

## Success Story from KODAK

## Kodak i1220 Plus scanner used to digitize paper-based medical records and significantly reduce burden on staff by allowing direct access from order system terminals.

### A general hospital contributing to the community with medical services offering peace of mind and reliability

The Federation of National Public Service Personnel Mutual Aid Associations' Yokohama Sakae Kyosai Hospital is the only "acute-phase general hospital" in Yokohama City's Sakae Ward and its catchment area includes the northern part of Kamakura City (the Ofuna area), Totsuka Ward, Konan Ward and part of Kanazawa Ward. It has been approved by the City of Yokohama as a "local medical services support hospital", aimed at expanding and improving local medical services through division of labor and coordination with neighboring hospitals and clinics. Yokohama Sakae Kyosai Hospital was founded in 1939. After the Second World War, its management was taken over by the Federation of National Public Service Personnel Mutual Aid Associations and for more than 70 years, it has continued to make a major contribution to improving health in the local community. Today, the hospital is actively introducing advanced diagnostic and treatment methods and its main mission is to provide emergency patients with the best and safest medical care available.

### The decision to explore digitization of paper-based medical records was prompted by the plan to construct a new wing

Yokohama Sakae Kyosai Hospital began to consider digitizing its paper-based medical records for inpatients in 2010. The move was prompted by plans to build a new wing, which is due to be completed in 5 years' time. Until then, when



The i1220 Plus scanner, core of the Web Summary View System

a patient was discharged from the hospital, their paper-based medical records were processed by the Medical Examination Department's Medical Examination Information Management Section and after being bound together with any other necessary documents, were stored in a dedicated repository. The section manages inpatient medical records for an average of 30-40 patients per day, or more than 8,000 patients per year, and at any one time this repository contains 15 years' worth of inpatient and outpatient medical records. That's a total of more than 100,000 records. When doctors needed to re-examine patients and wished to see their medical records, they would send retrieval requests to the Medical Examination Information Management Section, which would then retrieve the records from the repository and prepare them. However, because this repository occupied the site where the new wing was due to be built, the hospital decided to review its methods for storing and retrieving medical records.

Section Chief Tadashi Asami, explained the background:

"In five years' time, when the repository is demolished, we would have to ask an outside company to temporarily store 15 years worth of medical records. But if we started digitizing our paper-based medical records now by the time the repository is demolished in five years' time, we should have finished digitizing all our new and most frequently retrieved medical records. We realized that this would reduce the time and cost involved in retrieving records from an outside storage company. Moreover, if doctors were able to access medical records directly from the terminal used for the order

system, it would cut down the work involved in the process of retrieving, preparing and transporting records and thus reduce the burden on hospital staff. Because all the records stored in the repository have already been bound, digitizing them would be very time-consuming and costly. Hence we decided we would only make it in time if the digitization process started with newest medical records and looked into acquiring a scanner system."

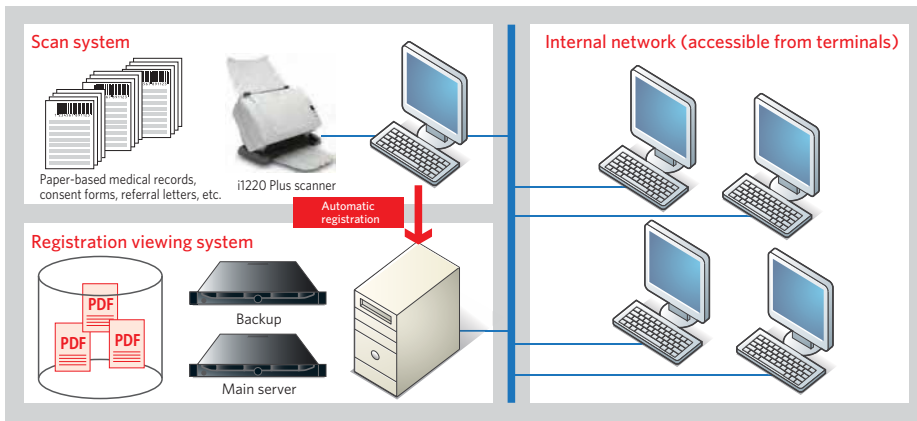
At Mr Asami's request, Kodak's distributor Holon Inc. (Head office: Kawasaki City, Kanagawa Prefecture; <http://www.hln.co.jp/>) set about developing a system. Holon has a strong track record in the development of medical and scientific databases, including the development and operation of the medical article and information database search service Ichushi Web (Japan Medical Abstracts Society), the online Japanese version of Steadman's Medical Dictionary (Medical View Co., Ltd.), Today's Diagnosis and Treatment (Igaku-Shoin Ltd.) and Japan's largest article search system, CiNii (National Institute of Informatics). For this reason, it was also seen as a reliable partner for the hospital.

### New system centers on Kodak i1220 Plus scanner

The hospital's new system combines document digitization functions and database search functions, and Kodak's i1220 Plus was chosen as the scanner around which it would be built. Holon's representative explained the reasons as follows: "Kodak's scanner offers all the functions and performance that a commercial system must have. Not only does it offer high quality, speed and reliability of scanning,



Mr Tadashi Asami, Section Chief, Medical Examination Department, Medical Examination Information Management Section



Conceptual diagram of the Web Summary View System

but the scanning software is really easy to use. It was also highly rated in the validation tests performed prior to its introduction."

The i1220 Plus is an ADF (automatic document feeder) -type duplex color scanner, capable of high-speed scanning of a wide variety of documents. It offers peace of mind even when "examined" slips are attached to medical records, as paper jams are rare. The fact that it incorporates Kodak's unique Perfect Page image processing technology and always gives a sharp image also attracted high praise. Another plus point is the fact that the Kodak A3 flat bed scanner acquired at the same time is able to scan not only A3-sized related documents but also booklets that are too thick to pass through the ADF.

The document separation functions of the Kodak Capture Pro Software scanning software also rated highly. This scans bar codes printed on forms and automatically separates and stores the text as individual files. The hospital prints a barcode recording the patient ID and date of admission on the cover of its medical records, allowing all the pages to be stored as a single file. This means that even if a number of records are placed in the ADF and scanned together, the records can be separated and stored individually, considerably increasing the efficiency of the process. The file name and the



The dedicated repository where the hospital stores 15 years' worth of paper-based medical records

barcode are reflected "as is", facilitating data retrieval. The system is also really easy to operate, from an order terminal. By simply clicking a startup button on the terminal screen, the can check a patient's admission history and call up the necessary medical records on the spot. If new notes are added, scanning the records once more will overwrite the data ensuring that the records are always up to date. The new system entered service in January 2011. Mr Asami summed up its benefits: "In the six months since we started using the system, we have digitized more than 4,000 inpatient records. The number of retrieval requests for original records has fallen by more than 10% since last year. Our younger doctors in particular are making active use of the system. It is also very highly rated for its convenience during case conferences, etc., where medical record data can be shared quickly and easily by projecting them onto a screen."

A case conference is a meeting at which doctors, nursing staff and other medical personnel discuss a patient's treatment, while referring to their medical records and other documentation. Digitizing medical records makes it possible to display their content in a larger format, using a projector, and so makes it easier to share the information they contain.

### Web Summary View System adopted with an eye to future issues

Mr Asami named the hospital's new system "Web Summary View System" (WSS). When the new wing is completed, in five years' time, all paper-based medical records will have been processed and the originals will no longer need to be retrieved. At the same time, the hospital has also begun exploring the possibility of introducing a full-scale electronic medical records system. It might be thought that the introduction of an electronic medical records system would eliminate paper-based medical records and that the WSS will no longer have any purpose, but according to Mr Asami this is by no means the case:



The Medical Examination Information Management Section's offices

"Even if paper-based medical records are eliminated, there will still be pathological examination reports, referral letters, patient consent forms and other important paper-based documents. We believe the WSS will really come into its own in the digitization of these documents, which the electronic medical records system will not be able to fully cover."

Yokohama Sakae Kyosai Hospital showed extraordinary foresight in anticipating future issues, such as coordination with the electronic medical record system. It may be this foresight which allowed it to gain the trust of local residents and become a core hospital in the area.



Federation of National Public Service Personnel Mutual Aid Associations

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