

**ASSESSMENT 1 IN DIGITAL SKILLS IN
HEALTHCARE**

TITLE: DIGITAL SKILLS IN HEALTHCARE

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USE OF TECHNOLOGY IN HEALTHCARE

IN MEDICINE AND HEALTHCARE, DIGITAL TECHNOLOGY COULD HELP TRANSFORM UNSUSTAINABLE HEALTHCARE SYSTEMS INTO SUSTAINABLE ONES, EQUALIZE THE RELATIONSHIP BETWEEN MEDICAL PROFESSIONALS AND PATIENTS, PROVIDE CHEAPER, FASTER AND MORE EFFECTIVE SOLUTIONS FOR DISEASES.

TECHNOLOGIES COULD WIN THE BATTLE FOR US AGAINST CANCER, AIDS OR EBOLA AND COULD SIMPLY LEAD TO HEALTHIER INDIVIDUALS LIVING IN HEALTHIER COMMUNITIES. TECHNOLOGIES ARE IMPACTING MANY ASPECTS OF OUR LIVES AS BREAK THROUGHES IN DATA COLLECTIONS, RESEARCH AND TREATMENTS.

THE TECHNOLOGY IN HEALTHCARE HAS THREE BENEFITS:

- 1) THE FIRST BENEFIT IS IMPROVING CARE COORDINATION.*
- 2) SECOND IS IMPROVED POPULATION HEALTH AND MANAGEMENT.*
- 3) THE THIRD IS IMPROVED PATIENT EDUCATION.*

HEALTHCARE TECHNOLOGY REFERS TO ANY IT TOOLS OR SOFTWARE DESIGNED TO BOOST HOSPITAL AND ADMINISTRATIVE PRODUCTIVITY, GIVES NEW INSIGHTS INTO MEDICINES AND TREATMENTS, OR IMPROVES THE OVERALL QUALITY OF CARE PROVIDED.

THE BENEFITS OF HEALTH INFORMATION TECHNOLOGY (IT) INCLUDE ITS ABILITY TO STORE AND RETRIEVE DATA; THE ABILITY TO RAPIDLY COMMUNICATE PATIENT INFORMATION IN A LEGIBLE FORMAT; IMPROVED MEDICATION SAFETY.

TECHNOLOGY CAN PLAY MANY IMPORTANT ROLES IN THE OPERATION OF THE MODERN HOSPITAL. TECHNOLOGY CAN IMPROVE THE EFFICIENCY OF A HOSPITAL AND IMPROVE THE QUALITY OF CARE DELIVERED TO PATIENTS.

THE USE OF TECHNOLOGY DURING COVID-19

COVID-19 IS AN UNPRECEDENTED, WORLDWIDE PANDEMIC.

TO CONTROL THE COVID-19 PANDEMIC, PHYSICAL DISTANCING, AND QUARANTINE MEASURES WERE MANDATED.

IN THIS RAPID REVIEW, IT FOCUSED ON PUBLIC HEALTH ISSUES RELATED TO COVID-19, IDENTIFIED 52 ARTICLES, REVIEWED 29 ARTICLES IN DETAIL, AND FOUND THAT DIGITAL TECHNOLOGIES HAVE BEEN USED FOR THREE MEDICAL ACTIVITIES: DIAGNOSIS, SURVEILLANCE, AND PREVENTION. THIS REVIEW HAS NOT ONLY PROVIDED AN INITIAL KNOWLEDGE BASE IN THIS AREA BUT ALSO MOTIVATED FURTHER SEARCH AND REVIEW OF HUMAN BEHAVIOR WITH EMERGING TECHNOLOGIES.

THE PANDEMIC HAS RESULTED IN THE WIDESPREAD DISRUPTION OF MEDICAL EDUCATION AND PROFESSIONAL TRAINING. EXAMPLES INCLUDE REDUCED TEACHING WITH REDEPLOYMENT OF MEDICAL EDUCATORS TO CLINICAL CARE, AND THE QUARANTINE AND IMPACT OF ILLNESS ON MEDICAL EDUCATORS AND STUDENTS. MEASURES TO ENSURE SOCIAL DISTANCING HAVE INCLUDED CLOSURE OF MEDICAL SCHOOLS AND WORKING FROM HOME FOR BOTH EDUCATORS AND STUDENTS. LOCAL AND INTERNATIONAL TRAVEL, AND ATTENDANCE AT TRAINING PROGRAMS HAS BEEN HALTED. PHYSICAL ATTENDANCE AT WORKSHOPS AND SYMPOSIA, CONFERENCES, CLINICAL ATTACHMENTS AND VISITING FELLOWSHIPS HAS CEASED. TRAGICALLY, THERE HAVE ALSO BEEN AN INCREASING NUMBER OF DEATHS THAT INCLUDE DOCTORS AND OTHER HEALTHCARE PROFESSIONALS.

MEDICAL SCHOOLS AND OTHER MEDICAL EDUCATION PROVIDERS, INCLUDING COMMERCIAL ORGANIZATIONS AND PROFESSIONAL BODIES, HAVE RAPIDLY SCALED UP THE PROVISION OF EDUCATIONAL CONTENT AND TRAINING ONLINE, AS WELL AS FACULTY DEVELOPMENT IN THE USE OF TECHNOLOGY, ESPECIALLY BY ONLINE COURSES. LARGE GROUP IN-PERSON LECTURES HAVE BEEN REPLACED BY STREAMED ONLINE LECTURES, USING TECHNOLOGIES FOR SCREEN CAPTURE AND ONLINE DISSEMINATION. SMALL GROUP SESSIONS AND TUTORIALS HAVE BEEN REPLACED WITH INTERACTIVE WEBINARS USING WEB CONFERENCING PLATFORMS. ALL OF THESE LEARNING RESOURCES CAN BE EASILY ACCESSED FROM MOBILE DEVICES.

A MAJOR CHALLENGE FOR MEDICAL EDUCATORS AT THE PRESENT TIME HAS BEEN TO REPLICATE THE EXPERIENCE OF CLINICAL ENCOUNTERS. THESE ENCOUNTERS RANGE FROM CLINIC AND WARD ROUNDS TO INTERACTIVE PATIENT SESSIONS TO TRAINING IN INTERPERSONAL AND INTER PROFESSIONAL COMMUNICATION AND CLINICAL SKILLS. CURRENTLY AVAILABLE TECHNOLOGY, SUCH AS VIDEOS, PODCASTS, SIMPLE VIRTUAL REALITY, COMPUTER SIMULATIONS AND SERIOUS GAMES, ARE BEGINNING TO BE USED TO ASSIST EDUCATORS AND FACILITATE STUDENT LEARNING AND TRAINING IN THESE AREAS.

THE USE OF DIGITAL COMMUNICATION, COLLABORATION AND PARTICIPATION IN HEALTH AND SOCIAL CARE

COMMUNICATION

THE USE OF DIGITAL COMMUNICATIONS TECHNOLOGY IS COMMON, FOR EXAMPLE, 90% OF THE UK POPULATION HAVE A MOBILE PHONE. INCREASINGLY, THE NHS IS EMBRACING THE USE OF DIGITAL COMMUNICATION TECHNOLOGY FOR COMMUNICATION BETWEEN CLINICIANS AND PATIENTS, PRESENTLY ROLLING OUT E-MAIL DESIGNED FOR THIS PURPOSE. POLICYMAKERS DEEM THE INTRODUCTION OF SUCH TECHNOLOGIES AS PRESENTING A SOLUTION TO THE CAPACITY ISSUES CURRENTLY FACED BY GENERAL PRACTICE, AND HAVE PUSHED FOR THEIR WIDESPREAD USE.

FOR EXEMPLE, WE HAVE NHS-APP.

THE NHS-APP IS REALLY HELPFUL FOR ALL PEOPLE FROM UK, BECAUSE THEY HAVE LOTS OF BENEFITS.

THE APP IS DESIGNED TO MAKE FAST, ACCURATE, DIGITAL CONTACT TRACING POSSIBLE WHILE PROTECTING YOUR PRIVACY AND IDENTITY. IT USES THE MINIMUM AMOUNT POSSIBLE OF YOUR PERSONAL DATA.

COLLABORATION

COLLABORATION IN HEALTH CARE IS DEFINED AS HEALTH CARE PROFESSIONALS ASSUMING COMPLEMENTARY ROLES AND COOPERATIVELY WORKING TOGETHER, SHARING RESPONSIBILITY FOR PROBLEM-SOLVING AND MAKING DECISIONS TO FORMULATE AND CARRY OUT PLANS FOR PATIENT CARE.

FOR EXEMPLE, COLLABORATION HAS 5 BENEFITS:

IMPROVE PATIENT CARE AND OUTCOMES.

REDUCE MEDICAL ERRORS.

START TREATMENT FASTER.

REDUCE INEFFICIENCIES AND HEALTHCARE COSTS.

IMPROVE STAFF RELATIONSHIP AND JOB SATISFACTION.

PARTICIPATION

PARTICIPATION IS THE PROCESS BY WHICH INDIVIDUALS AND FAMILIES ASSUME RESPONSIBILITY FOR THEIR OWN HEALTH AND OF THE COMMUNITY THEY LIVE IN.

DIGITAL IDENTITY/WELL-BEING AND SAFETY

WHAT IS DIGITAL WELL BEING AND SAFETY – THE ABILITY TO USE DIGITAL TECHNOLOGIES IN WAYS THAT SUPPORT PERSONAL WELL BEING AND SAFETY AND THAT OF OTHERS.

THE ABILITY TO DEVELOP, PROMOTE AND SAFEGUARD APPROPRIATE DIGITAL IDENTITIES THAT SUPPORT A POSITIVE PERSONAL AND ORGANISATIONAL REPUTATION

THE ABILITY TO USE DIGITAL TECHNOLOGIES IN WAYS THAT SUPPORT PERSONAL WELL-BEING AND SAFETY AND THAT OF OTHERS

THE ABILITY TO RECOGNISE AND ACT UPON DIGITAL SITUATIONS AND EVENTS THAT MIGHT COMPROMISE PERSONAL, PROFESSIONAL OR ORGANISATIONAL SECURITY

THE ABILITY TO DEMONSTRATE AND CHAMPION ETHICAL, POSITIVE, HEALTHY AND APPROPRIATE ATTITUDES AND BEHAVIOURS IN RELATION TO DIGITAL IDENTITY, WELL-BEING AND SAFETY OF SELF AND OTHERS.

THE USE OF DIGITAL LITERACY FOR PROFESSIONAL CAREER DEVELOPMENT

WHAT MEANS DIGITAL LITERACY ? – MEANS THE SKILLS YOU NEED TO LIVE, LEARN AND WORK IN SOCIETY WHERE COMMUNICATION AND ACCESS TO INFORMATION IS INCREASINGLY THROUGH TECHNOLOGIES LIKE INTERNET PLATFORMS ,SOCIAL

MEDIA AND MOBILE DEVICES .COMMUNICATION IS ALSO A KEY OF ASPECT OF DIGITAL LITERACY .

EXAMPLES OF DIGITAL LITERACY:

UNDERSTANDING HOW TO USE WEB BROWSERS,SEARCH ENGINES ,EMAIL,TEXT,WIKI ,BLOGS,PHOTOSHOP ,POWERPOINT ,VIDEO CREATION .

DIGITAL LITERACY INVOLVES USING EMERGING TECHNOLOGIES TO COMMUNICATE MEANINGFULLY ACROSS TECHNOLOGY, LANGUAGE, SOCIAL, CULTURAL AND. INTELLECTUAL BARRIERS. SCHOOLS NEED TO TEACH CONCEPTS AND TECHNIQUES TO ALLOW PUPILS TO WORK WITH ANY DIGITAL DEVICE, AND ADAPT TO NEW.

PROFESSIONAL DEVELOPMENT EXAMPLES

CONTINUING EDUCATION.

PARTICIPATION IN PROFESSIONAL ORGANIZATIONS.

RESEARCH.

IMPROVE JOB PERFORMANCE.

INCREASED DUTIES AND RESPONSIBILITIES.

APPROACHES TO PROFESSIONAL DEVELOPMENT:

SKILL BASED TRAINING.

JOB ASSIGNMENTS.

THE 4 PRINCIPLES OF DIGITAL LITERACY :

THE FIRST PRINCIPLE OF DIGITAL LITERACY IS SIMPLY COMPREHENSION

–THE ABILITY TO EXTRACT IMPLICIT AND EXPLICIT IDEAS FROM A MEDIA.

INTERDEPENDENCE.

SOCIAL FACTORS.

CURATION.

THE RELEVANCE OF TECHNICAL PROFICIENCY FOR INFORMATION AND DATA HANDLING

TECHNICAL PROFICIENCY-MUST BE ABLE TO APPLY THE TECHNICAL KNOWLEDGE AND SKILLS REQUIRED IN THE SPECIALIST AND PROFESSIONAL JOB ROLE AND RESPONSIBILITIES IN ORDER TO ACHIEVE THE EXPECTED OUTPUTS.

TECHNICAL SKILLS HEALTHCARE

CUSTOMER BILLING.

QUALITY ASSURANCE AND CONTROL.

STAFF MANAGEMENT.

PROJECT MANAGEMENT.

COMMUNICATION.

TEAMWORK.

RELATIONSHIP BUILDING.

TECHNICAL SKILLS ARE IMPORTANT, BECAUSE THEY SET YOUR EMPLOYEES, AND YOUR BUSINESS, UP FOR SUCCESS. FUNDAMENTAL TO THIS SUCCESS, IS A GREAT LMS TO DELIVER THIS ESSENTIAL TRAINING.

THE GOOD NEWS IS, THE COST OF TRAINING YOUR EMPLOYEES CAN BE REDUCED BY ONLINE TRAINING THROUGH AN LMS. THE KEY TO TEACHING TECHNICAL SKILLS THROUGH AN LMS, IS FINDING ONE THAT FITS YOUR BUSINESS.

SOME IMPORTANT FEATURES TO CONSIDER ARE THE PRICING, HIDDEN COSTS, RELIABILITY, AND PERHAPS MOST IMPORTANTLY, THE QUALITY OF CUSTOMER SUPPORT. ONCE YOU'VE CHOSEN THE RIGHT LMS FOR YOUR COMPANY, AND IMPLEMENTED TECHNICAL SKILLS TRAINING FOR EMPLOYEES, IT'S IMPORTANT TO SUPPORT THEM BY KEEPING THEM ENGAGED AND ENTHUSIASTIC ABOUT LEARNING.

MOTIVATING ADULTS TO LEARN IS SIMPLE WHEN YOU HAVE THE RIGHT TOOLS FOR THE JOB. THERE ARE COUNTLESS WAYS TO MAKE YOUR TECHNICAL TRAINING COURSES ENGAGING.

HERE ARE SOME HELPFUL SUGGESTIONS FOR KEEPING YOUR EMPLOYEES INVESTED IN THEIR TECHNICAL SKILLS TRAINING:

SHOW THEM WHAT'S IN IT FOR THEM

BE TRANSPARENT WITH YOUR EMPLOYEES – POINT TO THE BENEFITS THAT TECHNICAL SKILLS TRAINING WILL BRING TO THEM, AND THEIR ROLES. GIVE THEM AN UNDERSTANDING THAT TRAINING WILL BOOST THEIR CAREER SUCCESS AND HELP THEM GAIN NEW, VALUABLE SKILLS.

GAMIFY

USING GAMIFICATION THROUGH YOUR LMS IMPROVES USER EXPERIENCE AND MOTIVATES THEM TO CONTINUE THEIR TECHNICAL SKILLS TRAINING. SOME BASIC GAMIFICATION INGREDIENTS IN ELEARNING INCLUDE BADGES, POINTS, LEVELS AND LEADERBOARDS.

BITE-SIZED TRAINING

TO IMPROVE KNOWLEDGE RETENTION, AND MAKE AMPLE COURSE LOADS SEEM LESS INTIMIDATING, MICROLEARNING IS THE PERFECT SOLUTION. WITH MICROLEARNING, YOU CAN OFFER TECHNICAL TRAINING TO YOUR EMPLOYEES IN SMALLER, MORE FOCUSED MODULES. SOME EXAMPLES OF MICROLEARNING INCLUDE SHORT VIDEOS, ANIMATIONS, QUIZZES AND INFOGRAPHICS.

MAKE IT SOCIAL

THROUGH SOCIAL LEARNING, YOUR EMPLOYEES CAN COMMUNICATE WITH OTHER LEARNERS PERHAPS WHO MAY BE FACING THE SAME OBSTACLES AS THEM, OR JUST TO RELATE EXPERIENCES OF THE LEARNING PROCESS. BY USING YOUR LMS'S FORUM, YOUR EMPLOYEES CAN PARTICIPATE IN CONVERSATIONS AND SHARE RESOURCES.

DATA COLLECTION IN HEALTHCARE ALLOWS HEALTH SYSTEMS TO CREATE HOLISTIC VIEWS OF PATIENTS, PERSONALIZE TREATMENTS, ADVANCE TREATMENT METHODS, IMPROVE COMMUNICATION BETWEEN DOCTORS AND PATIENTS, AND ENHANCE HEALTH OUTCOMES.

DATA COLLECTION OF VITAL INFORMATION SAVES TIME AND LIVES WHEN THERE IS A SEAMLESS INTEGRATION OF POPULATION HEALTH DATA. THE COMPUTER SCIENTISTS WHO WORK IN THIS FIELD PROVIDE CRITICAL SUPPORT TO THE HEALTHCARE INDUSTRY. DOCTORS AND STUDENTS AT HARVARD STUDY HEALTH DATA SCIENCES IN ORDER TO SOLVE PROBLEMS.

THE MAIN SOURCES OF HEALTH STATISTICS ARE SURVEYS, ADMINISTRATIVE AND MEDICAL RECORDS, CLAIMS DATA, VITAL RECORDS, SURVEILLANCE, DISEASE REGISTRIES, AND PEER-REVIEWED LITERATURE.

WHEN WORKING IN A CARE SETTING IT IS SO IMPORTANT TO BUILD POSITIVE RELATIONSHIPS WITH CARE USERS. CONFIDENTIALITY AND THE CORRECT HANDLING OF PERSONAL INFORMATION ARE VITAL FOR TRUSTING RELATIONSHIPS AND A BREACH IN THIS MAY LEAD TO A SERVICE USER BECOMING UNWILLING TO COOPERATE WITH THEIR CARE PROVIDERS.

YOU HAVE A RESPONSIBILITY AS A HEALTH OR SOCIAL CARE WORKER TO SAFEGUARD AN INDIVIDUAL'S PERSONAL INFORMATION. YOU SHOULD ALSO TREAT PERSONAL INFORMATION ABOUT OTHER WORKERS THAT YOU HAVE ACCESS TO IN THE SAME WAY. YOUR EMPLOYER MUST HAVE SYSTEMS IN PLACE TO MEET THE LEGAL REQUIREMENTS ABOUT STORING INFORMATION AND YOU MUST ACT WITHIN YOUR EMPLOYER'S AGREED WAYS OF WORKING.

HEALTH DATA MANAGEMENT (HDM) IS THE 'HOUSEKEEPER' IN AN ELECTRONIC MEDICAL/HEALTH RECORD (EMR/EHR). DURING THIS PROCESS, DATA IS BEING EFFICIENTLY AND LOGICALLY ORGANIZED WITHOUT REDUNDANCY, REVIEWED FOR ERRORS, PROCESSED, RETRIEVED, AND KEPT SAFE IN A SECURE ENVIRONMENT.

HEALTH DATA INCLUDES BUT IS NOT LIMITED TO:

PATIENT DEMOGRAPHICS

MEDICAL NOTES

LABORATORY TEST RESULTS

PROCEDURES AND SURGERIES

IMAGING, LIKE X-RAYS, COMPUTERIZED TOMOGRAPHY (CT), AND MRI

PRESCRIPTIONS

REFERRALS AND OTHER COMMUNICATION

PROVIDER INFORMATION, ETC.

DATA CAN BE BOTH STRUCTURED AND UNSTRUCTURED. AN EXAMPLE OF STRUCTURED DATA IS A DATA FIELD FOR A PATIENT'S HEIGHT, USING A STANDARDIZED MEASUREMENT AND UNIT. UNSTRUCTURED DATA COULD BE A STRING OF FREE TEXT, FOR EXAMPLE. COMPUTER SYSTEMS CAN EASILY INTERPRET AND VALIDATE STRUCTURED DATA, BUT UNSTRUCTURED DATA NEEDS MORE HUMAN INTERACTION OR COMPUTATIONAL PROCESSING BEFORE BEING INTERPRETED. NATURAL LANGUAGE PROCESSING (NLP) BY COMPUTERS IS ONE METHOD FOR PROCESSING UNSTRUCTURED TEXT-NOTES.

TO DELIVER BETTER CARE, THE HEALTHCARE PROVIDER MUST BE WELL-INFORMED ABOUT THE PATIENTS AND LINK THEIR HEALTH DATA WITH THE MOST RECENT EVIDENCE. TIME IS A LIMITING FACTOR, AND PROVIDERS DO NOT ALWAYS HAVE THE RESOURCES TO READ THE PATIENT'S RECORDS IN DETAIL.

IT IS ESSENTIAL TO IMPROVE BOTH THE QUANTITY AND QUALITY OF HEALTH DATA. THIS CAN BE DONE BY INCLUDING MORE RELEVANT VARIABLES WHILE MAKING SURE RECORDS ARE COMPLETE, UP-TO-DATE, AND VALIDATED FOR ALL PATIENTS. MORE DATA MEANS MORE INTERPRETATION. THESE INTERPRETATIONS CAN BECOME COMPLEX FOR HEALTHCARE PROVIDERS AS THE DATASET GROWS, AS SCIENCE CONTINUOUSLY EVOLVES, AND AS NEW GUIDELINES ARE PUBLISHED AND NEW TREATMENTS DISCOVERED.

PERSONAL HEALTH INFORMATION IS EXTREMELY SENSITIVE AND MUST BE PROTECTED AGAINST POTENTIAL BREACHES AND CYBER THREATS, WITH HIGH-SECURITY STANDARDS SET BY THE LOCAL JURISDICTION AND LAW. ALSO, INTERNAL RESTRICTIONS WITHIN THE ORGANIZATIONS IS A COMMON PRACTICE TO ENSURE ONLY RELEVANT STAFF MEMBERS HAVE ACCESS.

REDUNDANCY MEANS UNNECESSARILY REPEATED INFORMATION. IT IS MORE DIFFICULT TO MANAGE A DATABASE WHEN INFORMATION IS REPEATED OVER SEVERAL LOCATIONS IN THE DATABASE. AN EXAMPLE OF REDUNDANCY COULD BE WHEN THE LAST NAME IS CHANGED IN ONE TABLE BUT NOT IN ANOTHER ONE. THIS WOULD CREATE A CONFLICT OF INFORMATION AND AN ERROR IN THE SYSTEM. THERE IS A LOW TOLERANCE FOR ERRORS IN HEALTHCARE SINCE THEY CAN AFFECT PATIENTS, LEAD TO POOR HEALTHCARE OUTCOMES, AND, IN WORST-CASE SCENARIOS, CAUSE FATALITIES.

THE QUALITY OF THE DATA IS ONLY AS GOOD AS WHAT YOU FEED INTO THE DATABASE, AS WELL AS HOW WELL IT IS ORGANIZED. FRAGMENTED DATA, SPREAD OVER SEVERAL PLATFORMS, IS A CHALLENGE WHEN THESE PLATFORMS ARE COMMUNICATING WITH EACH OTHER. IT IS IMPORTANT TO USE

*INTERNATIONAL STANDARDS FOR STORING, LABELLING, CLASSIFYING,
TRANSFERRING, AND RETRIEVING THE DATA.*

REFERENCES

<https://mindsea.com/health-data-management/>

<https://www.learnupon.com/blog/technical-skills-training/>

<https://www.mededpublish.org/manuscripts/2943>

