

## SPECIAL ARTICLE

# 'Digital Bangladesh' and Dhaka Shishu (Children's) Hospital

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The vision set forth by the present Government creating a 'Digital Bangladesh' is surely a creditable aspiration. The goal is to develop a technically integrated knowledge-based society through digitalization and computerization. With technology excelling around the world, computers and the Internet have become essential in almost all sectors of society. It does not mean just the implementation of computers is enough; the use of Information and Communication Technology (ICT) as a tool to enhance public services is indispensable. With globalization gradually maneuvering the world towards a networking of socio-economical, cultural and political ideas, Bangladesh needs to be prepared to swiftly adapt to the use of emerging technologies in developing better infrastructure. Automation, computer-based communication and the use of new and less costly digital equipment to provide state-of-the-art comprehensive services is crucial.

I am delighted to inform you that Dhaka Shishu (Children's) Hospital (DSH), in its efforts of keeping up to this continuous process of development, has officially launched its institutional website – [www.dhakashishuhospital.org](http://www.dhakashishuhospital.org) on 31.12.2010. The website, I believe, is a great step to disseminate information about DSH's activities along with its academic wing Bangladesh Institute of Child Health among people in our country and overseas.

Dhaka Shishu Hospital has been the pioneer in providing child health care in Bangladesh. It is the largest children hospital in the country currently hosting 557 beds and providing a full range of clinical services. Supported by a team of highly qualified paediatric consultants and a skillful group of technical staff, the hospital always strives to provide comprehensive medical services for children nationwide.

The hospital also offers postgraduate training in Paediatrics and is affiliated with renowned institutions like Dhaka University, Bangabandhu Sheikh Mujib Medical University (BSMMU) and Bangladesh College of Physicians and Surgeons (BCPS). Its academic wing – Bangladesh Institute of Child Health (BICH) conducts courses on Paediatrics for postgraduate students. Dhaka Shishu Hospital is also proudly associated with ICDDR,B in Bangladesh; Institute of Child Health (ICH) in London; Royal Hospital for Sick Children, Edinburgh; and Johns Hopkins University in USA to provide collaborative child healthcare and has gained notable appreciation at national and international levels, living up to its excellent reputation in providing professional child healthcare services.

The hospital is primarily funded by its own revenue from services on payment and government grant-in-aid. The institution's financial reserves also consist of contributions from the Dhaka Shishu Hospital Trust fund, donations from different non-government organizations and gifts and endowments from other associations and individuals, as and when required.

Dhaka Shishu Hospital has always been driven with the motivation of providing complete and state-of-the-art clinical services for children; and it is my pleasure to inform you that the hospital is at the phase of expansion to other divisional cities nationwide along with two more branches in Dhaka as per encouragement by the honorable Prime Minister of Bangladesh, Sheikh Hasina. However, in order to successfully achieve such a huge venture of establishing improved child health care facilities throughout the country, the hospital requires supplementary financial support. The administration of Dhaka Shishu Hospital is humbly appealing for charitable assistance in the form of donations and/

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or grants to help us achieve our goal, which is also undoubtedly going to be a breakthrough in the service sector enabling the availability of professional medical services for children throughout Bangladesh.

I am also very glad to let you know that Dhaka Shishu Hospital has recently computerized its patient billing system along with patient admission / discharge. Work is also in progress to create a computerized patient records database to further improve its services. The institutional website has been complimented with the feature of online tender submissions. I sincerely hope that our website will be able to provide adequate information and updated news about the activities of Dhaka Shishu Hospital and its academic wing BICH appropriately. These are the first of many phases of digitization and development of computerized hospital management methods that DSH plans to attain in the near future.

With proper problem analysis and specification, the drawbacks of the current manual system of the hospital have been identified and it is quite evident that a completely computerized Hospital Information System will be incredibly beneficial in almost all aspects of providing better healthcare services to children nationwide. With the hospital's requirements drawn out, we intend on consulting professional software engineers or software development firms, to assist us in developing a tailor-made software which shall be implemented in phases.

Manual systems like the present one at Dhaka Shishu Hospital, involves a hand-written data entry method which makes data collection time-consuming and the multiple stages of data entry often make data collected illegible or easily misinterpreted. With increasing numbers of records in patient archives, maintaining an updated patient database gets disorganized easily. Having a backup copy of such huge volumes of data can also involve high clerical costs and storage space. Also, the total amount of data is higher than necessary since sometimes due to lack of organization same data have to be stored more than once causing data duplication resulting in data reference problems. Inability to produce outputs in a timely manner like generating income / expenditure reports or patient invoices is another common problem because it involves a lot of calculations, searching and writing of data from different files, manually. The lack of security with delicate hospital information and confidential

patients' details can cause unnecessary problems too.

A significant aspect of Hospital Information Systems (HIS) is having a computerized, secure and more organized patients and business database. A research report<sup>1</sup> on clinical benefits from HIS suggest quantifiable benefits in clinical decision-making. With the availability of the complete story of a patients' history, present condition and development, clinical decision making becomes simpler with faster diagnoses and less scope for errors in critical clinical decisions. A computerized patient database allows easy access to data stored; increased accuracy of data collected resulting in improved data reliability, and easier, faster and less error-prone updating of data. According to a medical journal article<sup>2</sup>, "Information systems can improve cost control, increase the timeliness and accuracy of patient care and administration information" indicating that computerized-aided management can be cost effective and improve quality of patient services and management decision making as faster data-processing enables more efficient invoice / report generation and systematic documentation and easier data backup facilities. DSH's evaluation and assessments on this matter further suggests that digital medical records will enable far larger quantities of data can be stored without wasting much real-estate space. Patient and business information will also be far more secure as a computerized system will have more reliable security with various levels of password protections limiting the availability of information as per designation and requirements.

With computerization, there are immense scopes of improving the quality of DSH's patient services providing more precise and comprehensive clinical services to patients. An Evidence Report<sup>3</sup> on HIS also suggests that computerization and the right strategies of implementation have the potential to "enable dramatic transformation in the delivery of health care, making it safer, more effective, and more efficient".

DSH can be further gain from a tailor-made computerized hospital management system. A well designed system will be user-friendly and can be operated by anyone with basic computer knowledge. Faster, systematic and more accurate patient invoice and doctors' prescription-slip generation can cut down waiting time for patients as well as doctors. With improved efficiency, duplications, confusions and

delays can be avoided. Maintaining confidentiality will become easier cutting down the risks of misuse of data and scope for employee dishonesty.

Patients' health is always the priority at Dhaka Shishu Hospital and computerization would create flawless integration of patient registration, scheduling, clinical documentation and billing. Instant patient history checks can be made upon admission or before change of medication, which might otherwise be dependent upon parents to share or delayed in paperwork processing. A computerized system would enable senior doctors to do less clerical work and make monitoring patient health simpler and update diagnosis and prescription changes faster and more efficiently. Different nurses attending to patients on various times during the day will also be benefited in providing better service as all patient records, with already validated and verified data would be available at their fingertips. With an integrated information system, DSH's patients will end up being healthier and happier.

Automation of clinical and clerical processes not only makes it less error-prone, but also legitimizes the hospital's methods of work. Little things like keeping track of Ambulance duties can be done easily and more efficiently with a computerized system. A more practical, purposeful and more adaptable management system will improve the way the hospital functions, which directly affects the quality of the service the patients get.

Working towards a 'Digital Bangladesh', DSH also plans to establish better connectivity with hospitals in rural areas where lack of qualified doctors and nurses lower the quality of child healthcare services available. Electronic connectivity will enable senior doctors to be able to receive data about patient

symptoms and be able to analyze and direct not-so-experienced doctors in rural areas and increase the quality of treatment for children all over the country. As more branches of DSH open up in other parts of the country, a commonly shared patient database can be developed to ensure patient records availability wherever an existing hospital patient might be in the country.

If video-conferencing can be set up between DSH and other children hospitals in the country, real-time treatment from specialized doctors can be made available to almost all children nationwide. Steps towards a 'Digital Bangladesh' beckon quality child healthcare services to all the children in Bangladesh and Dhaka Shishu Hospital is pledged to protect child health.

### References

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