

## 治療実施入力

治療装置よりの  
実施情報取得  
照射録作成

## 照射録

## カンファレンス

- 照射撮影や治療計画などKEYになる実施入力で症例を自動抽出（任意選択可能）
- 計画情報より必要な画像を選択して検討
- カンファレンス結果をEMRへ送信&画像をHISの画像Serverへ送信

## EMR入力用テンプレート

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## EMR入力用テンプレート

- テンプレートにPCSやJNCDBの項目を搭載
- 必要に応じ編集可能
- 検索機能対応



## カルテと照射録の電子化

- Systemの構築
  - ▶ 運用フローは変更されるものとして構築
  - ▶ Venderおよびその体力が多種多様な放射線治療では病院側にも負担がかかる
  - ▶ System down時に治療ができる対策
- Paper lessとFilm lessと運用
  - ▶ Contentsの出力は必要に応じて対応可能としておく必要がある

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## Data Base構築

- Data Baseのコンセプトを使用者と作成者がどこまで共有できるか
- 異なるVenderにData Baseを移行可能にしておく
  - ▶ 使用者側の責任でData Baseのlogicなどを把握しておく
- 入力項目や内容の編集や移行ができる仕様の柔軟性は以前より高くなりつつある？

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日米 NCDB ワークショップ  
米国側資料



*A multidisciplinary program of the  
American College of Surgeons*

**Summary Report and Recommendations:  
Japan / USA NCDB Workshop**

Tokyo, February 27-28, 2007

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**INTRODUCTION**

The following report summarizes the findings and impressions of the delegation from the American College of Surgeons (ACoS), Commission on Cancer staff that attended the Japan/USA Workshop was held in Tokyo at the National Cancer Center, February 27-28, 2007. This delegation was lead by Dr. David P. Winchester, FACS, Medical Director of Cancer Programs of the American College of Surgeons, and included senior staff members of the National Cancer Data Base, Andrew K. Stewart, MA and E. Greer Gay, RN, PhD. The workshop was co-sponsored through funds available from a Japanese Health and Labor Sciences Research grant, and a Ministry of Health, Labor and Welfare cancer research grant.

**REPORTS AND PRESENTATIONS**

Members of the delegation from the American College of Surgeons and Japanese participants presented and discussed a broad range of experiences and findings regarding registry operations, data standards, clinical surveillance studies and quality of cancer care during the course of the two-day workshop.

The ACoS delegation reviewed the development and maturation of the National Cancer Data Base during its 15 years of operations. This was followed by specific discussions regarding data standardization efforts in the United States and how these impacted registry operations and data management. Comparisons between hospital based registry data and population-based data were provided to emphasize that collaboration and standardization can result in high levels of agreement across data sets. An outline of the history and events that have shaped American privacy laws was provided as a context for understanding the privacy regulations that are part of HIPAA, the regulatory framework guiding release and use of medical information in the United States. Clinical findings from studies of breast, colon, pancreas, and gastric cancers using data from the NCDB were presented. Finally, recently developed initiatives focusing on assessing quality of cancer care and audit/feed-back reports were presented.

Presentations from the Japanese participants closely mirrored those from the ACoS. Each of the Japanese registry systems (population, hospital, and JNCDB) presented descriptive outlines of their scope of operations and plans for the future. A representative from among the software vendors addressed issues and challenges of interoperability among medical information systems,

and how the cancer registration systems might interface with these efforts. Representatives from each of the participating medical specialty organizations presented a combination of operational descriptions of their proprietary clinical registry systems and descriptive clinical findings from the data collect through these registries. Finally, a review of the current interpretation of the Japanese patient privacy laws and how these were being considered within the medical and cancer surveillance community was provided.

## BACKGROUND

Cancer registration activities in Japan have their roots in public health surveillance activities stemming from concerns regarding long-term effects from radiation exposure following the close of Second World War, notably in Hiroshima and Nagasaki. Since their initial establishment in the late 1950's the breadth and scope of cancer surveillance and cancer registration have grown to include the establishment of a Japanese Association of Cancer Registrars, and most recently a legislative mandate in the form of the Cancer Control Act of 2006. Malignant neoplasms have been the leading cause of death in Japan since 1981, accounting for 241.7 deaths per population of 100,000, far more than the next two leading causes, heart disease (121.0/100,000) and cerebrovascular diseases (103.4/100,000).<sup>1,2</sup> Though cancer is a significant health concern in Japan, it is not a mandated as a reportable disease.<sup>3</sup>

Broad efforts to collect surveillance population-based and clinical cancer information exist in Japan. Among these are the epidemiological, population-based registry efforts that collect 25 items on diagnosis, initial treatment, and follow-up information, and is organized at the Prefecture level, and includes one metropolitan area. Individual academic medical societies also operate clinical registries that collect in-depth information, usually between 200-300 variables for site-specific cancers. Finally, hospital-based registries collect approximately 60 items on diagnosis, initial treatment, and follow-up with the intent to evaluate patterns and quality of care. Participation in the hospital-based registries has recently increased from 30 hospitals within the Japanese Association of Clinical Cancer Centers to include an additional 286 designated cancer care hospital.

Hospital-based cancer registration activities in Japan are increasingly linked to Ministry of Health, Labor and Welfare policy decisions as this ministry expands its recognition and expected functions/roles of Designated Cancer Care Hospitals. Established standardized data sets among hospital-based registries include patient demographic information, histo-pathology, initial treatment, and follow-up information are in place. Leaders of the population-based registry activities clearly understand the importance of further standardizing the cancer registration process and increasing the capacity of hospital-based cancer registration activities in support of the 2006 Cancer Control Act. At the forefront of the population-based registries interests rests the question of ascertaining incidence and survival statistics. Incidence rates are based on a limited sample (~25%) of the Japanese population and are believed to significantly under-represent the actual cancer burden in the country.

In contrast, the medical specialty societies have each established proprietary disease specific registry systems that are dependent upon voluntary participation by treatment facilities. The breast cancer registration system collects data from over 350 centers and the ObGyn registry from more than 250 programs. Coverage of reported cases is variable to, for example, 40% of expected prostate cancer cases thought to be reported to the Prostate Cancer Registry. Nonetheless, clinical surveillance of cancer presentation, treatment, and survival is well established in Japan and through the efforts of the individual specialty societies these registries yield an abundance of important and useful information.

The JNCDB project has adopted an integrative view, recognizing the strengths and shortcomings of the population, hospital and disease specific registry systems. The population-based registries lack treatment information that is carefully collected through the disease specific registries, which in turn do not have access to routine or accurate survival or vital statistics. In addition, the potential synergy resulting from the ability to exchange surgical and radiation oncology treatment data available in departmental and radiation oncology databases maintained within hospital settings is seen to be significant. The common thread is the hospital setting where diagnoses are made and treatment is provided, which places a substantial premium on the successful implementation and integration of IT infrastructure registry operations.

## CHALLENGES

Though exempt from the JPIPA (Articles 16, 23, and 50)<sup>4</sup>, the population-based cancer registries are not complete, standardization is lacking, and follow-up occurs in only a few of these registries. The disease specific registries have incomplete follow-up information, and since the passage of the JPIPA, these registries have been forced to regroup and consider alternative mechanisms by which to protect patient privacy. In some cases this has resulted in the suspension of data collection. The hospital-based cancer registries have other data collection problems. First data collection is performed separately by each discipline, and is frequently recorded by the physician, who has limited available time to dedicate to these data collection efforts.

Establishment of a Japanese cancer registry system has been hindered by the passage of the JPIPA - Law No. 57, 2003. This law protects the rights and interests of individuals by clarifying responsibilities of government and setting a high standard of care for handling personal information for companies in the *medical*, financial credit, and telecommunications industries.<sup>5</sup> Additionally, a 'privacy scare' in which concerns regarding loss of personal information resulting in cases of billing fraud, and other misuse of personal data are perceived to be widespread in Japan.<sup>6</sup> Finally, the social stigma attached to the diagnosis of cancer, and the potential impact the exposure of this information may have on personal or professional lives acts as a further deterrent to fostering public support for a cancer registries in Japan.<sup>7</sup>

Most of the registries in Japan have elected to use HASH functions common to many database software operating systems to circumvent the restrictions of JPIPA. This has provided a technical short-term solution and has allowed each registry system to continue operations as before.

Each registry – population, hospital, and disease specific - openly acknowledged these challenges and clearly recognized that the Japanese cancer registry systems:

- Lacked standardized data sets and operations;
- Limited integration of clinical data bases and wider hospital IT infrastructure;
- Viewed government mandates as sets of confounding directives.

## OPPORTUNITIES

The Cancer Control Act, approved in June 2006, to be implemented in April 2007, presents a critical opportunity for cancer registration in Japan. This Act calls for a cancer control implementation plan at the prefectural and national level, cancer prevention and early detection, equalizing cancer care quality, cancer research and the creation of an advisory board that includes representatives of cancer patients and their families.<sup>8</sup> This Act and other efforts ongoing since

April 2004 that began with the Third-Term Comprehensive 10 Year Strategy for Cancer Control have forged a way towards creating a means to implement a synchronized cancer registry system that has the potential to address the issues facing the current registries while at the same time accommodating the individual purposes of each registry.<sup>9</sup>

Specifically, this Act provides the basis for addressing both standards within and among the agencies engaged in cancer surveillance, and privacy concerns that are a current concern:

#### Standards

- The establishment of Japan's National Cancer Center provides a locus from which defining the need for, the purpose of, and the dissemination of value in cancer registry can be articulated. The advisory board is a means to involve:
  - Patients and family members;
  - The Quality of Life Policy Bureau, part of the Cabinet office of the Government Statistical Organization Chart<sup>10</sup>;
  - Representatives from the Japanese Ministry of Health, Labor, and Welfare;
  - Hospitals;
  - Medical societies.
- The National Cancer Control and Information System (NCC-CIS), established in October 2006, provides:
  - Training for tumor registrars, which should relieve some of the burden experienced by physicians responsible for data entry;
  - A forum through which the registries can meet on equal terms, define common standards for data collection, reporting and definitions – similar to role in the USA played by the North American Association of Central Cancer Registries;
  - Development of standards for computer software, and interoperability between medical IT systems;
  - Increasing the number of hospital-based cancer registries, at the very least in designated cancer care hospitals that will move efforts forward to provide a system through which quality of care can be evaluated and improved at the local level through feedback mechanisms on practice and outcomes.

The Cancer Control Act, if viewed broadly, contains all the necessary directives to enable the broad number of agencies interested in population and clinical surveillance of the cancer burden and its care in Japan to work together towards a common goal. This Act provides the legal framework for consensus building and standardization of registry education, operations, and education; data collection and transmission standards; and even interoperability with other medical information systems.

Similar efforts have been ongoing in the United States for almost two decades and were initiated among agencies as a means to improve cancer surveillance, but are not directly supported by legislative mandate. Much of the incentive toward adoption of standards has been driven by a combination of limited human resources and uncertain financial resources. To achieve the current level of harmonization within the registry community in the United States has required significant political will and intellectual infrastructure. The fact that Federal, State, and private agencies continue to work diligently and effectively together to maintain high levels of agreement regarding education, operations and data standards in the face of continuing budgetary pressures is a significant indication of the value of these consensus processes.

## Privacy

The government statistical system of Japan has two major official statistical laws; the Statistics Law and the Statistical Reports Coordination Law. Under these laws, three types of surveys are permitted: designated statistics, notified statistics, and approved statistics.<sup>11</sup> Cancer surveillance activities in Japan should be classified as designated statistics, which are those surveys necessary for the formulation of basic government policies. As such, it might be reasonable for a representative of the cancer surveillance community to press for an active liaison role with, or representation on, the Ministry of Public Management, Home Affairs, Posts and Telecommunications (MPHPT) statistics council, and thus elevate the visibility and recognition of the cancer registry system.

The Health Promotion Act of 2002 and the Basic Act for Anti-Cancer Measure (6/16/2006) affords the opportunity for surveillance of cancer in Japan while also providing an exemption from the JPIPA for the population-based cancer registry. This has not been the case for the hospital-based nor medical society-based registries.<sup>12</sup> However, a case could be made for collecting patient cancer data on practice and outcome through establishing a "Purpose for Use" that the requisite data would facilitate the mandates required under the Cancer Control Act of 2006; i.e., "equalizing cancer care quality" and "cancer research." This, of course, presumes that the data will be accurate, under security control, and appropriate and necessary supervision over the employees that handle the data occur (Articles 19, 20, and 21, JPIPA). Population-based registries should work with hospital and disease specific registries to explore the development of appropriate legal mechanism to facilitate access to and use of selected patient identifiers.

## **SUMMARY**

Much of what is needed for the further development and integration of cancer data bases in Japan are or can be in place. The three main types of registry systems can work together to accomplish that goal, success comes with a unified approach. A legal framework exists to support standardization of data items and definitions, software, development of a trained cohort of registry professionals and placing them in the hospitals. Public awareness of the value of cancer registration is greatly needed. Efforts to make cancer a reportable disease are paramount. Working within the framework of established laws is possible.

## **RESPECTFULLY SUBMITTED**

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Andrew K. Stewart, MA  
Senior Manager, National Cancer Data Base, American College of Surgeons

E. Greer Gay, RN, PhD  
Manager, Research Unit, National Cancer Data Base, American College of Surgeons



## References

- <sup>1</sup> Ministry of Health, Labour, and Welfare. Trends in leading cause of death. Statistics and Other Data. [http://www1.mhlw.go.jp/english/database/populate/pop1\\_t1.html](http://www1.mhlw.go.jp/english/database/populate/pop1_t1.html), pp. 1-3.
- <sup>2</sup> Statistics and Information Department, Minister's Secretariat, Ministry of Health, Labour and Welfare. 2.2 Vital Statistics (Designated Statistical Survey). <http://www.stat.go.jp/English/index/official/202.htm>, p. 5.
- <sup>3</sup> Matsuda, T. Patient Privacy Policy and Public Relation in Japan. Presentation, 2/28/2007 at the Japan/USA Workshop 2007, Tokyo, Japan.
- <sup>4</sup> Act on the Protection of Personal Information.
- <sup>5</sup> Act on the Protection of Personal Information, Law No.57, 2003 (tentative translation). <http://www5.cao.go.jp/seikatsu/kojin/foreign/act.pdf>.
- <sup>6</sup> Matsuda, T.
- <sup>7</sup> Verbal Communications. Expressed in Tokyo conference and Kyoto meeting.
- <sup>8</sup> Sobue, T. History and overview of cancer registration system in Japan. Presentation, 2/27/2007 at the Japan/USA Workshop 2007, Tokyo, Japan.
- <sup>9</sup> Sobue, T.
- <sup>10</sup> Director-General for Policy Planning, Statistical Standards. Population, Vital Statistics, Designated Statistical Survey. <http://www.stat.go.jp/English/index/official/202.htm>.
- <sup>11</sup> Director-General for Policy Planning, Statistical Standards. Official Statistical Laws. <http://www.stat.go.jp/English/index/official/101.htm>.
- <sup>12</sup> Matsuda.

# IHE-JRO 報告資料

IHE-J RO と米国 IHE-RO の動向  
(IHE の最近の動向含む)

厚生労働省科学研究費補助金第3次対がん10力年  
総合戦略研究事業手島班々会議

## IHE-JROと米国IHE-ROの動向 とASTRO報告

塚本信宏、川口修、安藤裕

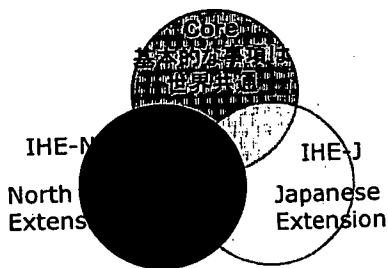
## IHEとは

- ・ Integrating the Healthcare Enterprise
- ・ 医療連携のための情報統合化プロジェクト

- ・ 北米放射線学会 (RSNA)
- ・ 医療情報管理システム学会 (HIMSS)

・ <http://www.ihe.net/> <http://wiki.ihe.net/>

## IHEとIHE-Jの関係



## IHE-ROの必要性

- ・ システム化(IT化)が不十分、手書きも多い。同じ情報を何度も入力している
- ・ RISで、まともにサポートされていない  
撮影と同じ画面に無理やり押し込められ、放射線治療固有の事情が反映されていない
- ・ 記録や検証などもシステム化したい
- ・ 放射線治療データを長期間利用可能にしたい

## 放射線治療 IHE-RO

ASTRO  
AMERICAN SOCIETY FOR INTERNATIONAL RADIATION ONCOLOGY

aapm  
AMERICAN ASSOCIATION OF PHYSICISTS IN MEDICAL PHYSICS

ACR  
AMERICAN COLLEGE OF RADIOLOGISTS

CARO  
EUROPEAN SOCIETY OF RADIOLOGICAL ONCOLOGY

RSNA  
RADIATION THERAPY SOCIETY OF NORTH AMERICA

ESTRO  
EUROPEAN SOCIETY FOR RADIATION THERAPY

ATC  
ADVANCED TECHNOLOGY CENTER

National Cancer Institute

## 放射線治療 IHE-RO

PHILIPS

Nucletron

IMPAC

GMS  
Plan for More

VARIAN  
medical systems

Siemens Medical Solutions

## IHE-RO Organization

Co-chairs  
Prabhakar Tripuraneni MD  
Jatinder Palta PhD

Planning Co-chairs  
Phillip Devlin MD  
Colin Field MS  
Mika Miettinen, Varian.

Technical Co-chairs  
Bruce Curran PhD  
Stuart Swerdloff, Impac

## IHE-RO 関連 documents

- IHE-Radiation Oncology Technical Framework Volume 1-2 Draft for Public Comment (IHE-RO)
- Supplement 74: Utilization of Worklist in Radiotherapy Treatment Delivery Draft (DICOM Standards Committee, Working Group 7 Radiation Therapy)

## IHE-RO 関連 documents

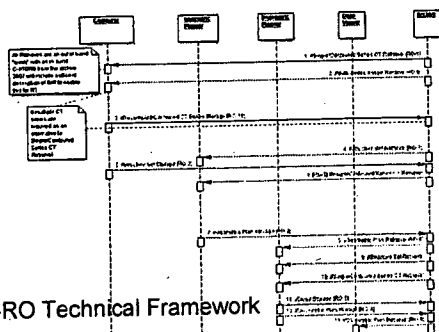
治療に関しては、IHEとDICOMが同時並行で決定されている

- IHE-Radiation Oncology Technical Framework Volume 1-2 Draft for Public Comment (IHE-RO)
- Supplement 74: Utilization of Worklist in Radiotherapy Treatment Delivery Draft (DICOM Standards Committee, Working Group 7 Radiation Therapy)

## IHE-RO Technical Framework

- Volume 1  
Integration Profiles  
RT Object Process Flow
- Volume 2  
Transactions in detail  
治療計画関係しか述べられていない

## RT Object Process Flow



## IHE-RO TF 1,2のアクタ

- **Contour** CT画像を受けとって、RT Structure Setを作る。
- **Geometric Planner** CT画像とRT Structure Setを受けとって Geometric Planを作る。
- **Dosimetric Planner** CT画像と RT Structure Setと Geometric Planを受け取って Dosimetric Planと RT Doseを作る
- **Archive (including RT)** CT画像に加え、RT SOP Classes を収納し、それらを授受できる
- **Dose Display** Dosimetric Plan, CT, Structure Set や RT Doseを受けとって、線量を表示できる

## 治療計画に想定されるユースケース

- 治療計画CT撮影
- 臨床医がスケジューリングシステムからVirtual Simulationのリクエストを受け取る
- 臨床医がターゲットやVOIを囲み、アイソセンターを決める
- スケジューラーは適切なドジメトリストにPlanning Systemにて、治療計画を立てるリクエストを作る
- ドジメトリストがPlanning Systemにてリクエストを受け取る
- スケジューラーは臨床医のためにPlan Reviewリクエストを置く
- 臨床医がReviewを行い、PlanをApproveする
- スケジューラーは、Delivery Machineにて治療が行なわれるフラクションをスケジュールする。

## 放射線治療 日米の違い

- 日米で、同じ機械を使っているのであまり違わないかという、結構違う。
- アメリカでは1ステップごとに責任の所在がはっきりしている。
- 日本は運用があいまいでシステム化していない。誰の仕事か、誰の責任かはっきりしない。

## Supplement 74: Utilization of Worklist in Radiotherapy Treatment Delivery

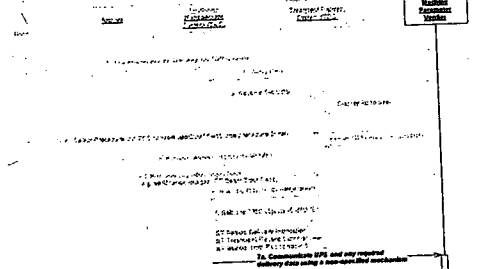
放射線治療に使われる情報オブジェクト定義 (IOD)とその使い方

Unified Worklist and Procedure Step (Supplement 96)を用いる

Unified Worklist, Unified Procedure Step : 放射線検査におけるmodality Worklist, modalityの拡張

## Supplement 74: Utilization of Worklist in Radiotherapy Treatment Delivery

Treatment Delivery Normal Flow



## Participants in IHE-Japan RO

- Academic societies and Institutions
  - 日本放射線腫瘍学会 (JASTRO)
  - 日本医学放射線学会 (JRS)
  - 日本放射線技術学会 (JSRT)
  - 放射線医学総合研究所
  - 埼玉医科大学
  - 大阪大学
  - 慶応義塾大学
  - 独協医科大学 (順不同)

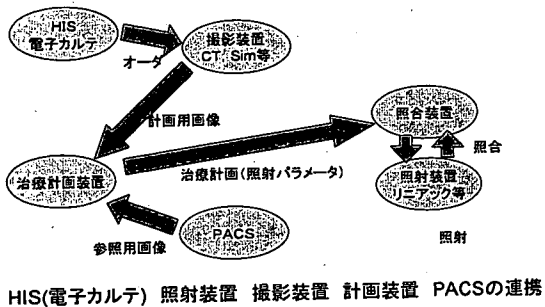
## Participants in IHE-Japan RO

- Cooperating organization
  - 日本画像医療システム工業会 (JIRA)
- Vendors
  - 東芝メディカル
  - 横河電機
  - CMS Japan
  - 千代田テクノ
  - 日立メディコ
  - エレクタ
  - バリアン ME
  - シーメンス
  - コニカミノルタ MG
  - グローバルフォー
  - 三菱重工 (順不同)

## 活動内容

- 2006 2-6 目的、意識合せ、現状報告  
ワークフローの分析
- 2006 7- IHE-RO(NA) DICOM WG7の現状
- 2006 9-11 日本の現状とユースケース抽出
- 2006 12 治療後経過観察、承認の問題
- 2007 1-11 治療経過全体の進捗管理、サマリ  
RIS-HIS連携、オーダ発行

## 放射線治療情報システム連携



## ユースケース(IHE-J RO)

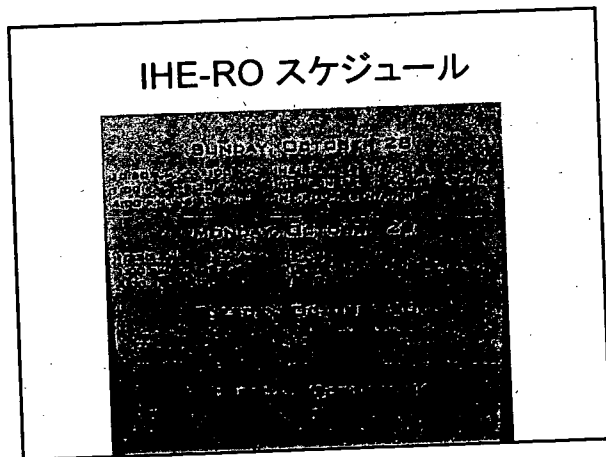
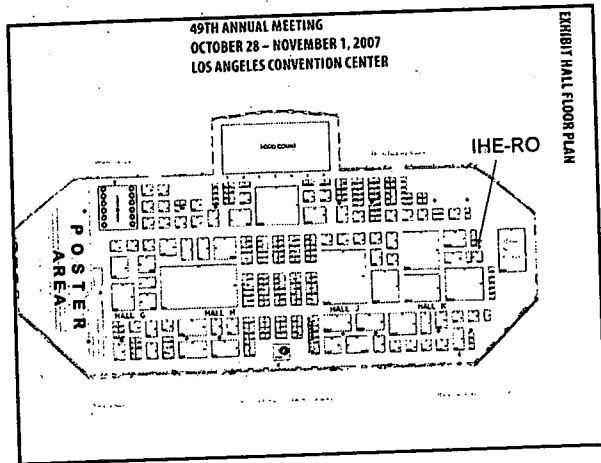
- 患者診察(初診、治療中、終了時、終了後)
- 日々の照射
- 照射スケジュール生成、変更
- 治療計画シミュレータ・CT撮影
- 治療計画(いろいろ)
- 照射野変更(照射法変更も含む)
- 位置照合 (EPID) (LG)
- 患者基本情報変更

## 49th ASTRO's Annual Meeting

ASTRO's 49th Annual Meeting  
October 22 - November 1, 2007  
Los Angeles Convention Center  
Los Angeles

## Los Angeles Convention Center





### PRESENTATION

presentation slidesをご覧ください

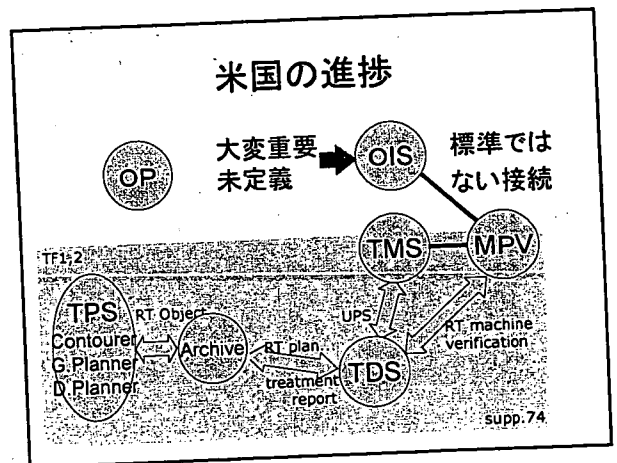
### IHE-RO (IHE-Radiation Oncology)

IHE-RO is an effort led by ASTRO (with assistance from many related societies) to improve the connectivity of computer systems and applications in the radiation oncology domain. Since its inception in late 2004, a group of radiation oncology and industry professionals have been working to identify key information incompatibilities and develop solutions.

IHE-RO's initial Integration Profile addresses the issues involved in the exchange of contours, regions of interest, and dose information across CT-simulation and treatment planning systems. This profile is in the final stages of testing and should be demonstrated at the ASTRO 2007 Annual Meeting.

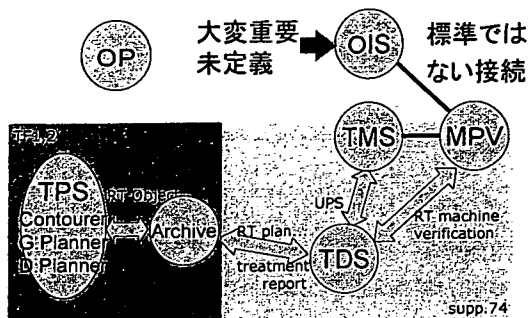
New profiles, addressing areas such as multi-modality image registration and treatment delivery planning are in development for 2008. Additional profiles have already been suggested for 2009 and beyond.

2048 Integrating the Healthcare Environment for Radiation Oncology (IHE-RO): Improving the Practice of Radiation Oncology Through better Information Exchange © H. Curtis, University of Michigan Medical Center, Ann Arbor, MI





## 今回のデモの範囲

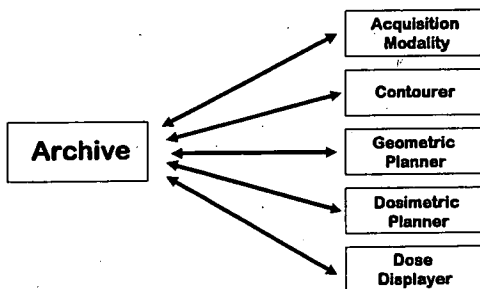


## IHERO Technical Framework

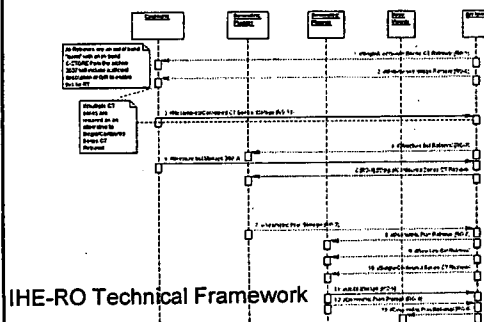
- Volume 1  
Integration Profiles  
RT Object Process Flow
- Volume 2  
Transactions in detail

治療計画関係について

## 治療計画関連(今回のデモ範囲)



## RT Object Process Flow



## IHERO 2007 connectathon

IHERO Radiation Oncology  
2007 Connectathon

Participant	Profile	Profile	Profile	Profile	Profile	Profile	Profile	Profile	Profile	Profile	Profile
1. Participating Vendors	1. Archive	1. Dose Calculation	1. Geometric Planner	1. Dosimetric Planner	1. Dose Viewer	1. Acquisition Modality	1. Contourer	1. Geometric Planner	1. Dosimetric Planner	1. Dose Displayer	1. RT Machine Verification
2. Elekta / IMPAC	2. Archive	2. Dose Calculation	2. Geometric Planner	2. Dosimetric Planner	2. Dose Viewer	2. Acquisition Modality	2. Contourer	2. Geometric Planner	2. Dosimetric Planner	2. Dose Displayer	2. RT Machine Verification
3. Elekta / IMPAC	3. Archive	3. Dose Calculation	3. Geometric Planner	3. Dosimetric Planner	3. Dose Viewer	3. Acquisition Modality	3. Contourer	3. Geometric Planner	3. Dosimetric Planner	3. Dose Displayer	3. RT Machine Verification
4. Elekta / IMPAC	4. Archive	4. Dose Calculation	4. Geometric Planner	4. Dosimetric Planner	4. Dose Viewer	4. Acquisition Modality	4. Contourer	4. Geometric Planner	4. Dosimetric Planner	4. Dose Displayer	4. RT Machine Verification
5. Elekta / IMPAC	5. Archive	5. Dose Calculation	5. Geometric Planner	5. Dosimetric Planner	5. Dose Viewer	5. Acquisition Modality	5. Contourer	5. Geometric Planner	5. Dosimetric Planner	5. Dose Displayer	5. RT Machine Verification
6. Elekta / IMPAC	6. Archive	6. Dose Calculation	6. Geometric Planner	6. Dosimetric Planner	6. Dose Viewer	6. Acquisition Modality	6. Contourer	6. Geometric Planner	6. Dosimetric Planner	6. Dose Displayer	6. RT Machine Verification
7. Elekta / IMPAC	7. Archive	7. Dose Calculation	7. Geometric Planner	7. Dosimetric Planner	7. Dose Viewer	7. Acquisition Modality	7. Contourer	7. Geometric Planner	7. Dosimetric Planner	7. Dose Displayer	7. RT Machine Verification
8. Elekta / IMPAC	8. Archive	8. Dose Calculation	8. Geometric Planner	8. Dosimetric Planner	8. Dose Viewer	8. Acquisition Modality	8. Contourer	8. Geometric Planner	8. Dosimetric Planner	8. Dose Displayer	8. RT Machine Verification
9. Elekta / IMPAC	9. Archive	9. Dose Calculation	9. Geometric Planner	9. Dosimetric Planner	9. Dose Viewer	9. Acquisition Modality	9. Contourer	9. Geometric Planner	9. Dosimetric Planner	9. Dose Displayer	9. RT Machine Verification
10. Elekta / IMPAC	10. Archive	10. Dose Calculation	10. Geometric Planner	10. Dosimetric Planner	10. Dose Viewer	10. Acquisition Modality	10. Contourer	10. Geometric Planner	10. Dosimetric Planner	10. Dose Displayer	10. RT Machine Verification

まだ、検討中

## Technical Committeeの議題

- Data Composing
- Check of Input Submission
- Treatment Delivery Workflow
- Advanced Integration Objects

The workshops selected by the Technical Committee for the 2007-8 Cycle

- Mutability Registration
- Treatment Delivery Workflow

### 2008-9 Development Cycle

During the PC meetings of August 28 and October 29, 2007, the following Brief Profile Proposals were identified and submitted for consideration in the 2008-9 Development Cycle. At the PC meeting of October 29, 2007 the profiles were discussed and placed in the following rank of importance for discussion with the TC meeting of October 31, 2007.

1. Prescription Authorization
2. Integrate Workflow D
3. User Authentication and Authorization
4. Improved Workflow A - may already be covered in a current profile
5. Radiotherapy Planning and Treatment Record

- This Use Case is the IHERO 'Moby Graff'
- Break into smaller pieces, such as an Anonymization Use Case for Cancer Trials
- This Use Case sponsored the creation of a Planning Committee focus group on the data requirements of a Radiotherapy Clinician. Planned Record

After the TC meeting of October 31, 2007 the following Detailed Profiles were prepared

- Detailed Profile 1
- ...

[http://wiki.ihe.net/index.php?title=Radiation\\_Oncology](http://wiki.ihe.net/index.php?title=Radiation_Oncology)

## TCと日本のIHERO meeting

### 出席者

- Technical Committee co-chair  
Bruce Curran  
Stuart Swerdloff
- DICOM Working Group 7 co-chair  
David Murray
- 日本企画委員会 安藤、川口、塚本
- 日本技術委員会 関

## TCと日本のIHERO meeting

### 議題

- 日本の現状紹介
- 日本のconnectathon, demonstrationの予定
- 米国の企画委員会、技術委員会との協力

## Summary of Japanese Activity

Planning committee proposes these use cases to be Integration Profiles:

- First Visiting
- Treatment Strategy (including CT simulation, treatment planning and scheduling)
- Daily Treatment
- Finish of Treatment
- Patient Follow up

## Further Issues (Japan)

- We are discussing about the role of Oncology Information System and Treatment Management System in Japanese workflow.
- How should we migrate to IHE system from existing system.
- We will also discuss how to follow up patients after treatment using Electronic Medical Record.
- We plan to perform Japanese connectathon and demonstration in JASTRO 2009.

## 米国委員会との協力

日本の統合プロフィール、ユースケースの提案は企画委員長のColinさんに提出する

日本のコネクタソン、デモに米国の技術委員会が直接手伝ったり、機材を提供するのは、JASTROとASTROに日程が近く、難しい  
デモの少なくとも3ヶ月前にコネクタソンが必要  
WG7、米国企画・技術委員会のメーリングリストに登録するので、参加してほしい

これからもよろしくお願いいたします。

# IHE-RO

**IHE** Changing the Way Healthcare CONNECTS

Working together for  
Healthcare Interoperability

WIKI.IHE.NET      WWW.IHE.NET

## Has This Happened To You?

Changing the Way Healthcare CONNECTS

## What Exactly Is IHE-RO?

**IHE-RO = Integrating the Healthcare Enterprise in Radiation Oncology**

Is one of the domains in multi-national, multi-domain IHE = Integrating Healthcare Enterprise

A multi-specialty, -society, -national initiative to integrate radiotherapy equipment and patient health information systems

Joint effort of radiotherapy healthcare professionals and vendors to improve interoperability in radiation oncology domain

Changing the Way Healthcare CONNECTS

## IHE-RO

### What does it do for you?

- Improves the connectivity of various radiation oncology hardware and software products
- Improves radiation oncology work flow
- Helps to select products based on features, productivity and cost efficiency
- Improves patient care
- Eventually helps vendors to focus to technology improving patient care instead of interface and connectivity problems

Changing the Way Healthcare CONNECTS

## IHE-RO

### What can you do for IHE-RO?

**Healthcare professionals**

- Encourage your vendors to participate in IHE-RO
- Be an evangelist for IHE-RO in the community
- Use IHE-RO integration profiles in your RFP (Request for Proposals) for all your new products

**Vendor employees**

- Encourage your customers to participate in IHE-RO
- Participate to planning and technical committee
- Increase the awareness of IHE-RO in your company
- Participate in the process of IHE-RO in identifying the interconnectivity problems and defining standards

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## IHE Organizational Structure

### Multi-Domain & Multi-National

**IHE (International) Strategic Development Committee**

- Sponsor Co-Chairs
- supervises
- reports
- Global
- IHE North America
- IHE Europe
- IHE Asia/Pacific
- Regional & National Deployment
- Delegates
- Global Development: Radiology, IT Infrastructure, Cardiology, Radiation Oncology = IHE-RO Lab, etc.
- Interoperability
- contribute Participants

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# IHE 2006 – Nine Active Domains

Over 100 vendors involved worldwide, 5 Technical Frameworks  
374 Integration Profiles, Testing at Connectathons  
Demonstrations at major conferences world-wide  
15 Active national chapters on 4 continents

**Changing the Way Healthcare CONNECTS**

# IHE Standards-Based Integration Solutions

Professional Societies Sponsorship  
Healthcare Providers & Software Developers

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## 4 Steps of IHE Process

1. Identify Interoperability problems
2. Specify Integration Profiles
3. Test Integration Profiles at Connectathon
4. Publish Integration Profiles for use in RFPs

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## Request for Proposals (RFP)

Much easier to specify and agree to an IHE Integration Profile than detailed technical specs:

"Device must support IHE Scheduled Workflow Integration Profile, and vendor must supply an IHE Integration Statement."

Software Developer response:

Vendor Information		Integration Profile	
Company Name	Product Name	Integration Profile	Version
Address	Phone	HL7 Profile	HL7 Profile
City	Fax	HL7 Profile	HL7 Profile
State	E-mail	HL7 Profile	HL7 Profile
Zip	URL	HL7 Profile	HL7 Profile
		HL7 Profile	HL7 Profile
		HL7 Profile	HL7 Profile
		HL7 Profile	HL7 Profile
		HL7 Profile	HL7 Profile
		HL7 Profile	HL7 Profile
		HL7 Profile	HL7 Profile
		HL7 Profile	HL7 Profile

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## IHE-RO: The Concept

Hell is a place where nothing connects.  
- T S Eliot

**Changing the Way Healthcare CONNECTS**

## Radiation Therapy Can Be a Complex Process

With Many Parts ... And We All Want The Best

**Changing the Way Healthcare CONNECTS**