

February 26, 1996

Jack Higgins, M.D.
Family Practice Associates of Chico
Suite One
1560 Humboldt Road
Chico, California 95928

Dear Jack:

Thank you for writing and for sending the materials regarding the Video HouseCall Network. I enjoyed speaking with Steven Davis, and I'm glad you took the time to follow up. I have shared your information with my Domestic Policy Council, and I know they will give it a thorough review.

Again, thank you for your involvement. You have my best wishes.

Sincerely,

BILL CLINTON

BC/SEM/JFB/bws (Corres. #2708077)
(2.higgins.j)

cc: w/inc Jen Klein, WW



JOHN M. HIGGINS, M.D., F.A.A.F.P.

February 7, 1996

President Bill Clinton
The White House
1600 Pennsylvania Avenue, NW
Washington, DC 20500

Dear Mr. Clinton:

Thank you for taking the time yesterday to speak with my associate, Steven Davis, about the Video HouseCall Network, which provides primary care health services through telemedicine.

I'm enclosing originals of the material that we faxed to you yesterday, and will be happy to provide more copies or additional information on request.

We have launched two small demonstration projects, one to a rural clinic in the mountains of northern California (Mad River Clinic), and one at a local elementary school.

Within six months we plan to extend services to a nursing home, a retirement community, city and county offices, a college campus, a day care center, an airport, and a number of other worksites.

We will also begin testing a self-contained portable system utilizing satellite cellular technology for use by home nursing services, travelers, ambulance services and the military.

As you are probably aware, most existing telemedicine systems cost around \$50,000 to \$100,000 per site and require expensive (and often unavailable) ISDN or fiber optic lines. Our Video HouseCall Network operates over "POTS" (Plain Old Telephone System) lines and costs about \$4,000, including a Pentium 75 PC that can be used for other purposes.

Thank you for your interest. I look forward to speaking with you soon, and will be happy to arrange a demonstration at your convenience.

Sincerely,

Jack Higgins, MD
President and Medical Director
Video HouseCall Network



Photo by Fred Ait

A patient's eye appears on the screen as Chico physician Jack Higgins tele-links with a clinic near the coast. The small box above the screen is the camera that relays Higgins' image to the clinic.

Physician sets up telemedicine link with clinic, Chico school

By Laura Urseny
Business Editor

Being face-to-face with a family doctor has been an important element of health care, but a Chico physician is betting technology, convenience and cost savings might put a different complexion on health care in the future.

Chico physician Jack Higgins has embraced what's called "telemedicine" — health care via computer.

It's a twist of technology well suited to health care in Northern California's rural corners or anywhere medical needs occur and physicians aren't readily available.

Ideally, the telemedicine link can help determine when an emergency room visit isn't necessary, keeping down costs, and saving the patient's time. The system works toward relieving overcrowded emergency rooms by stemming unnecessary visits. It also prevents the unnecessary loss of work at a time when paychecks are critical.

Telemedicine, Higgins says, improves access to health care, while saving money.

For about \$3,000, Higgins purchased a video screen, small video

camera, special software, a keyboard, and a modem. That arrangement can connect him with patients in their home, office or another clinic, with the right equipment.

Higgins is working on two telemedicine links now. One is with Southern Trinity Health Services, a clinic operated in the small mountain community of Mad River, about two hours southeast of Eureka. The other is Chapman Elementary School in Chico.

In both, Higgins is a back up when prime health care personnel aren't available, or want a second opinion.

Higgins goes on line when the Mad River clinic's physician's assistant isn't available — his days off, nights and weekends.

The service worked for about a month, but was suspended a few weeks ago when the borrowed computer had to be returned. Mad River emergency medical services coordinator Jim Tinkelenberg said the system worked so well that a new computer was purchased and was to be delivered this week.

"We're really excited about this," said Tinkelenberg, who brought the idea to Mad River after hearing Higgins talk about telemedicine at a north state

medical conference.

Tinkelenberg said the clinic was able to start the link with help from a federal grant intended to investigate telemedicine in rural areas.

"It's a no-brainer to see that it can help people in an area like this," Tinkelenberg said.

Major emergencies go directly to the hospital, but Tinkelenberg connects with Higgins for "minor emergencies" such as earaches, minor cuts and others.

For Mad River residents, getting to the hospital is a very long, windy drive to Fortuna or Weaver-

See TELEMEDICINE/7A

Chico Enterprise-Record
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ville.

"We think people would rather do this (in the clinic) than spend a half a day driving and the other half in a physician's office," said Higgins, especially if it's not absolutely necessary.

After an initial exam, Tinkelenberg makes the call to Higgins, who takes a look himself.

By pointing a hand-size video camera, Tinkelenberg can relay a video picture of the patient to Higgins, whose practice is part of a small physicians office, Family Practice Associates of Chico.

Zoom, color and enhancement features can clarify the picture, and one click turns out a single-frame picture in Higgins' office. An earphone and microphone make two-way discussion possible. A word processing function allows the examining professional to type in a description.

It also has a photo-saving capability, so that a hard-print image can be taken from an examination. Additionally, the relays can be taped and saved to provide a history.

On the Mad River wish list are an electronic stethoscope and otoscope, so that Higgins can hear heartbeats with the former and check out ears with the latter.

Tinkelenberg says so far patients in his area have responded well to telemedicine. They like being part of cutting-edge technology, and appreciate the money-saving aspect.

One graphic demonstration of how well the process works occurred when a short but jagged piece of wood lodged into a timber worker's forearm. The Mad River clinic linked with Higgins, who took a close look at the projection to estimate how much of the wood was under the skin, and if removal in the clinic was possible.

"Instead of taking the whole day off, people can get their medical needs attended to and then, on their physician's say so, they can get back to their life," Higgins said.

The Chico physician believes the telemedicine link should be able to handle about 30 percent of

the cases seen at the Mad River clinic.

It also takes care of post-visit tasks, such as ordering prescriptions and follow-up visits. Higgins says he'll be able to link with the patient's pharmacy; send over a prescription, which the drug store will fill, hold or deliver.

Higgins feels his system is incredibly valuable because of the time-saving implications for rural areas — or at schools.

For schools, the two-way communication can mean health personnel can handle most situations on the spot.

Chapman School is a few weeks away from having an operational system, according to Claudia Benton, who heads the school's Healthy Start program encouraging wellness.

"Everyone seems to be very excited about the computer link. The staff is positive and families are too," she said.

Higgins sees nearly unlimited potential, even in the workplace. Talks have occurred with several local employers.

A office or plant link can mean employees don't have to lose half a day sitting in a doctor's office unless they absolutely need to be there.

Higgins also has explored the connection with north state prisons. Already telemedicine links an Amarillo, Texas prison with nearby medical specialists. What's saved — besides taxpayer dollars — is the risk of an escape or a hostage situation if a physician is needed.

To Higgins knowledge, he is the only primary care physician in Northern California using this system, but there are telemedicine links between north state hospitals and specialist groups.

Colusa Community Hospital has been using a telemedicine link to a Chico radiology group, rather than expending what it would cost to have a full-time radiologist on board. Another link — this time with physicians at the University of California Davis Medical Center — has opened the door for

infant delivery at the hospital.

Others that have used or are using telemedicine include Biggs Gridley Memorial Hospital and Enloe Hospital.

But questions still abound. Most are based on the fact that telemedicine at the primary physician level has no track record.

Insurance companies and medical groups are still making up their minds about this kind of treatment in the primary care area, according to Higgins.

But specialists for years have used a telemedical link for cross-country examinations and recommendations. Medical universities and teaching hospitals also depend on the technology.

Higgins is still grappling with cost and charges. Because the system is on a trial basis, his telemedical patients aren't getting charged for the service.

They hope to find answers this weekend. He and Tinkelenberg are attending a California Medical Association conference in Sacramento on the telemedicine.

Will insurances pay? What are the legal and liability considerations? And where private grants have funded exploration in traditional medicine, will private money come forward to encourage telemedicine?

Financing is a challenge, and Higgins is hoping for investor support, although he paid out of his pocket the \$3,000 necessary for his off-the-shelf system.

But the advantages are clear to Higgins', who sees the potential of having a direct link to patients in the home, especially those with transportation or mobility difficulties. Another possibility is when a physician is going on vacation. Higgins believes his system goes hand in hand with managed care because of cost containment. But it also may mean that a primary care physician like himself doesn't have to affiliate with a huge physicians group to stay in business.

"I think patients can get better primary care with this system."

Chico Enterprise-Record
Saturday, September 30, 1995

Chico school prepares for telemedicine link

Keeping kids healthy has been made a priority project at Chapman School and telemedicine fits right in, according to Claudia Benton, who coordinates the Healthy Start program to educate families, students and staff about health.

Benton said to the best of her knowledge, Chapman will be the first elementary school in the nation to have a telemedicine link with a physician's office.

The school has to upgrade its computer to accept the attachments and software. Benton expects it only to be a couple of weeks before the first connection is made.

In many ways, Chapman will be a testing ground for the service, and Benton can see other schools following its lead.

Still to be figured out at Chapman is when the call to Higgins will be made.

Like other Chico schools, the presence of a nurse at Chapman is based on its enrollment, so that she's there six hours a week, in addition to a full-time health aid. The aid doesn't have the credentials of a nurse, but has been trained in basic steps such as first aid and CPR.

Benton said even when the nurse is present, the call to Higgins could be made.

Benton suspects on the first couple of times, the school will call the parents or invited them to the school, just as if they were headed to the doctor's office.

She said the school plans to

create a release form so that parents can determine in advance if they want their child to participate in the service.

Benton thinks the idea will be well received, and should work to improve student health.

"I can see this could be a major help to families in an area like this who have problems with transportation, can't get to the doctor and may just send their child to school sick. They might wait until the child is so ill that a visit to the emergency room is necessary.

"If a teacher notices a child is not well, he can be sent to the nurse's office and at that point determine if the child can be seen with this link-up."

It also dovetails with the multilingual homes served by Chapman. Benton said the school has interpreters to help.

Chapman faces only the cost of the software and recording equipment, about \$1,500, but only if they decide to go with the system after the 30-day trial.

Benton said the system requires minimal computer training.

Somewhere in the process a physician's charge would surface as well.

"This is so brand new there's no protocol or procedures at this point," said Benton. "All this has to be developed."

Benton said Higgins originally approached the school district, which directed him to Chapman because of its health orientation.

"We've met with other district people," said Benton. "They're excited about it too."

SUNDAY, Aug. 27, 1995

The doctor is in ... on line

East Humboldt, South Trinity residents use video link for medical aid

By Mary Lane
The Times-Standard

MAD RIVER — Jim Tinklenberg didn't think he should just pull the branch out of the injured logger's arm as his patient suggested, but he wanted to consult a doctor to be sure.

So Tinklenberg, emergency medical services coordinator at the Southern Trinity Health Services clinic, asked Dr. Jack Higgins to take a look at the three-inch twig protruding from his patient's forearm.

Higgins, who works from his office in Chico, agreed with Tinklenberg's concern and suggested he send the man on the hour-long drive to Redwood Memorial Hospital in Fortuna, the nearest major medical facility.

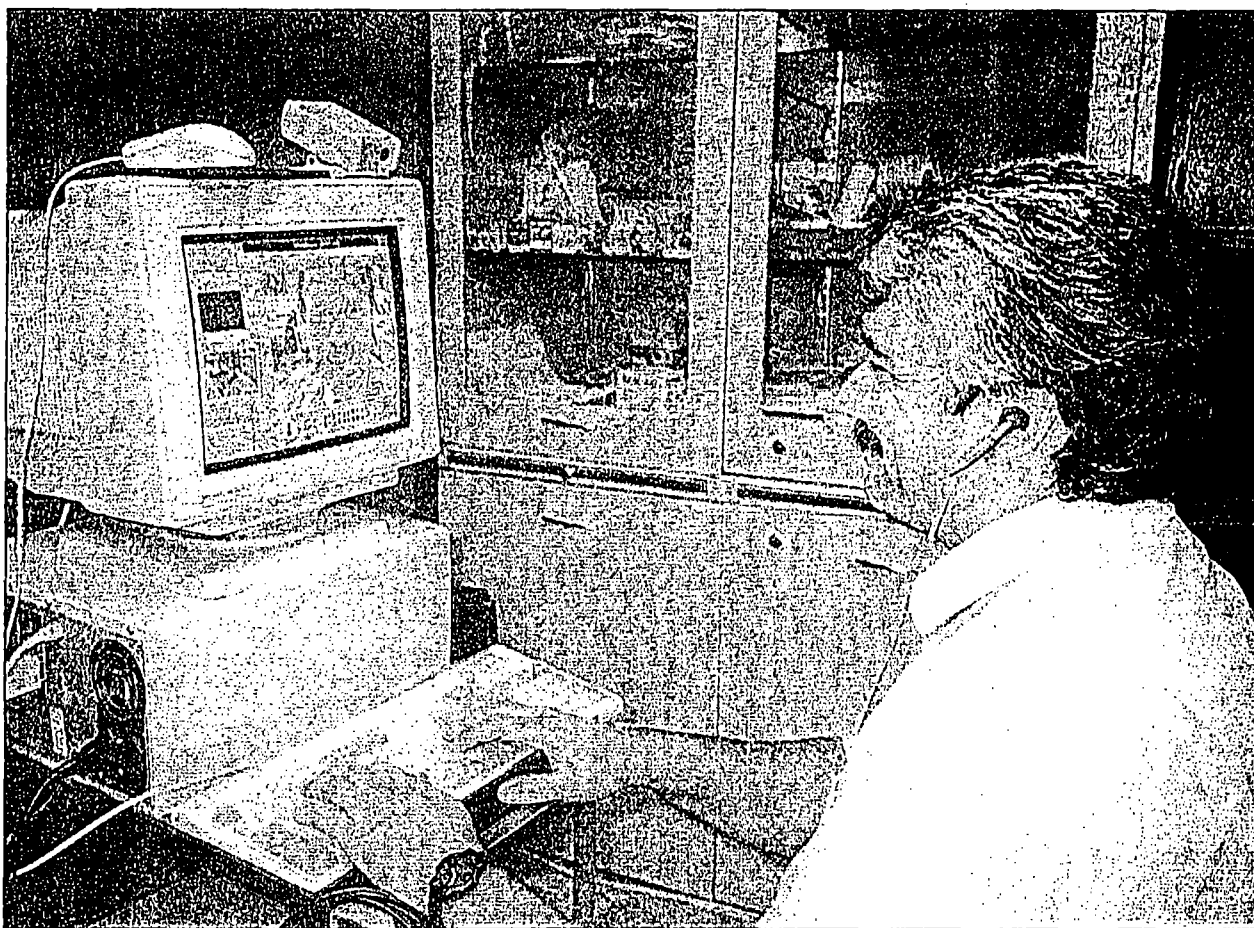
But Higgins didn't ever "see" the patient — at least, not in the flesh. Higgins eyeballed the man's arm with the help of an experimental video system that links the isolated clinic in Mad River with the doctor via computer.

A camera mounted on the top of Tinklenberg's computer in the clinic's examining room carries his image and voice through the phone lines to Higgins' office, about 100 miles away. Higgins has a similar setup in his office.

The system, funded with the help of a federal grant and technical support from College of the Redwoods, is one of only a few projects in the country using computers to send images, sound and data for primary care needs, Higgins said. Most other projects are linking doctors with specialists, he said.

The system has been up for a month in the tiny clinic, which lies less than a mile east of the Humboldt County line. The clinic has two examining rooms and a medical staff consisting of Tinklenberg, a physician's assistant, a receptionist/health aide and dozens of volunteer emergency medical technicians. The computer provides them with easy and immediate access to a doctor.

But the system also has implications for the health care industry in general, said Dave Swanson, dean of CR's science and health division. As more



Mary Lane/The Times-Standard

Jim Tinklenberg, emergency medical services coordinator for Southern Trinity County Health Services in remote Mad River,

"chats" with a live video image of Chico-based Dr. Jack Higgins via Tinklenberg's clinic computer.

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and more doctors are enrolled in managed care programs, they will be forced to look for ways to provide health care at lower costs, Swanson said.

Telemedicine — practicing medicine from a distance — may also enable small town doctors to have better access to specialists and information at big-city medical centers, Swanson said. Doctors would be able to send computerized medical records, including images and sounds, to other doctors around the world for consultation.

"In the future, we may be seeing local physicians in

Eureka ... connected to some major medical centers around the world," he said.

Higgins said about 30 percent of the cases he deals with — including sprained ankles, sore throats and checkups for diabetics and high blood pressure patients — could be done through telemedicine. He visualizes putting these systems in the workplaces of large employers, where people could have their checkups without leaving work. The cost of the system would pay for itself by saving on sick leave, Higgins said.

But it may be a while be-

fore many patients get checkups in front of a computer screen instead of in a doctor's office. For one thing, there are no guidelines on how physicians providing consultations via computer should be paid for their services. Higgins has volunteered his services for the project at Southern Trinity.

Another issue, of course, is making sure the traditionally hands-on practice of medicine can provide the same kind of care through a computer network. For instance, Tinklenberg asked, how do doctors make sure they're not missing an infection when examining a wound via computer?

"It's going to take a long time to get the medical community to accept doing things like that," said Ann Webster, executive director of the clinic. Higgins said guidelines will

be worked out as doctors use such systems more frequently.

"We'll have to have a protocol of what's appropriate and what's not," he said.

But for now, clinic workers are using the system for help in deciding the severity of wounds, such as the logger's impaled arm, or advice on what patients need to do before they see a doctor, which may not be until the next day. The system is not approved by the Food and Drug Administration for diagnosis, Swanson said, just for consultation.

Tinklenberg called the system "an extra help." He probably would have given the injured logger the same advice as Higgins, he said.

"The difference for me was, I felt better about having done the right thing."

VIDEO HOUSECALL NETWORK™

BACKGROUND INFORMATION

At Family Practice Associates of Chico we have recently launched the first of several demonstration projects that offer possible solutions for the crisis in American health care.

Each of these projects involves the Video HouseCall™, the latest innovation in the rapidly growing field of "telemedicine." The Video HouseCall™ is the first system anywhere to offer comprehensive health care services at home or at work using two-way interactive videocommunication technology.

TELEMEDICINE:

Telemedicine involves the provision of medical services through the use of videocommunication technology, i.e., through an electronic linkage between distant sites with two-way interactive video and audio capability.

Many major universities and medical centers are already using telemedicine to expand their spheres of influence by providing subspecialty consultation services to physicians and their patients in rural communities.

For example, University of California, Davis Medical Center provides specialist backup for family physicians who deliver babies at the small community hospital in Colusa, California. Patients in the labor and delivery suite in Colusa are monitored through telemetry equipment based at UCDMC. If the delivering physician encounters difficulties, a member of the obstetrics faculty at UCDMC is available within minutes to supervise the delivery via their two-way video system.

So far, virtually every telemedicine project in the country resembles the UC Davis program, with a "doctor-to-doctor" connection providing specialty services for a patient.

In contrast, the Video HouseCall™ is the first telemedicine project designed primarily as a "doctor-to-patient" connection offering primary care medical services, as opposed to subspecialty consultations.

Other programs have placed workstations in a few homes, but the high cost of those systems has allowed service to only a very limited number of high risk patients. The Video HouseCall™ is the first to offer direct access to medical care from virtually any worksite and any home at an affordable price.

THE VIDEO HOUSECALL™:

At the present time, most primary care physicians and their office staffs routinely give a great deal of advice and treatment over the telephone. Although this is convenient for patients, decisions are based on very limited information, resulting in care of much lower quality than patients would receive if they came to the office.

Patients are often very insistent in their desire to avoid the expense and inconvenience of an office visit. They're reluctant to take time off from work, especially when they realize they may have a significant wait. They often feel certain of their own diagnosis and just want the nurse to "call in some antibiotics." Such people tend to be resentful when their physician wishes to see them before prescribing medication.

However, visual cues supply a large and important portion of what is communicated between patient and provider. Allowing them to see each other - as well as to hear - adds tremendously to the accuracy of the diagnosis and the appropriateness of the therapy.

The Video HouseCall™ provides those visual cues by allowing patients and health care personnel to go face-to-face over a two-way interactive video system, thus supplying almost as much information as the provider would have if the patient were physically present in the treatment facility.

Meanwhile, patients are allowed convenient and affordable access to the health care system from home, from work or from public access sites. In many cases, they can be treated without requiring a visit to the physician's office or emergency department and, if medications are prescribed, a pharmacy can usually deliver to the home or worksite.

This is a service of unprecedented value for patients, who have much easier access to care, and at a time that's convenient for them. They obtain care that is high quality, but at a cost that is lower than an office or clinic visit and much lower than an emergency room visit. In many cases they can avoid the necessity of wasting "sick time" (assuming they're fortunate enough to have such a thing) to go to the office, clinic or emergency room.

Because of the convenience and low cost, they're likely to treat a problem earlier and avoid the complications that often occur when they try to "tough it out" for a few days - either at home or at work - before finally going to the medical facility for treatment.

Employers also benefit from these services due to a significant reduction in time lost from work. In fact, employers who invest in the technology to access the Video HouseCall™ from the worksite should recoup their expense within a few months through decreased absenteeism and increased productivity.

Our videocommunication system is based on an inexpensive upgrade for a personal computer, and operates on standard telephone lines. Families who wish to invest in the technology will be able to access the Video HouseCall™ system from their homes. Initially, however, the majority of patients will enter the system from their workplaces or from other public access sites.

Although the primary function of the Video HouseCall™ involves treatment of minor illnesses and injuries, it will also complement efforts in health promotion and disease prevention. Participants will soon be able to access a variety of services, including interactive risk screening programs, recommendations for screening exams and testing, appointment reminders, health tips, and a large menu of health information programs.

SHAREVISION:

Of approximately 50 telemedicine projects now being implemented in the U.S., most use systems that cost \$50,000 to \$150,000 per site and are intended only for subspecialty consultation.

In contrast, the Video HouseCall™ utilizes lower cost systems such as "ShareVision," which is a \$1,500 upgrade for a personal computer of the type already present in most businesses and many homes. Despite its remarkably low cost, this technology is quite suitable for the broad range of primary care applications listed above.

Designed for long-distance videoconferencing for businesses, ShareVision provides live audio and two-way color video based on a 486PC computer and transmitted over an ordinary telephone line for the price of a regular phone call.

In addition to its function as a workstation for the Video HouseCall™, the ShareVision system has several other valuable features for business owners who make the small investment in the technology, such as application sharing. That means users at both ends of the line can simultaneously control any software program that's loaded into either one of the computers.

For example, if you're in Chico and your associates in San Diego also have ShareVision, you can share a spreadsheet on your Lotus 1-2-3 program whether they have that software or not. Numbers on the spreadsheet can be altered from either end, and the final result can be printed out and saved to disk at both ends. Either user can also handwrite or type notes on the screen, and you can underline or circle items of interest.

Reasons for choosing the ShareVision system for the Video HouseCall™ include its high quality, its very low cost and its ability to use a single, standard telephone line. The latter feature is very important for provision of access to triage and

primary care medical services from remote rural areas and small towns where fiber optics and ISDN lines aren't available.

In contrast, virtually everyone else in the field of telemedicine is working with much more expensive systems that utilize fiber optic lines, ISDN lines or extremely high cost satellite links.

DEMONSTRATION PROJECTS:

State Capitol - Sacramento, California:

In May, 1995 we testified at a hearing on telemedicine held jointly by the Senate and Assembly Subcommittees on Rural Health. By plugging a PC equipped with ShareVision into a standard phone line in the Capitol building, we were able to demonstrate two-way video connection with College of the Redwoods in Eureka, California.

This provided an interesting contrast with the high-end systems demonstrated by Stanford University and University of California, Davis, both of which required temporary installation of nine telephone lines in order to access ISDN technology.

We pointed out that our low-end system is ideal for provision of primary care services, and complements the specialty services offered by the university medical centers.

College of the Redwoods - Eureka, California:

Our next demonstration linked Family Practice Associates of Chico with College of the Redwoods in Eureka.

This allowed us to evaluate the system in a controlled setting with simulated medical illnesses and injuries (and an occasional real patient).

Southern Trinity Health Clinic - Mad River, California:

In July, 1995 we implemented a demonstration project linking Family Practice Associates of Chico with the Southern Trinity Health Clinic in Mad River, California.

Southern Trinity Health Services provides the only medical care available in an 800 square mile area of southern Trinity County and southeastern Humboldt County. The next closest health care facility is 1 1/2 to 2 hours away over mountain roads.

The clinic is staffed part-time by a Physician Assistant, and if he has any doubts about a diagnosis or therapeutic plan, he is now able to obtain physician backup from Family Practice Associates.

When the Physician Assistant is off duty, a paramedic with Southern Trinity Area Rescue greets patients who come to the clinic, and utilizes the Video HouseCall™ system to contact Family Practice Associates of Chico for evaluation and treatment of the patient.

Some patients are referred to the emergency room at the hospital in Fortuna. However, we've prevented that 3-4 hour round trip for many patients, by treating or by deciding that further evaluation can be deferred until the Physician Assistant is available.

School-Based Clinics:

Many children are denied adequate health care when parents are unable to take time off work to pull them out of school and go visit the doctor. Children often expose other students and teachers for several days before their parents finally seek treatment for them, often in an expensive emergency room.

The Video HouseCall™ allows schools to offer convenient and cost-effective access to health care for students and teachers in order to:

- treat earlier in the course of an illness, preventing development of serious complications
- shorten the time an untreated patient exposes other students and teachers to contagious diseases
- improve access to preventive health services
- decrease parents' need to miss work

Although the initial phase will involve Chapman Elementary and a few other selected schools, we will seek grants to fund expansion of the program to include every school in our local districts.

Worksite health services:

The Video HouseCall™ at worksites offers employers and employees:

- evaluation and treatment of minor illnesses and injuries at the worksite, reducing time lost for medical appointments
- convenient access that encourages early treatment to avoid complications and prevent spread of contagious diseases
- evaluation and treatment of work-related injuries and illnesses at the worksite to reduce absenteeism and control Workers' Compensation expenses
- on-line health promotion and disease prevention services, including dietary counseling and exercise instruction
- on-line mental health services and psychological counseling
- an Employee Assistance Program - professional help for employees with personal problems that affect their work
- reduction in overall costs for health care

Employers who upgrade a PC or Mac computer to create a workstation for access of the Video HouseCall™ will recoup their investment within months through decreased absenteeism and increased productivity.

The ShareVision system will pay for itself again through its non-medical uses for business communications, and for marketing, sales, training, etc. For example, two individuals who are physically thousands of miles apart can see each other face-to-face, and real-time application sharing means they can work together on a shared document just as if they were side-by-side in the same office. A spreadsheet or any other software available at either site can be manipulated equally well from both ends, and resulting documents can be saved to disk or printed out at each site.

For business travelers, this allows unprecedented communication with the home office and provides access to quality medical care from anywhere in the world.

This state-of-the-art, guaranteed upgradable system costs only \$1,500, and ShareVision is available on a 30-day free trial to allow adequate experience before committing to a purchase.

Internet Access:

The Video HouseCall Network™ will soon offer direct access to comprehensive health care services via the Internet.

Through our home page in the World Wide Web, we will be able to provide health information and limited advice to Internet users anywhere in the world. Those who have ShareVision or a compatible video system will be invited to contact us directly by modem. For users in California, treatment will also be available.

Video HouseCall™ provides a new answer to the old question,

"Is there a doctor in the house?"

Video HouseCall Network™
1560 Humboldt Road, Suite 1
Chico, California 95928

Voice: (916) 891-3503
Fax: (916) 891-4577

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In contrast, the Video HouseCall™ utilizes lower cost systems such as "ShareVision," which is a \$1,500 upgrade for a personal computer of the type already present in most businesses and many homes. Despite its remarkably low cost, this technology is quite suitable for the broad range of primary care applications listed above.

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The Video HouseCall™ at worksites offers employers and employees:

- evaluation and treatment of minor illnesses and injuries at the worksite, reducing time lost for medical appointments
- convenient access that encourages early treatment to avoid complications and prevent spread of contagious diseases
- evaluation and treatment of work-related injuries and illnesses at the worksite to reduce absenteeism and control Workers' Compensation expenses
- on-line health promotion and disease prevention services, including dietary counseling and exercise instruction
- on-line mental health services and psychological counseling
- an Employee Assistance Program - professional help for employees with personal problems that affect their work
- reduction in overall costs for health care

Employers who upgrade a PC or Mac computer to create a workstation for access of the Video HouseCall™ will recoup their investment within months through decreased absenteeism and increased productivity.

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New! VIDEO PHONE:

The ShareVision PC3000 is videoconferencing the easy way.

ShareVision PC3000

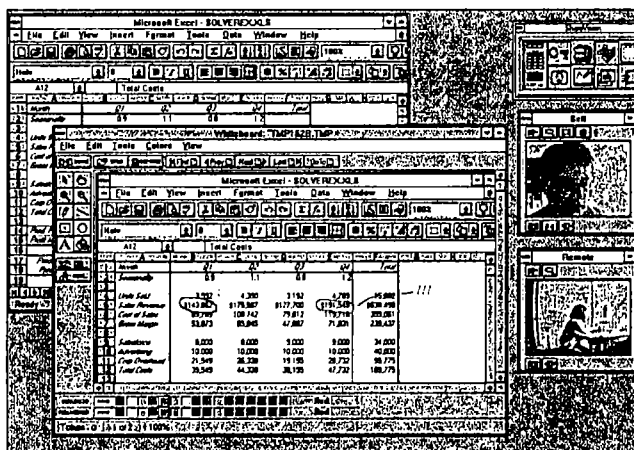
Face-to-Face Video Conferencing

Desktop videoconferencing is one of those technologies that looks great on paper but has failed to make any significant inroads into the PC marketplace. Until recently the problem was due to bandwidth—PC modem technology is only now becoming adequate for real-time video transmission. But even with the advent of ultrafast V.34 modems, desktop videoconferencing has continued to languish due to a lack of simple and inexpensive shrink-wrapped solutions. Fortunately that's about to change.

With the introduction of its ShareVision PC3000 desktop videoconferencing system, Creative Labs is making a statement: Desktop conferencing isn't hard. In fact, the ShareVision PC3000 system is so easy to set up that you may wonder what all the fuss was about. Even better, it's the only product that runs over standard analog telephone lines, thereby avoiding the hassles and steep price tag associated with ISDN-based setups.

Soup to Nuts Everything you need for videoconferencing is right in the box, from the real-time video editing board to a V.34 modem. Software, hardware, cables—it's a complete solution.

The core of this system is the ShareVision video card, which handles up to three RCA and one S-Video input channels. The ShareVision digital camera delivers good contrast even in dimly lit environments such as office cubicles, but don't expect movie-quality motion video. Even at ShareVision's maximum speed of 15 frames per second the video has a flip-book jerkiness to it, though it's good enough to convey facial expressions. And since higher frame rates require the expensive headaches of ISDN-based products such as AT&T's Vistium or Intel's ProShare, you can get used to ShareVision in a hurry. In addition, its video windows are sizable to 80 by 96 pixels, 96 by 128 pixels, or 120 by 160 pixels,



Why Travel? Have face-to-face meetings right at your desk with videoconferencing. If you're looking for an inexpensive, easy-to-use setup, check out Creative Labs' ShareVision PC3000.

Video Phone: The ShareVision PC3000 is videoconferencing the easy way. It includes a video card, color camera, sound card, 28.8Kbps modem, and headset.



though the video quality drops as the windows get larger.

The software is extremely easy to learn—most options are available via the tool palette, including a dialer program you use to manipulate the modem and establish connections.

Share with Others Once connected, you can collaborate visually via a real time interactive whiteboard, share an application in real time with each authorized user, and move data from system to system via a custom file transfer program. Best of all, you get a fully functional 28.8Kbps V.34 Class modem (Creative Labs throws in a copy of Delrina's WinFax Lite to emphasize the point). This makes

the ShareVision PC3000 system particularly attractive to small businesses and home offices looking for a low-cost communications solution. Even the digital camera can become an interesting diversion since ShareVision lets you capture full-color still images and save them to disk.

Overall, the ShareVision PC3000 system is an example of a good idea well executed. True to its reputation as the master of bundled functionality, Creative Labs includes everything you could possibly need in the ShareVision box. It's a complete desktop videoconferencing solution that works across standard phone lines.

RANDALL C. KENNEDY

FILEBOX

ShareVision PC3000

Usability ****
Performance *** 1/2
Technology ****
Verdict ****

An economical videoconferencing solution.

Competition: There are various component offerings from other desktop videoconferencing vendors, but no other product supports conferencing across standard phone lines.

Minimum System

Requirements: 486, 8MB of RAM, 6MB of available hard-disk space; Windows 3.1, two available ISA expansion slots; a 16- or 24-bit VGA card is recommended.

Includes: Video compression card, color camera, audio card, 28.8Kbps voice and data modem, microphone, headset, and software.

\$1,400 est. street price

Creative Labs
(800) 998-5227, (408) 428-6600

ShareVision

PC3000 & PC300

DESKTOP VIDEO CONFERENCING OVER A REGULAR TELEPHONE LINE*

- * ShareVision is easy to install and affordable to use. All you need is one telephone line and your PC to meet face-to-face with others, regardless of distance.

REAL-TIME APPLICATION SHARING

- * Work together, naturally and easily, on a shared document—just like meeting in the same room!

INTERACTIVE WHITEBOARD SHARING

- * Spontaneously brainstorm together and display ideas graphically for more effective communication.

SEAMLESS INTEGRATION WITH INPUT DEVICES

- * Quickly import any image or document into the Whiteboard, using standard TWAIN-driven devices, such as scanners or video capture cards.

HIGH RESOLUTION STILL IMAGE CAPTURE*

- * Digitize, annotate, store and forward full-color snapshots from local or remote video cameras.

FAST & SIMPLE FILE TRANSFERS

- * Send and receive files or entire directories of data quickly and easily, without interrupting your conversation.

SHAREVISION EMPOWERS YOU TO COMMUNICATE WITH ASSOCIATES ANYWHERE IN THE WORLD WITH LIVE VIDEO, VOICE, INTERACTIVE WHITEBOARDS, REAL-TIME APPLICATION SHARING, AND MORE — ALL OVER A REGULAR TELEPHONE LINE!

NOW CROSS-PLATFORM COMPATIBLE WITH NEW SHAREVISION PRODUCTS FOR MACINTOSH!

BUILT-IN PHONEBOOK

- * File important information about contacts, including names, numbers, and even photographs, for quick reference and one-button autodialing.

MORE VALUE FOR YOUR MONEY

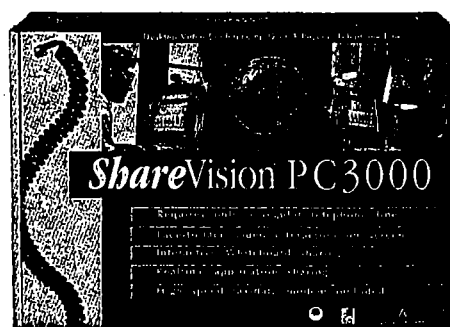
- * ShareVision includes a high-speed fax/data modem. So in addition to ShareVision's collaborative features, you can use the modem for data communications, automated fax send and receive, and convenient access to your remote network services, remote e-mail, and the Internet.

SHAREVISION PC3000 & PC300 INCLUDE:

- * ShareVision PC Communication Card, High-Speed V.34 Fax/Data Modem, ShareVision software, Hands-Free Audio Headset, and all necessary cables, etc.

ShareVision PC3000 also includes:
ShareVision PC Video Card, ShareVision 1/3" CCD Color Video Camera with Stand.

- * *Video features & specifications apply for PC3000 only*



CREATIVETM
CREATIVE LABS, INC.

multimedia iSSs CreativeTM



FEATURES

FACE-TO-FACE VIDEO CONFERENCING*

- ✱ Meet face-to-face with others regardless of distance. The built-in Phonebook stores names, numbers, and even faces of your frequently called colleagues. Autodialing brings them only one mouse click away.

REAL-TIME APPLICATION SHARING

- ✱ Share any popular Windows® program with colleagues, using just a phone line and your PC with ShareVision. Two people actually share the same programs, and edit files together, accessing the application's tools, features, and full power—even if only one user has that application!

INTERACTIVE WHITEBOARD SHARING

- ✱ Quickly and easily annotate your documents or brainstorm new ideas using the Whiteboard's built-in tools, like the pointer, pencil, magnifying glass, lines, shapes, and text. Copy multi-page documents to the Whiteboard, print from other applications to the Whiteboard, capture any image on screen, or import images from any TWAIN-driven device, including most scanners.

FAST AND SIMPLE FILE TRANSFERS

- ✱ Send and receive files or entire directories of data quickly, without interrupting your conversation. There's no need to learn complicated modem commands, just select and send!

HIGH QUALITY COLOR IMAGE CAPTURE*

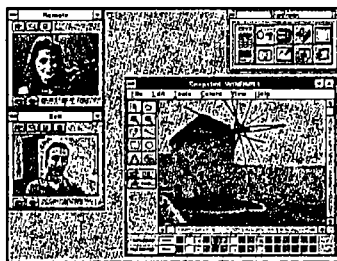
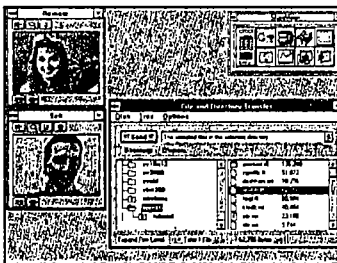
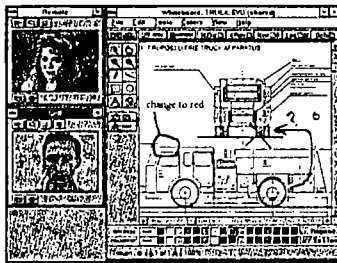
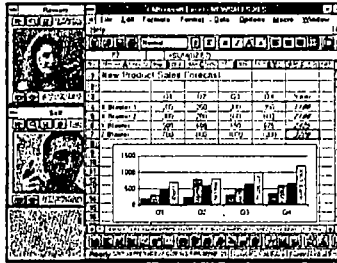
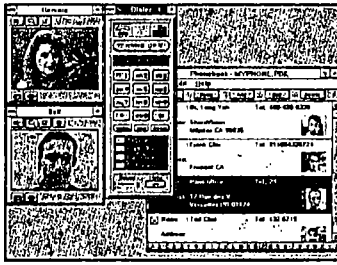
- ✱ Digitize, annotate, store and forward full-color snapshots from local or remote video cameras. Up to two composite and 1 S-Video sources can be connected at each side.

TELEPHONE REQUIREMENTS

- ✱ One standard telephone line, with RJ-11 jack (or adapter).

SYSTEM REQUIREMENTS

- ✱ 486SX 33 MHz with 8 MB RAM (486 DX2-66 recommended)
- ✱ 6 MB hard disk space
- ✱ Two available ISA bus slots
- ✱ VGA or SVGA display (16- or 24-bit VGA display card highly recommended)
- ✱ MS Windows 3.1 and above



SPECIFICATIONS

VIDEO INPUT*

Software selectable video source from two composite video (NTSC or PAL) and one S-video

VIDEO DISPLAY MODES

8, 16, and 24-bit VGA, SVGA

VIDEO FRAME RATES*

Up to 15 fps at 96 x 80 pixels
Up to 12 fps at 128 x 96 pixels
Up to 10 fps at 160 x 112 pixels

VIDEO SNAPSHOT CAPTURE AND DISPLAY*

320 x 240 pixels, 640 x 480 pixels, up to 24 bits per pixel

AUDIO INPUT

Headset microphone

AUDIO OUTPUT

Earpiece speaker & separate line out for speakers

VIDEO COMPRESSION ALGORITHM

VATP™ (Vector Adaptive Transform Processing)

CAMERA*

Type: 1/3" CCD color video camera
Output: composite NTSC color video signal
Base: adjustable, detachable.

MODEM

External fax/data modem supports data rates to 28,800 bps

* Performance subject to modem connection speed and CPU performance.

* Video features & specifications apply for PC3000 only

Creative Labs is a member of the Personal Conferencing Work Group consortium, and intends to release PCS-compliant products as specifications become applicable.

website: <http://www.creaf.com>

CREATIVE™
CREATIVE LABS, INC.

SALES INQUIRES 800-998-5227

U.S. Customer Response Center

P.O. Box 2377

Stillwater, OK 74076

U.S. Corporate Headquarters

1901 McCarthy Boulevard, Milpitas, CA 95035

Telephone: 408-428-6600 • Fax: 408-428-6611

International Inquiries:

Creative Technology Ltd., Singapore

Telephone: 65-773-0233 • Fax: 65-773-0353

All specifications are subject to change without prior notice. ShareVision is a registered trademark and VATP and Vector Transform Processing are trademarks of ShareVision Technology, Inc. Creative Labs, Inc. and the Creative logo are trademarks of Creative Technology, Ltd. All other trademarks are the property of their respective holders.

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THIS IS FOLLOW UP
FOR A PACKET THAT
I SENT OVER TO YOU
RECENTLY. YOU'RE WELCOME
TO IT IF YOU NEED IT.

-SETH



JOHN M. HIGGINS, M.D., F.A.A.P.
A Professional Corporation

DATE: 2/7/96 TIME: 4:25 pm

TO: President Bill Clinton FIRM: The White House

FAX NUMBER: (202) 456-2461

FROM: Jack Higgins, MD FAX NUMBER: (916) 891-4577

NUMBER OF PAGES INCLUDING COVER SHEET: 3

MESSAGE

IF YOU DO NOT RECEIVE ALL 3 PAGES, PLEASE CALL Cherise or Jill
AT (916) 891-6331 AS SOON AS POSSIBLE.

Diplomates
American Board of
Family Practice

1560 Humboldt Rd., Suite 1
Chico, California 95928
(916) 891-6331



*See 2699567-
Have you seen video?*
JOHN M. HIGGINS, M.D., F.A.A.F.P.

*11
PCM/Seth M.*

February 7, 1996

President Bill Clinton
The White House
1600 Pennsylvania Avenue, NW
Washington, DC 20500

Dear Mr. Clinton:

The following letter was sent today by Fedex along with the originals of the material that we faxed to you yesterday.

Perhaps one of your aides can expedite its passage through security.

The packet bears the return address:

Video HouseCall Network
1560 Humboldt Road, Suite 1
Chico, CA 95928

Thank you again for your interest and encouragement.

Sincerely,

Jack Higgins, MD
President and Medical Director
Video HouseCall Network



JOHN M. HIGGINS, M.D., F.A.A.F.P.

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President Bill Clinton
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Washington, DC 20500

Dear Mr. Clinton:

Thank you for taking the time yesterday to speak with my associate, Steven Davis, about the Video HouseCall Network, which provides primary care health services through telemedicine.

I'm enclosing originals of the material that we faxed to you yesterday, and will be happy to provide more copies or additional information on request.

We have launched two small demonstration projects, one to a rural clinic in the mountains of northern California (Mad River Clinic), and one at a local elementary school.

Within six months we plan to extend services to a nursing home, a retirement community, city and county offices, a college campus, a day care center, an airport, and a number of other worksites.

We will also begin testing a self contained portable system utilizing satellite cellular technology for use by home nursing services, travelers, ambulance services and the military.

As you are probably aware, most existing telemedicine systems cost around \$50,000 to \$100,000 per site and require expensive (and often unavailable) ISDN or fiber optic lines. Our Video HouseCall Network operates over "POTS" (Plain Old Telephone System) lines and costs about \$4,000, including a Pentium 75 PC that can be used for other purposes.

Thank you for your interest. I look forward to speaking with you soon, and will be happy to arrange a demonstration at your convenience.

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for
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Cherise

AT (916) 891-6331 AS SOON AS POSSIBLE.

THE VIDEO HOUSECALL™:

At the present time, most primary care physicians and their office staffs routinely give a great deal of advice and treatment over the telephone. Although this is convenient for patients, decisions are based on very limited information, resulting in care of much lower quality than patients would receive if they came to the office.

Patients are often very insistent in their desire to avoid the expense and inconvenience of an office visit. They're reluctant to take time off from work, especially when they realize they may have a significant wait. They often feel certain of their own diagnosis and just want the nurse to "call in some antibiotics." Such people tend to be resentful when their physician wishes to see them before prescribing medication.

However, visual cues supply a large and important portion of what is communicated between patient and provider. Allowing them to see each other - as well as to hear - adds tremendously to the accuracy of the diagnosis and the appropriateness of the therapy.

The Video HouseCall™ provides those visual cues by allowing patients and health care personnel to go face-to-face over a two-way interactive video system, thus supplying almost as much information as the provider would have if the patient were physically present in the treatment facility.

Meanwhile, patients are allowed convenient and affordable access to the health care system from home, from work or from public access sites. In many cases, they can be treated without requiring a visit to the physician's office or emergency department and, if medications are prescribed, a pharmacy can usually deliver to the home or worksite.

This is a service of unprecedented value for patients, who have much easier access to care, and at a time that's convenient for them. They obtain care that is high quality, but at a cost that is lower than an office or clinic visit and much lower than an emergency room visit. In many cases they can avoid the necessity of wasting "sick time" (assuming they're fortunate enough to have such a thing) to go to the office, clinic or emergency room.

Because of the convenience and low cost, they're likely to treat a problem earlier and avoid the complications that often occur when they try to "tough it out" for a few days - either at home or at work - before finally going to the medical facility for treatment.

Employers also benefit from these services due to a significant reduction in time lost from work. In fact, employers who invest in the technology to access the Video HouseCall™ from the worksite should recoup their expense within a few months through decreased absenteeism and increased productivity.

Our videocommunication system is based on an inexpensive upgrade for a personal computer, and operates on standard telephone lines. Families who wish to invest in the technology will be able to access the Video HouseCall™ system from their homes. Initially, however, the majority of patients will enter the system from their workplaces or from other public access sites.

Although the primary function of the Video HouseCall™ involves treatment of minor illnesses and injuries, it will also complement efforts in health promotion and disease prevention. Participants will soon be able to access a variety of services, including interactive risk screening programs, recommendations for screening exams and testing, appointment reminders, health tips, and a large menu of health information programs.

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 - convenient access that encourages early treatment to avoid
-

6

Employers who upgrade a PC or Mac computer to create a workstation for access of the Video HouseCall™ will recoup their investment within months through decreased absenteeism and increased productivity.

BACKGROUND INFORMATION

At Family Practice Associates of Chico we have recently launched the first of several demonstration projects that offer possible solutions for the crisis in American health care.

Each of these projects involves the Video HouseCall™, the latest innovation in the rapidly growing field of "telemedicine." The Video HouseCall™ is the first system anywhere to offer comprehensive health care services at home or at work using two-way interactive videocommunication technology.

TELEMEDICINE:

Telemedicine involves the provision of medical services through the use of videocommunication technology, i.e., through an electronic linkage between distant sites with two-way interactive video and audio capability.

Many major universities and medical centers are already using telemedicine to expand their spheres of influence by providing subspecialty consultation services to physicians and their patients in rural communities.

For example, University of California, Davis Medical Center provides specialist backup for family physicians who deliver babies at the small community hospital in Colusa, California. Patients in the labor and delivery suite in Colusa are monitored through telemetry equipment based at UCDMC. If the delivering physician encounters difficulties, a member of the obstetrics faculty at UCDMC is available within minutes to supervise the delivery via their two-way video system.

So far, virtually every telemedicine project in the country resembles the UC Davis program, with a "doctor-to-doctor" connection providing specialty services for a patient.

In contrast, the Video HouseCall™ is the first telemedicine project designed primarily as a "doctor-to-patient" connection offering primary care medical services, as opposed to subspecialty consultations.

Other programs have placed workstations in a few homes, but the high cost of those systems has allowed service to only a very limited number of high risk patients. The Video HouseCall™ is the first to offer direct access to medical care from virtually any worksite and any home at an affordable price.

Employers who upgrade a PC or Mac computer to create a workstation for access of the Video HouseCall™ will recoup their investment within months through decreased absenteeism and increased productivity.

The ShareVision system will pay for itself again through its non-medical uses for business communications, and for marketing, sales, training, etc. For example, two individuals who are physically thousands of miles apart can see each other face-to-face, and real-time application sharing means they can work together on a shared document just as if they were side-by-side in the same office. A spreadsheet or any other software available at either site can be manipulated equally well from both ends, and resulting documents can be saved to disk or printed out at each site.

For business travelers, this allows unprecedented communication with the home office and provides access to quality medical care from anywhere in the world.

This state-of-the-art, guaranteed upgradable system costs only \$1,500, and ShareVision is available on a 30-day free trial to allow adequate experience before committing to a purchase.

Internet Access:

The Video HouseCall Network™ will soon offer direct access to comprehensive health care services via the Internet.

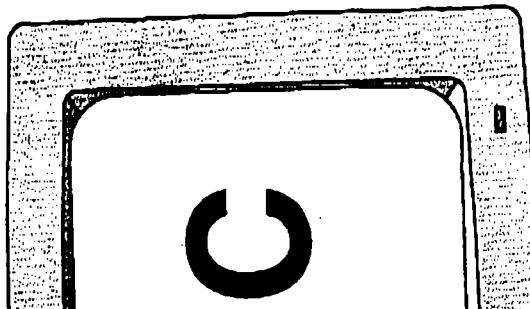
Through our home page in the World Wide Web, we will be able to provide health information and limited advice to Internet users anywhere in the world. Those who have ShareVision or a compatible video system will be invited to contact us directly by modem. For users in California, treatment will also be available.

Video HouseCall™ provides a new answer to the old question,

"Is there a doctor in the house?"

Video HouseCall Network™
1560 Humboldt Road, Suite 1
Chico, California 95928

io Call™



e and cost-effectiveness don't have

are based on historical information,
n filling in a few details. The Video
a medical history that is more
tained at most office visits and,
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useCall is primarily intended for
ses and injuries, it's also useful for
d disease prevention efforts.
a variety of services, including
nt programs, recommendations for
sts, appointment reminders, health
health information programs.

Video HouseCall™

**Proof that quality,
convenience and
cost-efficiency can
be compatible goals
for health care!**

For additional information contact:

Video HouseCall Network
1560 Humboldt Road, Suite 1
Chico, CA 95928
(916) 891-3503

Video House



VIDEO HOUSECALL NETWORK

A NEW ANSWER TO THE OLD QUESTION, "IS THERE A DOCTOR IN THE HOUSE?"

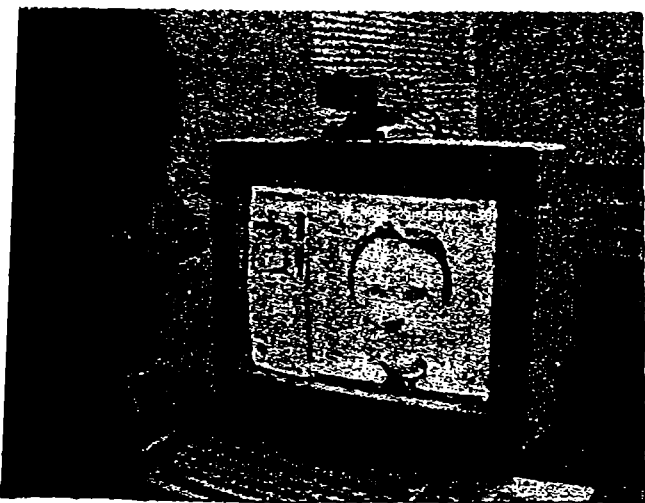
old enough to remember the days when your doctor
housecalls, you'll recall how comforting it was to stay
when you were ill and let someone else do the
g.

er, times changed and, for a variety of reasons, it
is impractical for doctors to drive to patients' homes.

reach the end of the century, we've come full circle -
with a twist. Current technology allows doctors to "visit"
your home or workplace electronically when you're ill.

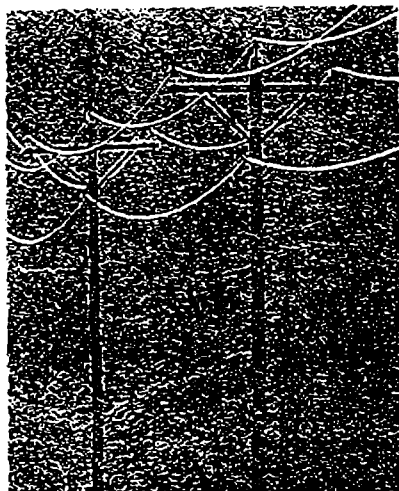
Video HouseCall™ uses computers with state-of-the-art
communications technology to provide medical care
compared to the status quo, is:

- more convenient
- more easily accessible
- more time-efficient
- more economical
- higher quality.



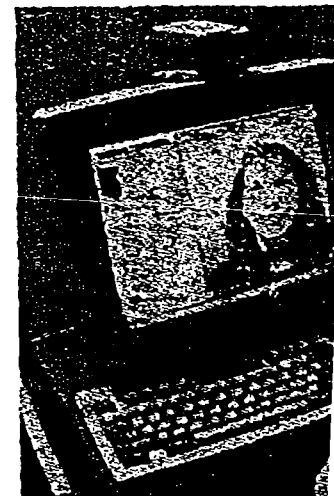
The Video HouseCall provides health information and expert
advice - at home or at work - by linking your personal
computer with our medical offices.

An inexpensive upgrade for your 486-DX33 computer can
turn it into an advanced videocommunications system,
allowing two-way video and audio contact through modems
and ordinary telephone lines.



That visual dimension adds tremendously to the information
previously available from telephone interactions. In fact, with
accessories such as blood pressure monitors and electronic
stethoscopes, the level of information approaches that
obtained at an office visit.

This extra information allows the health care team to
diagnose and treat your problem with a much greater level
of confidence. As a result, the Video HouseCall can often
provide treatment without a visit to the physician's office or
emergency department, and a pharmacy can deliver
prescriptions to your door.



Families who invest in the Video HouseCall from home. Initially, they enter the system from their public access sites.

Worksite access to the Video HouseCall provides convenience for employees, reducing unnecessary emergency room visits and fewer sick days. They're a rather than waiting until the attention.

Employers obviously benefit from reduced absenteeism and lost productivity.

Also, since the Video HouseCall reduces emergency room visits and hospital costs. This works to the benefit of employers, insurance companies, and every taxpayer. Virtually all the cost is indirectly from the cost

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File #.....:	Opening,.Text,.Closing,.and.PS/CC/etc.....	
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