



1
00:01:45,810 --> 00:01:41,530
medicine can only help those in need if

2
00:01:49,240 --> 00:01:45,820
it can reach them on earth or in space

3
00:01:51,940 --> 00:01:49,250
NASA's telemedicine space bridge lets us

4
00:01:55,719 --> 00:01:51,950
doctors consult with Russian clinicians

5
00:01:58,450 --> 00:01:55,729
thousands of miles away to demonstrate

6
00:02:01,660 --> 00:01:58,460
the feasibility of live two-way full

7
00:02:03,850 --> 00:02:01,670
bandwidth video as a medical tool the

8
00:02:06,429 --> 00:02:03,860
space bridge relies on the engineering

9
00:02:09,910 --> 00:02:06,439
skills of one of the country's leading

10
00:02:13,600 --> 00:02:09,920
communications facilities NASA Lewis

11
00:02:15,670 --> 00:02:13,610
Research Center in Cleveland Ohio NASA

12
00:02:17,800 --> 00:02:15,680
Lewis was asked to function as the

13
00:02:20,229 --> 00:02:17,810

Gateway to the telemedicine space bridge

14

00:02:23,080 --> 00:02:20,239

project due to its past history in

15

00:02:26,559 --> 00:02:23,090

satellite communications through the

16

00:02:30,070 --> 00:02:26,569

successes of the 80s and a CTS flight

17

00:02:31,780 --> 00:02:30,080

projects Lewis demonstrated itself as a

18

00:02:35,080 --> 00:02:31,790

leading pioneer in satellite

19

00:02:37,330 --> 00:02:35,090

communications nasa and the Joint

20

00:02:39,670 --> 00:02:37,340

Working Group on space biology and

21

00:02:42,550 --> 00:02:39,680

medicine which established the protocol

22

00:02:44,289 --> 00:02:42,560

that led to the current project saw this

23

00:02:46,270 --> 00:02:44,299

as an opportunity to use Lewis's

24

00:02:50,310 --> 00:02:46,280

expertise and satellite communications

25

00:02:55,289 --> 00:02:53,319

NASA's interest in telemedicine dates to

26

00:02:58,180 --> 00:02:55,299

the early days of the space program

27

00:03:00,539 --> 00:02:58,190

while the focus of NASA's pioneering

28

00:03:03,550 --> 00:03:00,549

work was the help of its astronauts

29

00:03:05,560 --> 00:03:03,560

Talon medicine also became a means of

30

00:03:09,060 --> 00:03:05,570

delivering medical care and education

31

00:03:11,890 --> 00:03:09,070

too remote to rest real areas as well

32

00:03:14,140 --> 00:03:11,900

NASA's current space bridge project will

33

00:03:16,420 --> 00:03:14,150

help standardize in-flight medical

34

00:03:18,580 --> 00:03:16,430

procedures and demonstrate the use of

35

00:03:21,970 --> 00:03:18,590

satellites for long distance medical

36

00:03:24,759 --> 00:03:21,980

care because of the distances between

37

00:03:26,380 --> 00:03:24,769

the participating sites are so great two

38

00:03:28,630 --> 00:03:26,390

satellites are used to provide coverage

39

00:03:30,789 --> 00:03:28,640

to all sites the two satellites are

40

00:03:32,199 --> 00:03:30,799

linked together here at Lewis using two

41

00:03:34,479 --> 00:03:32,209

satellite ground stations which are

42

00:03:37,240 --> 00:03:34,489

connected back to back we call these two

43

00:03:39,910 --> 00:03:37,250

stations the gateway station in Moscow

44

00:03:41,850 --> 00:03:39,920

to Cleveland link uses the Russian wsd

45

00:03:44,430 --> 00:03:41,860

RN satellite also known as

46

00:03:47,280 --> 00:03:44,440

and for distribution here at within the

47

00:03:50,250 --> 00:03:47,290

u.s. we use GT e--'s g-star to satellite

48

00:03:55,460 --> 00:03:50,260

all satellite links are scrambled to

49

00:03:57,930 --> 00:03:55,470

protect patient confidentiality at Lewis

50

00:04:01,520 --> 00:03:57,940

information is relayed between the two

51
00:04:04,710 --> 00:04:01,530
earth stations via fiber-optic cable in

52
00:04:08,640 --> 00:04:04,720
Moscow the satellite signal is relayed

53
00:04:12,060 --> 00:04:08,650
to Moscow Hospital language translation

54
00:04:16,170 --> 00:04:12,070
for both us and Russian doctors is done

55
00:04:19,229 --> 00:04:16,180
on-site in Moscow inaugurated in

56
00:04:21,720 --> 00:04:19,239
December 1993 by the US Senate and

57
00:04:24,000 --> 00:04:21,730
Moscow officials the space bridge

58
00:04:27,990 --> 00:04:24,010
project had its origin in the Armenian

59
00:04:30,480 --> 00:04:28,000
and Aoife disasters of the late 80s the

60
00:04:33,300 --> 00:04:30,490
earthquake into bleezy Armenia leveled

61
00:04:35,370 --> 00:04:33,310
several mountain villages killing and

62
00:04:38,310 --> 00:04:35,380
injuring thousands while causing

63
00:04:40,680 --> 00:04:38,320

millions of dollars in damages the

64
00:04:44,070 --> 00:04:40,690
Armenian medical community was strained

65
00:04:46,560 --> 00:04:44,080
to its limits a gas explosion and

66
00:04:49,320 --> 00:04:46,570
railroad accident in fo only a few

67
00:04:52,770 --> 00:04:49,330
months later also overburdened local

68
00:04:55,440 --> 00:04:52,780
medical facilities international aid in

69
00:04:58,770 --> 00:04:55,450
ova anta bleezy was highlighted by a

70
00:05:02,670 --> 00:04:58,780
one-way video link with us doctors who

71
00:05:05,490 --> 00:05:02,680
modified dozens of on-site diagnosis the

72
00:05:07,350 --> 00:05:05,500
remarkable success of those projects led

73
00:05:10,380 --> 00:05:07,360
the way for the current space bridge

74
00:05:11,820 --> 00:05:10,390
with a total of twenty-two sessions from

75
00:05:13,710 --> 00:05:11,830
the fall of nineteen ninety three

76

00:05:16,560 --> 00:05:13,720

through the summer of nineteen

77

00:05:19,740 --> 00:05:16,570

ninety-four the space bridge explored of

78

00:05:21,840 --> 00:05:19,750

broad range of sub specialties including

79

00:05:25,190 --> 00:05:21,850

space medicine and decompression

80

00:05:30,570 --> 00:05:27,600

through the engineering expertise of

81

00:05:32,370 --> 00:05:30,580

NASA Lewis Research Center the value of

82

00:05:35,460 --> 00:05:32,380

satellite technology as a long distance

83

00:05:38,400 --> 00:05:35,470

medical and educational tool is being

84

00:05:41,670 --> 00:05:38,410

proven because of that future medical

85

00:05:43,410 --> 00:05:41,680

care will reach remote areas experts

86

00:05:46,410 --> 00:05:43,420

will be able to consult with few

87

00:05:48,860 --> 00:05:46,420

limitations because of that tomorrow's

88

00:05:52,020 --> 00:05:48,870

astronauts will be better cared for