 <sup>rd</sup> Jan – 27 <sup>th</sup> Jan	28 <sup>th</sup> Jan – 3 <sup>rd</sup> March	4 <sup>th</sup> March –14 <sup>th</sup> Apr	15 <sup>th</sup> Apr– 27 <sup>th</sup> Apr	28 <sup>th</sup> Apr onwards	2 <sup>nd</sup> May

## Process Flow



**Fig 5.1 Current Process Flow**

- NBE sends the details (appointment letter, guideline booklet) to the appraiser. Also the details about the appointment of the appraiser are sent to the hospital coordinator.
- Then the Appraiser makes the hospital visit and assess the candidate
- The feedback of the candidate and hospital is send manually via post to NBE
- Feedback of the candidate as well as hospital is assessed by NBE and sent to the candidate

Fig. 5.2 Duration of Process

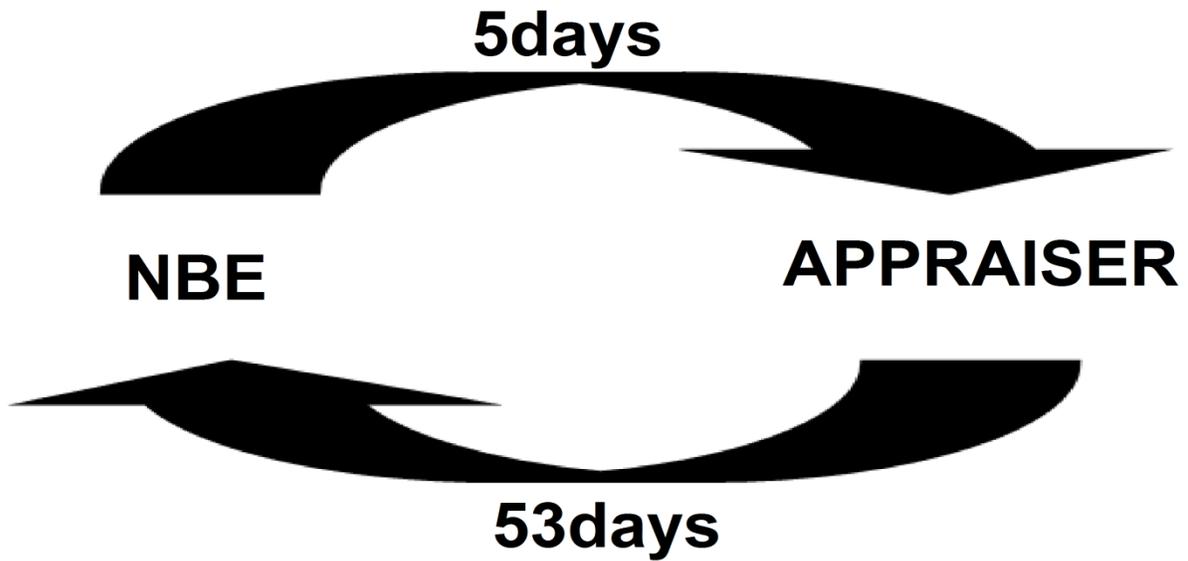


Fig. 5.3 Time taken in the Process Flow within NBE with Papers

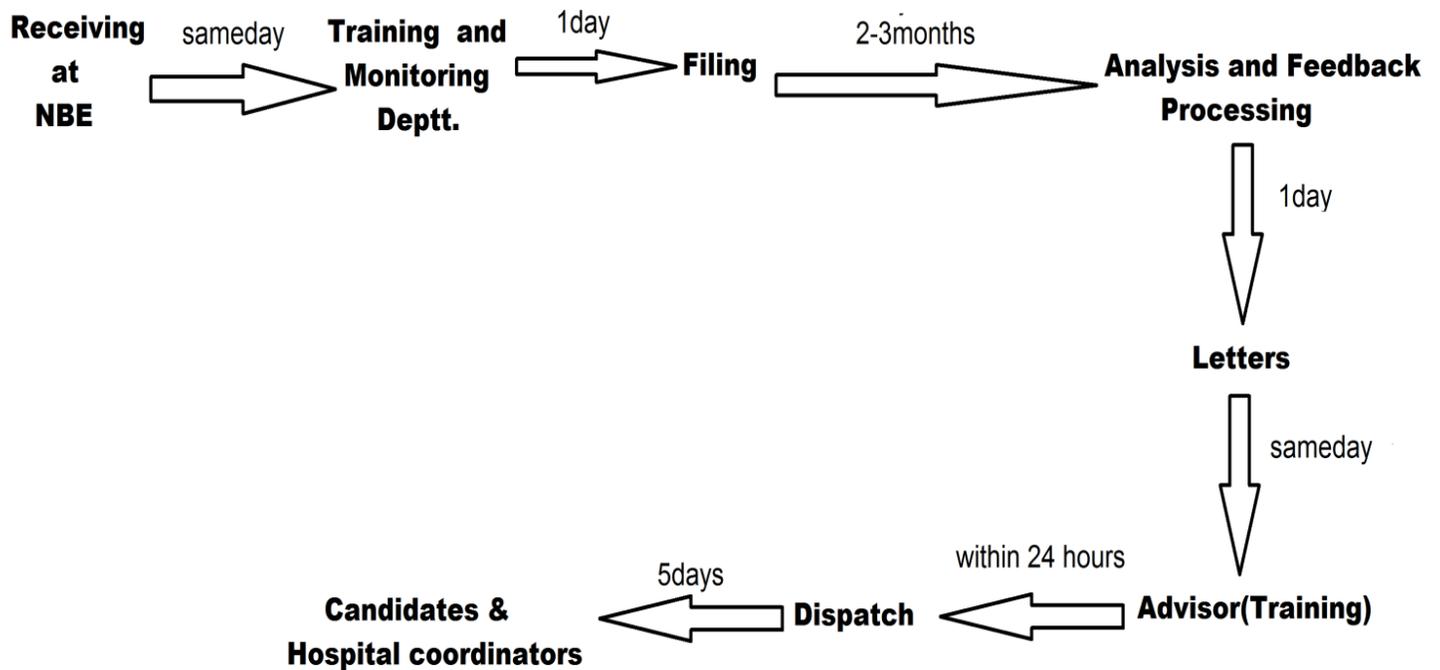
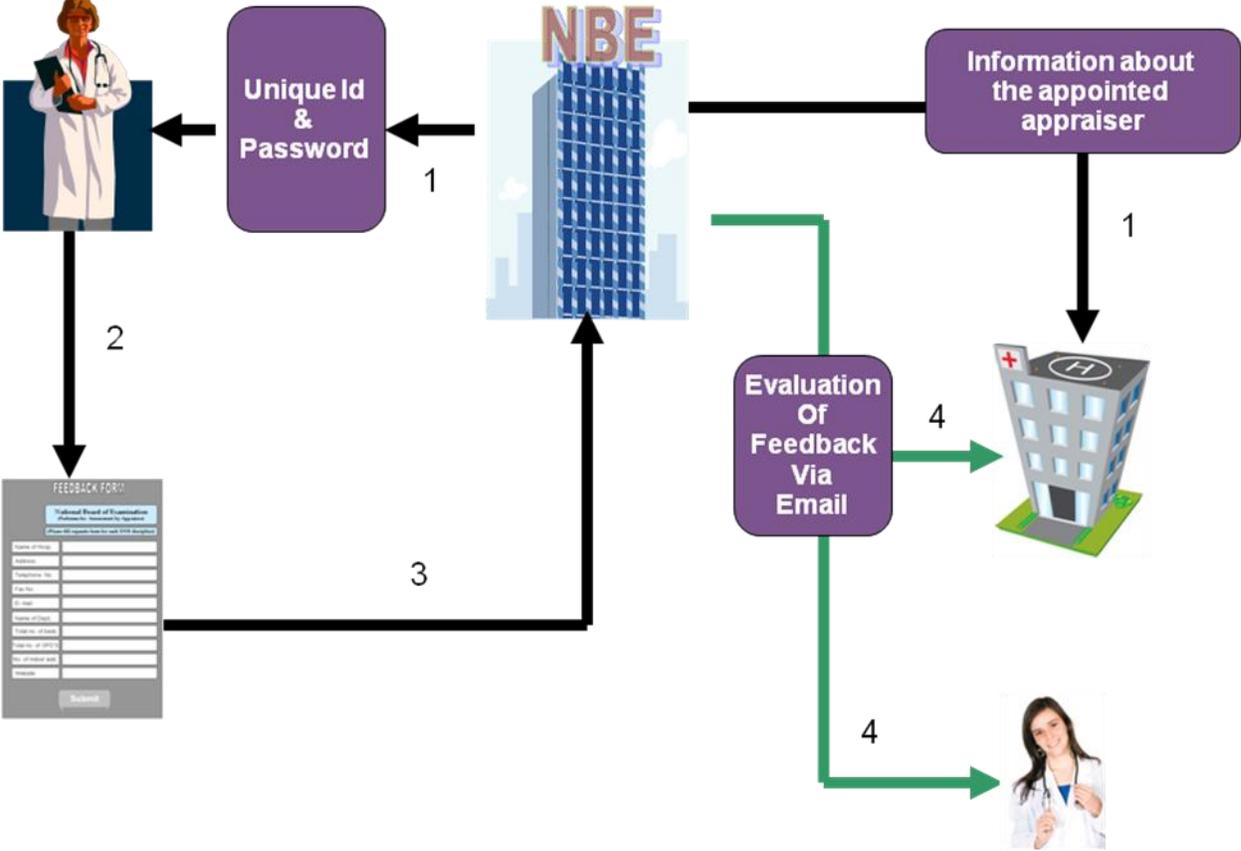
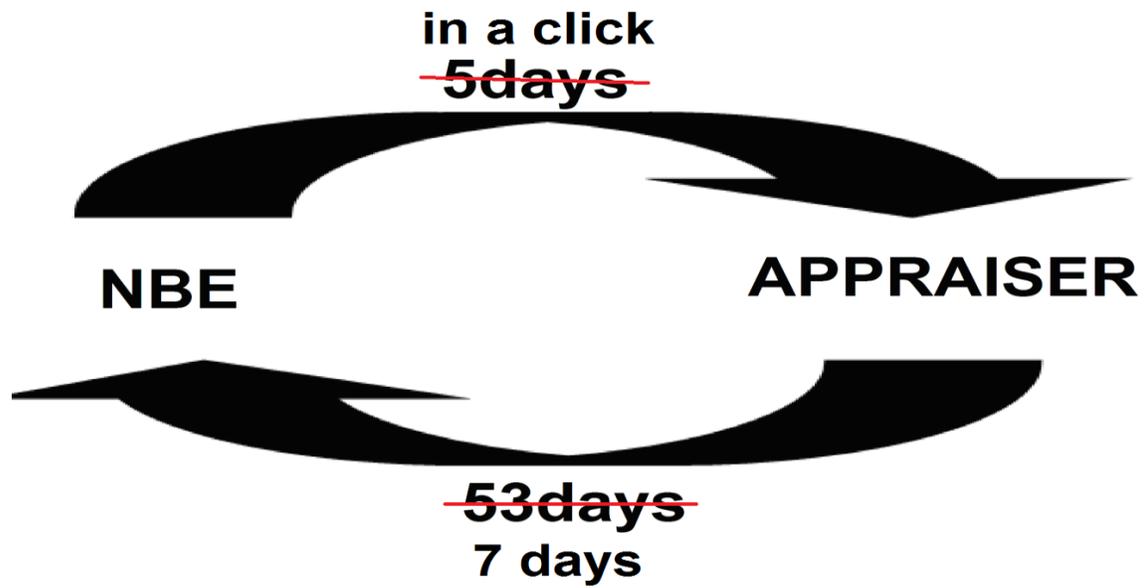


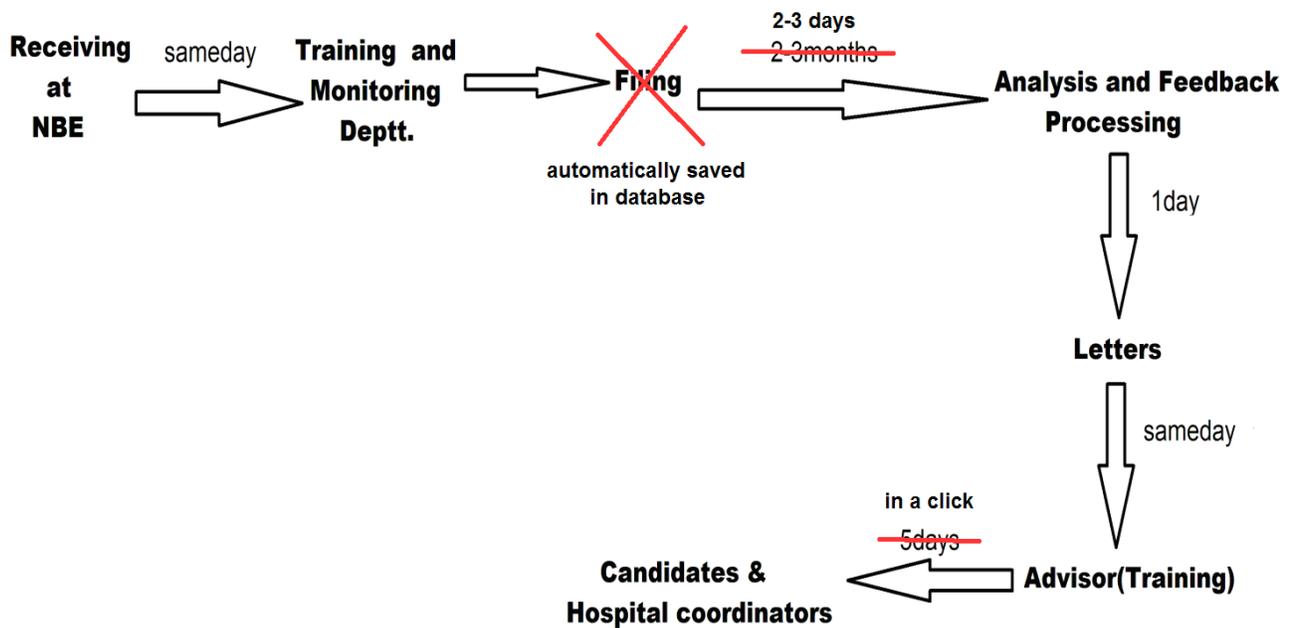
Fig-5.4 Proposed Workflow





**Fig-5.5 Duration of Proposed Process**

**Fig. 5.6 Expected Time taken in the Process Flow within NBE with Web-Application**



## Chapter 6 - Pilot Study

**Table-6.1 No. of DNB Candidates in Delhi Included In The Pilot Test**

Hospital	Specialty	Candidates
St. Stephen's	Medicine	8
	Radio Diagnostics	5
	Ortho	6
Indian Spinal	Anesthesia	4
	Ortho	8
Deen Dayal Upadhyay	OBG	9
TOTAL	5	40

### Training given to the assessors

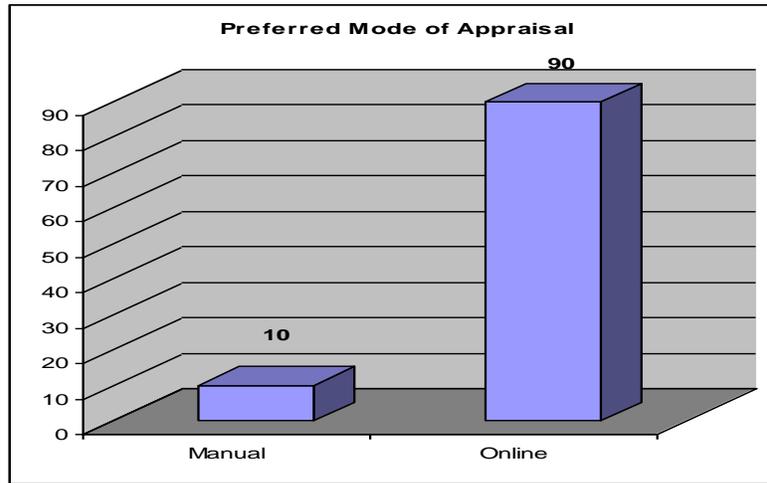
- Total 6 assessors were called for training
- The assessors were briefed about the old and new appraisal systems
- The various components of the new system were discussed with the assessors
- Demonstration of the web based appraisal system was provided to them
- The various questions /items were discussed with the appraisers
- Sample for data entry was provided to them for practice
- The appraisers were assigned on the same day (8<sup>th</sup> May) for appraisal of DNB candidates of the following hospitals in their specialty.

**Table-2**

**Table-6.2 Specialty wise details of candidates**

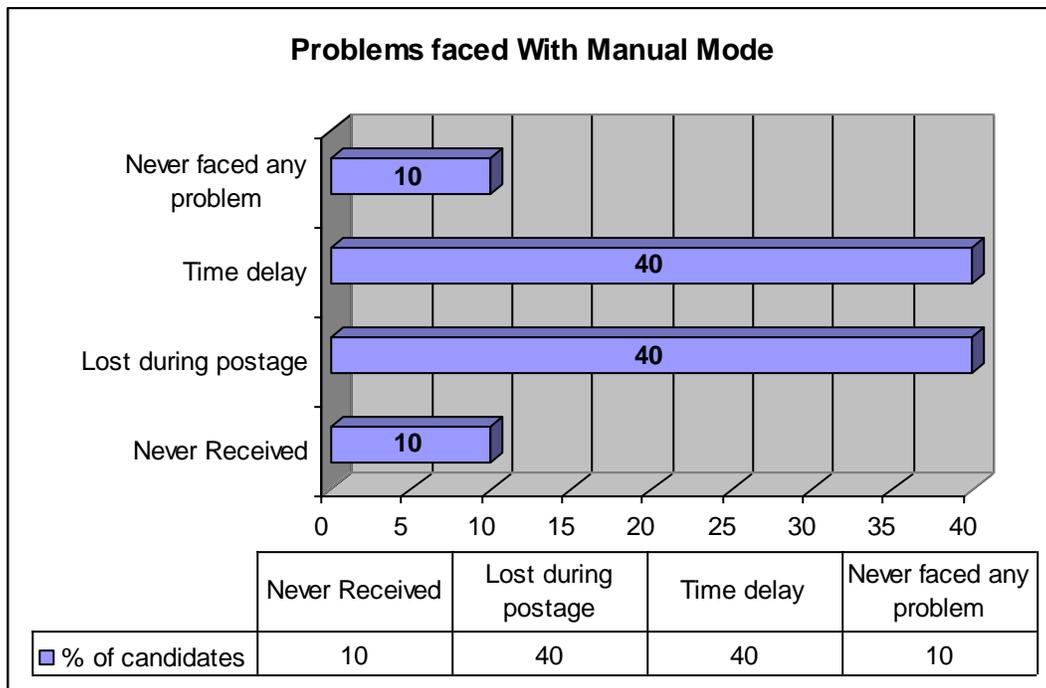
<b>Hospital</b>	<b>Specialty</b>	<b>Candidates</b>	<b>Assessors assigned</b>
St. Stephen's	Medicine	8	1
	Radio Diagnostics	5	1
	Ortho	6	1
Indian Spinal	Anesthesia	4	1
	Ortho	8	1
Deen Dayal Upadhyay	OBG	9	1
<b>TOTAL</b>	<b>5</b>	<b>40</b>	<b>6</b>

## Chapter 7 - Study Findings



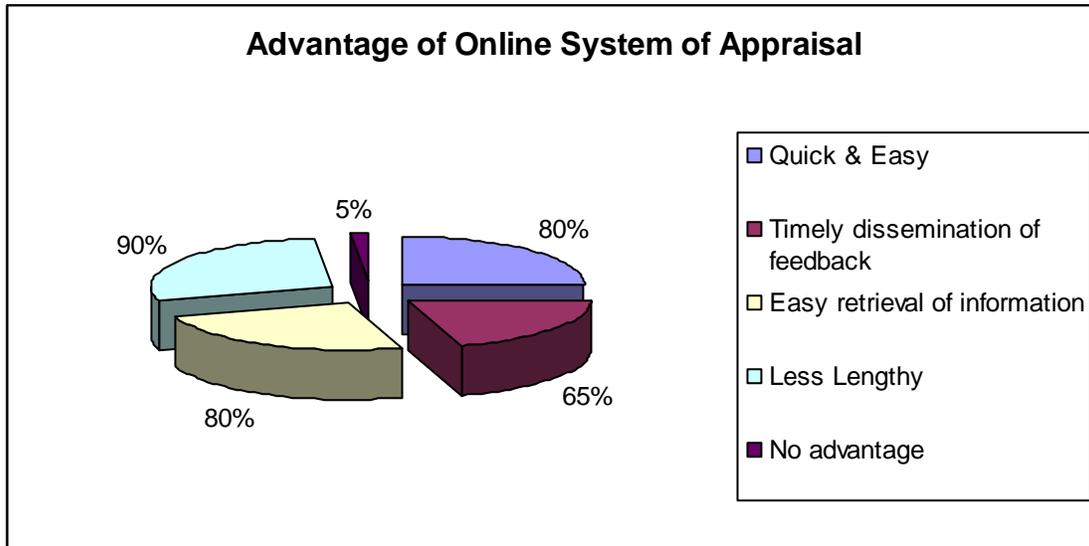
**Fig-7.1 Preferred mode of Appraisal**

The study finding shows that most of the candidates preferred online mode of appraisal over manual mode. 90 % of the candidates preferred Online Mode over Manual Mode.



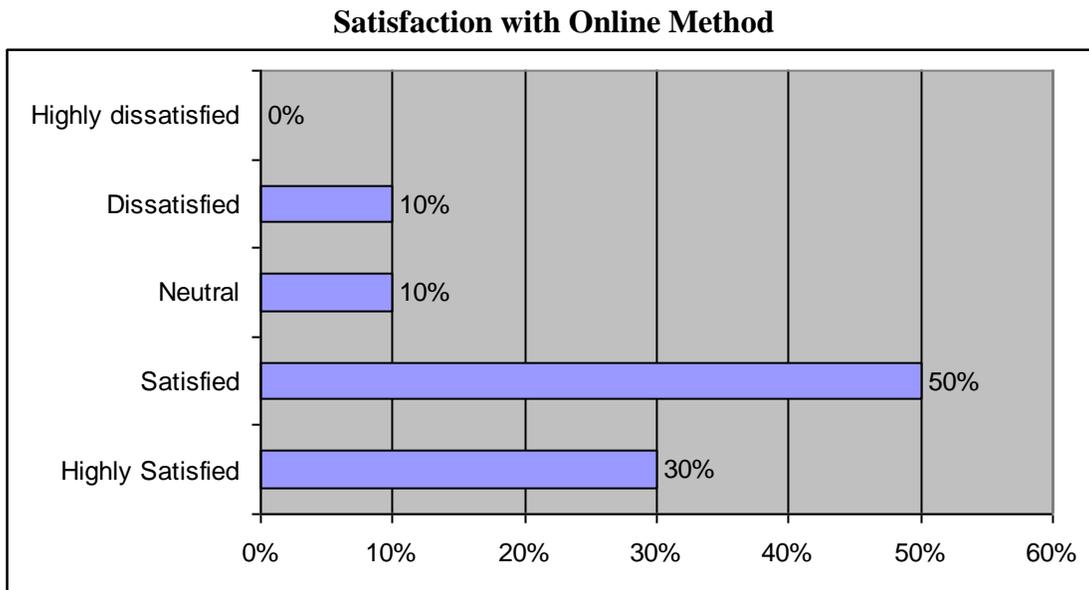
**Fig-7.2 Problem faced with manual mode**

The figure shows that 40% of the candidates described time delay as the major difficulty faced with manual mode. 10% of the candidates never received their feedback. 40% lost their feedback during postage. 10% of the candidates never faced any difficulty with the manual mode.



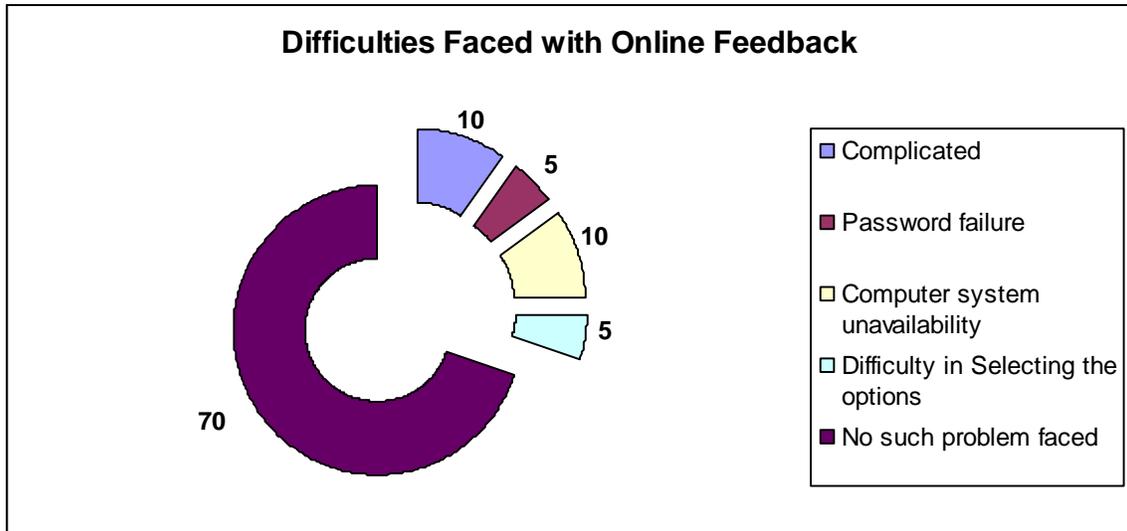
**Fig-7.3 Advantages of online system of appraisal**

90% of the candidates described online system of appraisal as less lengthy. 80% of the candidates described online system as easy mode for retrieval of information and as a quick and easy method. 5% of the candidates feel this online method has no advantage over manual method.



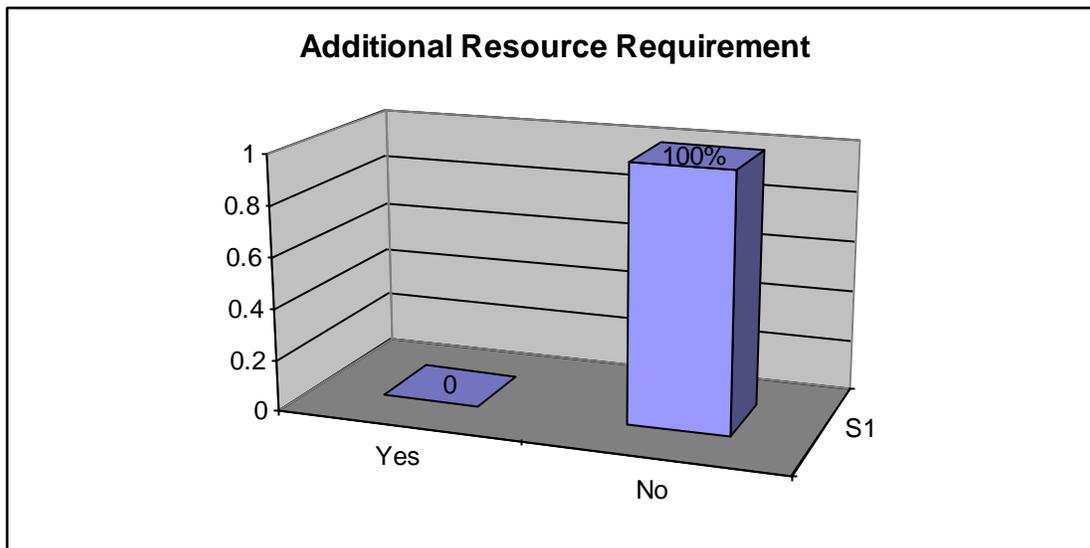
**Fig-7.4 Satisfaction with Online Method**

Majority of the candidates (more than 50 %) were satisfied with the online method. 30% of the candidates were highly satisfied. 10% of the candidates are neutral. 10 % were dissatisfied.



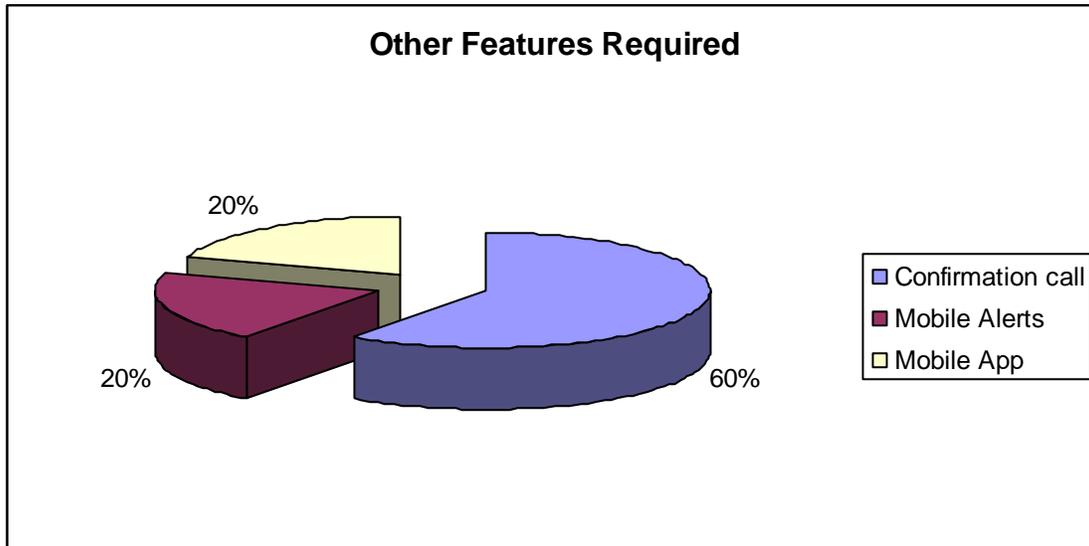
**Fig-7.5 Difficulties faced with online feedback**

Majority of the candidates (70%) did not face any difficulty with online feedback whereas 10% of the candidates faced difficulty due to unavailability of computer systems. 10% found online system to be complicated. Very little percent of candidates (5% each ) faced issues with password failure and & difficulty in selecting options.



**Fig-7.6 Additional resource requirement**

No candidate said that there was no additional resource requirement except for computer with internet facility.

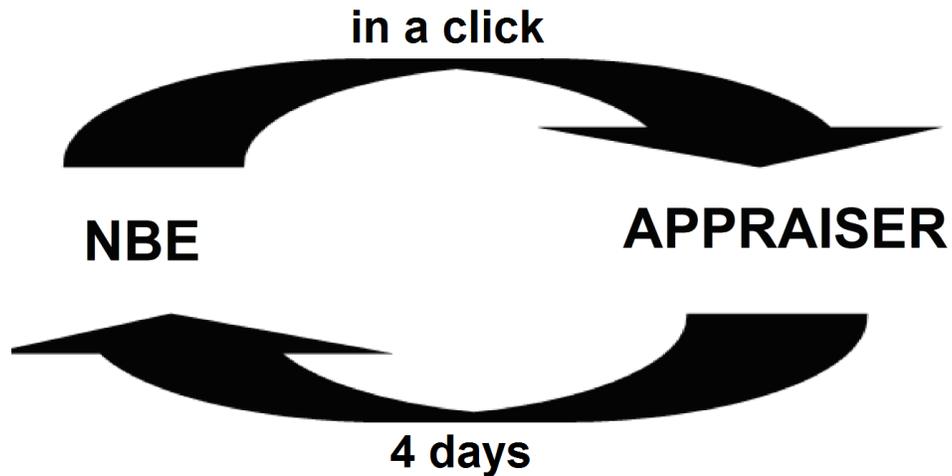


**Fig-7.7 Other features required**

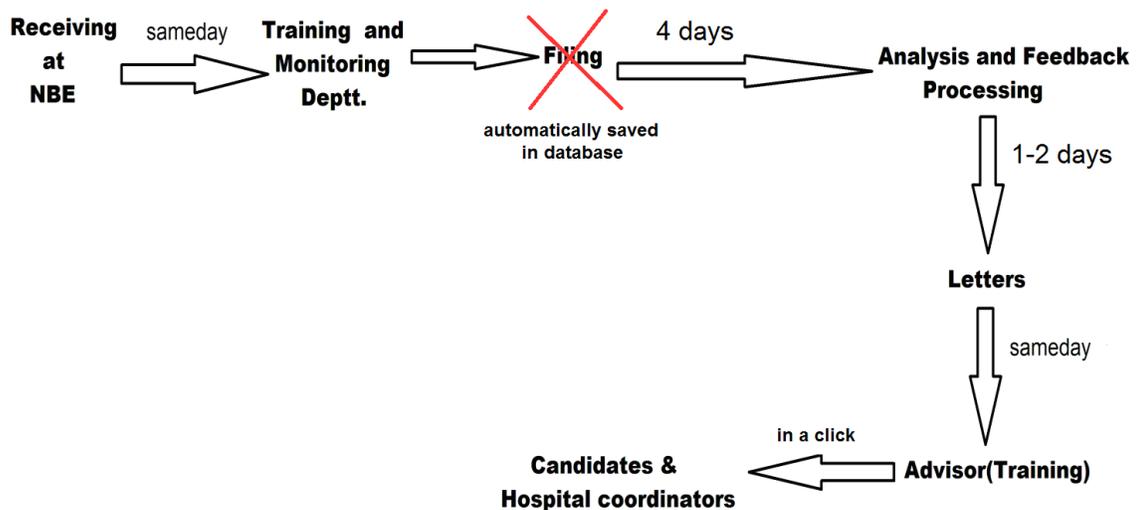
Some of the candidates (20%) feel that the mobile alert features can be introduced in the programme so that candidates get to know when they receive their feedback. Majority (60%) of the candidates feel that confirmation call should follow feedback reception.

## Chapter 8 - Discussion

The pilot study shows that the new system of online appraisal has many advantages over manual system of appraisal for NBE, Appraisers as well as candidates.



**Fig 8.1 - Process Flow**



The pilot study shows that the entire time taken by the Appraisers to send the report to the NBE is reduced by 92.5%. Time taken by NBE to prepare and send the feedback to the candidate is reduced by 97.7%.

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## **Benefits to NBE:**

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1. Reduced turn around time of the entire process
2. Elimination of paper/file
3. Easy storage of candidate as well as hospital data
4. Easy retrieval of data
5. Timely receipt of reports from appraisers
6. Timely dissemination of feedback
7. Reduced Errors
8. Reduced cost of stationary & postage

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## **Benefits to Appraiser**

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1. Less time consumption for preparation of reports
2. Easy to carry data
3. Electronic transmission of data
4. Reduced Errors
5. Reduced labor

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## **Benefits to Candidate**

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1. Timely receipt of feedback
2. Reduced time to provide feedback about hospital to NBE
3. Electronic transmission of data eliminate chances of loss of candidate feedback during postage

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## **Benefits to other NBE departments**

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1. Accreditation department can utilize the feedback on hospital received from appraiser to conduct inspections for deficiencies immediately.
2. Accreditation department could also utilize the feedback on hospitals obtained from candidates for ensuring continuous improvement of hospitals as well institution.

S.No.	Manual System (As is Process)	Electronic System (To be Process)
1	The appraisal letters as well as the feedback forms are sent manually using a courier service	The new streamlined process transfers and stores the information on database servers
2	It takes around 4-5 months for appraisal and feedback processing	Real time transfer of data takes place
	Number of resources required to carry out the appraisal system are 3-4	Number of resources required to carry out the appraisal system is only 1
4	Turnaround time for appraisal is more	Turnaround time for appraisal is less
5	Extracting the information from the file is little difficult	Extracting the information from the database server is easy
6	Space required for storing the paper work is a room and would increase day by day	Appraisal information stored in database server requires lesser space

**Table 8.1 Comparison b/w manual and online system**

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## **Chapter 9 - Limitations of the Study**

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Due to lack of time and unavailability of appraisers, the pilot test was conducted on only 3 hospitals comprising of 40 candidates by 6 appraisers. More hospitals, candidates and appraisers could have been included in the study.

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## **Chapter 10 - Conclusion**

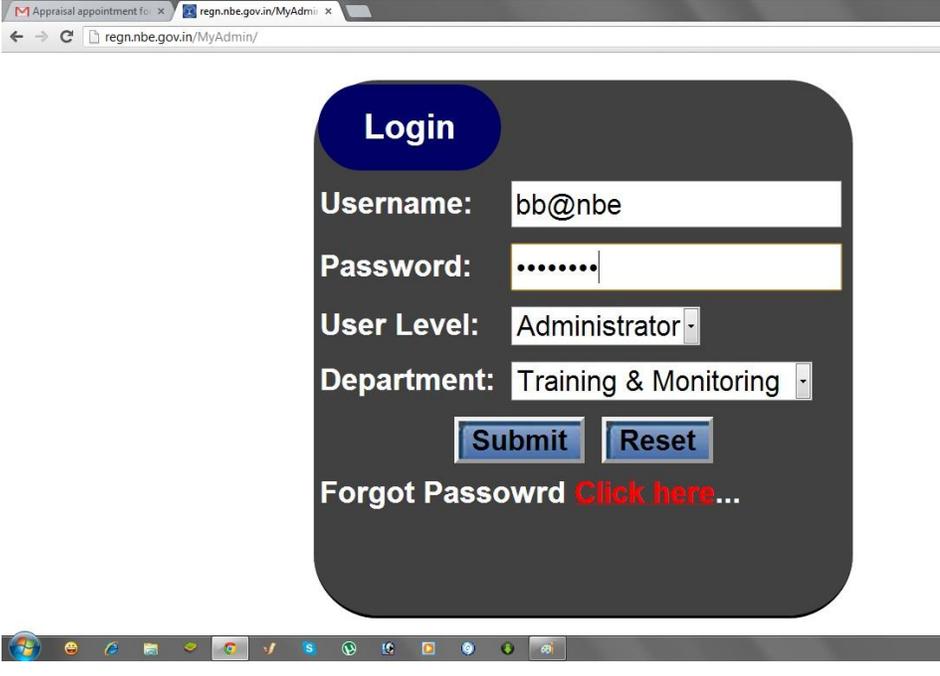
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Manual system of appraisal not only increases the total time taken in processing, preparation, analysis and submission of reports but also increases the labor required in performing all these activities. The chances of errors in manual system of appraisal are much higher than online system. With manual system the probability of loss of feedback and reports are always there despite best efforts. Also the physical transmission of data predisposes the process of appraisal to threats of loss of information.

The study shows that automation of the department ensures speedy recording, processing and analysis of information. Increased volume of work, scarcity of time and the slow manual process of appraisal necessitate the introduction of online appraisal system in the Training and Monitoring Department. The study also shows that through the strategic use of technology NBE can increase the productivity and efficiency of its processes. By using online system one can develop a paperless environment which ensures easy storage of documents, reports, letters, etc. in electronic forms on a centralized hard drive thus eliminating the need for cumbersome physical files.

Thus keeping in view the functions of the appraisal department of NBE it is highly recommended to use the online system of appraisal to improve the overall process and to make the system error free and more efficient.

## Annexure 1

<b>Automation Steps for Proposed System</b>	
Step 1 – Admin Login	
Step 2 – Appraisal Appointment	
Step 3 – Login Credentials via email	

Step 4 – Login  
Page via the link in  
email



**NBE**  
31 YEARS OF EXCELLENCE IN PG MEDICAL EDUCATION AND EXAMINATIONS

## Login for Appraiser

**Username:**

**Password:**

[Forgot Password](#) [Click here...](#)

[Click to see Appraiser Instructions](#)

Step 5 – Hospital  
Information Post  
Login

## Hospital Information

Name of Hospital	Fortis Hospital Sector-62 Phase-VIII Mohali-160062
Name of DNB Co-Ordinator	Basant Deep, DNB Coordinator
Contact Number	Ph: 0172-469222
E-mail ID	basantdeepchd@gmail.com
Name of Department offering DNB	
Total no. of beds in speciality	General beds for training DNB Candidates
Total indoor admissions in last 1 year	Total no. of IPD cases for training DNB Candidates
Total no. of OPDs in last 1 year	Total no. of OPD cases for training DNB Candidates

### Library Facilities

Budget spent in last 1 year	
Total no. of books with latest edition	
Library working hours and number of days it is open	
Number of Indian journals in the speciality	
Number of Foreign journals in the speciality	
Internet Facility	

### Consultants Information

Name of Senior Consultants	Details of PG Qualification	Total Experience after PG	No. of teaching session taken candidates
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Name of Junior Consultants	Details of PG Qualification	Total Experience after PG	No. of teaching session taken candidates
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Name of Senior Residents	Details of PG Qualification	Total Experience after PG	No. of teaching session taken candidates
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Overall Remarks & Deficiencies

Step 6 – Candidate Information page

Step 7

After the submission of the hospital and candidate information the appraisal of the registered candidate is processed

## **Annexure 2**

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### **Questionnaire for Candidates**

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1. Which mode of appraisal do you prefer?

- Manual
- Online

2. What problem did you face in manual mode?

- Never received
- Lost during postage
- Time delay
- Never faced any problem

3. What advantages do you find in this new online appraisal system over manual?

- Timely dissemination of feedback
- Easy retrieval of information
- No Additional advantage

4. How much are you satisfied with the online system of appraisal?

1. Highly Satisfied
2. Satisfied
3. Neutral
4. Dissatisfied
5. Highly dissatisfied

5. Difficulty faced on completing the online feedback form of hospital?

1. Complicated
2. Password failure
3. Computer system unavailability
4. Difficulty in Selecting the options
5. No such problem faced

6. Any additional resources are needed at their end for smooth functioning of the online system?

1. Yes
2. No

7. If any other features are needed to enhance the information flow?