Facilitating Communication within the Personalized NSAID Therapeutics Consortium

A Partnership between the Mid-Atlantic Gigapop in Philadelphia for Internet2 (MAGPI) and Penn’s Institute for Translational Medicine and Therapeutics (ITMAT)

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NSAIDs: Non-Steroidal Antiinflammatory Drugs

- Non-steroidal antiinflammatory drugs (NSAIDs) are the most commonly used pain killers in the world. Approximately 1000 NSAID containing drugs exist.

- 46 million U.S. adults with arthritis use an NSAID regularly or intermittently for pain control

- Some patients will have severe complications on NSAIDs:
  all NSAIDs can cause: stomach ulcers, gastrointestinal bleeds, hypertension
  some NSAIDs can cause: heart attack and stroke
Personalization of NSAID Therapy

Can we identify those patients within the population who are likely to experience complications on NSAIDs and those who may benefit from a particular compound?
The Personalized NSAID Therapeutics Consortium

A collaborative effort of 40 investigators at 20 universities - lead out of Penn’s Institute for Translational Medicine and Therapeutics by Garret FitzGerald.
Aims

- To enhance the likelihood of communication events between individuals and to enable communication experiences across distance that are similar to those occurring within a single laboratory setting.

- To provide communication technology centrally to all PENTACON members and their laboratory members.

  non-real time communication services:
  
  Electronic message board

real time communication services:

  Instant messaging
  Video telephony
  Video conferencing
To facilitate communication

(i) between individuals within laboratories
   Point-to-Point Video Telephony + Data Sharing

(ii) between individuals within cores that consist of multiple laboratories dispersed within or across institutions
   Point-to-Point Video Telephony + Data Sharing
   Conference Video Telephony + Data Sharing

(iii) between individuals within “virtual” work groups such as the Integrated Data Management Group
   Point-to-Point Video Telephony + Data Sharing
   Conference Video Telephony + Data Sharing
   Video Seminars / Conferencing

(iv) between individuals who are not directly collaborating on specific projects, but are likely to benefit from cross fertilization.
    Video Seminars / Conferencing
Challenges

Integration of technologies in a heterogeneous organization whose members have diverse communication preferences, and are using various computer platforms (Mac and PC) and communication software (e.g. Skype and Google IM).

Any additional communications infrastructure deployed must take into account variations in individual computer skill sets, time zones, system flexibility, and the ability of the network to accommodate large data transfers.

Data transfer / storage has to be safe and compliant.
Approach

Personal computer video clients (the Skype principle)
  PC and Mac compatible
  data sharing (e.g. power point presentation)
  standards based, encrypted
  traverse firewalls (e.g. hospitals)
  run on a private network (Internet 2)
  high definition

Integration of existing room video systems
  data sharing (e.g. power point presentation)
  standards based, encrypted
  run on a private network (Internet 2)
  high definition

Infrastructure
  Video Server to operate desktop clients
  Video Server(s) to enable firewall traversal
  Video conference bridge for 40 endpoints (40 investigators)
Pilot Phase – PENTACON meetings

Video Clients: Tandberg Conference me, Tandberg Movi, Polycom CMA, Xmeeting
Room Systems: Tandberg MXP series Codec (mobile), Tandberg Codec C60 Room system
Video Bridge: MAGPI’s Tandberg MCU
Experience during Pilot Phase

Personal computer video clients
- Tandberg ConferenceMe not available for Mac
- Tandberg Movi was not available for Mac (now it is)
- Polycom CMA MAC version was different from PC version
- Mac OsX Xmeeting did not run reliably and required the latest OS version, which was not installed on all participants machines)
- Sound quality often poor due to lack of echo cancellation
- Image quality often poor due to insufficient lighting at computer or wrong camera position

Integration of existing room video systems
- worked well
- Sound quality was sometimes less than optimal (static noise from wireless microphones)

Infrastructure
- Video bridge worked well
- A technician needs to be present in the conference room to monitor sound and image quality and to adjust the presentation screen settings (turn on/off transmission of Powerpoint slides, change camera position/focus)

People
- needed to learn video conferencing etiquette. Who speaks when. Silence microphone when not speaking.
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