Dinamap Blood Pressure Monitor Manual

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Dinamap Blood Pressure Monitor Manual

Citations 25 References 21 Abstract This study evaluated the accuracy and reliability of the Dinamap 8100 automated blood pressure machine against three internationally recognized criteria. Systolic and diastolic blood pressures were taken concurrently by two nurses using the automated machine and a manual sphygmomanometer. Results demonstrated agreement between automated and manual readings on one set of criteria for both systolic and diastolic pressures, and support for systolic readings only on one other criterion. Comparison of mean differences between automated and manual measures showed the automated machine consistently underread both systolic and diastolic blood pressures. The conclusion from this study was that the Dinamap 8100 machine can be used with some degree of confidence to assess systolic blood pressures in a general population of adult hospital inpatients, but with caution when taking diastolic readings. Request fulltext Citations 25 References 21. The reference standard was evaluated using a comparison of mercury sphygmomanometers. Among the selected studies, three studies had 1000 subjects.. Can an automatic oscillometric device replace a mercury sphygmomanometer on blood pressure measurement.A mercury sphygmomanometer has been considered a gold standard for measuring blood pressure. However, by the Minamata Convention on Mercury, the traditional mercury sphygmomanometer is being replaced by an automated oscillometric device. This study aimed to provide scientific evidence to determine whether an automated oscillometric device can replace a mercury sphygmomanometer and if it is applicable in routine practice. Methods. MEDLINE, EMBASE, the Cochrane Library, and CINAHL were searched on 4 May 2018. Studies comparing blood pressure measurements between automated oscillometric devices and mercury sphygmomanometers were included. Study characteristics were abstracted using the evidence table, and randomeffects metaanalyses were conducted. Results.http://hocikto.info/userfiles/cafe-training-manual.xml

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Data were compiled from 24 studies comprising 47 759 subjects. Conclusion. As a result of this review, the difference in blood pressure between the mercury sphygmomanometer and the automated oscillometric device was within 5 mmHg, but the heterogeneity between the studies was very high. The automated oscillometric devices showed differences in blood pressure results according to the manufacturer and product type. View Show abstract. However, it is important that all nurses are skilled in performing manual BP measurement. Heinemann et al 2008 found that automated BP measurement devices can be used with some confidence to record systolic BP in most adults, but there was some variation observed when recording diastolic BP... It is acknowledged that automated BP monitoring equipment should not be used on patients with a high or low BP, since diastolic BP measurements have been found to be incorrect and unreliable Heinemann et al 2008. Automated devices are also not suitable for patients with abnormal heart rhythms or weak pulses Cork 2007, MHRA 2013.. How to measure blood pressure manually Article Fulltext available Jan 2016 Nurs Stand Melanie Rushton Joyce Smith Rationale and key points This article aims to help nurses to measure blood pressure BP manually using an aneroid sphygmomanometer. BP measurement is an essential clinical skill, and nurses must be competent in performing this procedure and taking accurate readings. Nurses should be aware of manual BP measurement

techniques and understand the patient and environmental factors that may result in inaccurate readings that could compromise patient care. Nurses should regularly undertake manual BP measurement to ensure they remain competent to perform the procedure. Reflective activity Clinical skills articles can help update your practice and ensure it remains evidence based. Apply this article to your practice. Reflect on and write a short account of 1. How reading this article will change your practice. 2.http://oookub.ru/upload/fckeditor/cafas-training-manual.xml

Further learning needs to extend your professional development. AOBP measurement was more accurate than MOBP measurement regarding to AABP assessment. Heinemann et al. 18 showed agreement between automated and manual readings on one set of criteria for SBP and DBP. It was mentioned automated machine underestimated SBP and DBP by comparing of mean values of two methods... They concluded that the Dinamap 8100 machine can be used with some degree of confidence to measure SBP in a general population, but its DBP measurements should be considered accurate cautiously. 18 The manual BP measurement, especially with mercury sphygmomanometer has been used for more than 100 years. Regarding to advances in BP recording methods, mercury method seemed to be removed from the clinics, but, mercury sphygmomanometer remains available as a reference standard until an alternative device will be recognized as much.. Comparison of manual versus automated blood pressure measurement in intensive care unit, coronary care unit, and emergency room Article Fulltext available Mar 2017 Ahmad Mirdamadi Mostafa Etebari BACKGROUND. Accuracy of blood pressure BP measurement in clinical settings is one of the most concerns despite of promotion in techniques for the measurement of BP. Our aim was to compare automated versus manual BP measurement in intensive care unit ICU, coronary care unit CCU, and emergency room patients.Demographic information was recorded. The cardioset heart monitoring device was used for measuring BP and mercury sphygmomanometer with appropriate cuffs was used for manual method. Then, the mean BP of two methods was compared based on different age, sex, weight, and disease findings.Affordability Affordability is a key factor in determining whether a device will be sustainable in the developing world..

Design of affordable and ruggedized biomedical devices using virtual instrumentation Article Fulltext available May 2013 J Med Eng Tech Ryan Michael Mathern Sarah Schopman Kyle Kalchthaler Peter J. Butler Abstract This paper presents the designs of four lowcost and ruggedized biomedical devices, including a blood pressure monitor, thermometer, weighing scale and spirometer, designed for the East African context. The blood pressure device, thermometer and weighing scale were fieldtested in Kenya and each recorded data within 6% error of the measurements from commercial devices and withstood the adverse climate and rough handling. The spirometer functioned according to specifications, but a redesign is needed to improve operability and usability by patients. This article demonstrates the feasibility of designing and commercializing virtual instrumentationbased biomedical devices in resourceconstrained environments through contextdriven design. The next steps for the devices include designing them such that they can be more easily manufactured, use standardized materials, are easily calibrated in the field and have more userfriendly software programs that can be updated remotely. Automated office blood pressure AOBP machines measure blood pressure BP multiple times over a brief period. We aimed to compare the results of manual office blood pressure MOBP and AOBP methods with ambulatory BP monitoring ABPM in patients with chronic kidney disease CKD. This study was performed on 64 patients with CKD stages 34. A nurse manually measured the BP on both arms using a mercury sphygmomanometer, followed by AOBP of the arm with the higher BP and then ABPM. Mean BP readings were compared by paired t test and BlandAltman graphs. Automated device is used for BP estimation in daytoday clinical practice in multiple settings such as outpatient, critical care, and continuous BP monitoring.

http://www.bosport.be/newsletter/boss-bv7300-manual

We observed from our results that there is a higher value of recorded BP with automated device, especially in hypertensives.. COMPARATIVE EVALUATION OF ACCURACY OF RECORDING BLOOD PRESSURE EITHER BY AUTOMATED OSCILLOMETRIC METHOD OR BY SPHYGMOMANOMETER IN BOTH NORMOTENSIVE AND HYPERTENSIVE PATIENTS A PROSPECTIVE OBSERVATIONAL STUDY Article Fulltext available Jan 2018 Sobana Jaiganesh ABSTRACT Objectives Automatic devices based on oscillometric principle are widely used for the estimation of blood pressure BP. Mercury sphygmomanometer mean systolic BP MSBP and its derived cuff pressure are the traditional mode of estimation which is a validated and authenticated procedure. Automated machines using oscillometric method are slowly replacing the conventional technique. This study was done to compare the BP recorded by the mercury sphygmomanometer MSBP and the automated technique using oscillometric method automated office BP AOBP. MSBP and AOBP were recorded adhering to guidelines given by the American Heart Association Joint National Committee. The subjects were divided into two groups as normotensive Group 1 and hypertensive Group 2, and statistical analysis was performed. We observed from our results that there is a higher value of recorded BP with automated device, especially in hypertensives.. Comparative evaluation of accuracy of recording blood pressure either by automated oscillometric method or by sphygmomanometer in both normotensive and hypertensive patients A prospective observational study Article Feb 2018 Sobana R Parthasarathy S Objectives Automatic devices based on oscillometric principle are widely used for the estimation of blood pressure BP. Evidence has shown that automated devices tend to underestimate both systolic and diastolic blood pressures in adults, 25 and overestimate both systolic and diastolic pressures in children and adolescents 5 to 17 years of age. 26 The blood pressure cuff should be placed on the patients bare arm..

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Blood Pressure Measurement Guidelines for Physical Therapists Article Fulltext available Jun 2011 Ethel M Frese Ann Fick H Steven Sadowsky Vital sign measurement and assessment are important components of the review of systems in a physical therapy examination for individuals with and without documented cardiopulmonary disease. Accurate measurement of blood pressure is critical for making appropriate clinical decisions especially if physical therapists wish to play an important role as primary health care providers. The purpose of this paper is to present recommended guidelines for blood pressure measurement by physical therapists and physical therapist assistants. The inaccuracy of automatic devices taking postural measurements in the emergency department. Automatic devices are used to take postural blood pressures in the emergency department despite research proving their inaccuracy in taking single blood pressures. This study assessed the accuracy of an automatic device compared with a manual aneroid reference standard for determining orthostatic hypotension and postural drops at triage. Supine and standing blood pressures were taken with an automatic and a manual device in a sequential and random order, and postural drops were calculated. Findings suggest that automatic devices cannot reliably detect or rule out orthostatic hypotension, indicating that triage nurses need to use manual devices to take accurate postural blood pressures for optimal patient care. Most of these devices are not put through any validation and yet they are still being sold and used by the population. Article Fulltext available Jul 2016 Kanaan Mansoor Saba Shahnawaz Mariam Rasool Sara Shahnawaz BACKGROUND Hypertension has proven to be a strong liability with 13.5% of all mortality worldwide being attributed to elevated blood pressures in 2001. An accurate blood pressure measurement lies at the crux of an appropriate diagnosis.

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Despite the mercury sphygmomanometer being the gold standard, the ongoing deliberation as to whether mercury sphygmomanometers should be replaced with the automated oscillometric devices stems from the risk mercury poses to the environment. AIM This study was performed to check the

validity of automated oscillometric blood pressure measurements as compared to the manual blood pressure measurements in Karachi, Pakistan. MATERIAL AND METHODS Blood pressure was recorded in 200 individuals aged 15 and above using both, an automated oscillometric blood pressure device Dinamap Procare 100 and a manual mercury sphygmomanometer concomitantly. Two nurses were assigned to each patient and the device, arm for taking the reading and nurses were randomly determined. SPSS version 20 was used for analysis. Mean and standard deviation of the systolic and diastolic measurements from each modality were compared to each other and P values of 0.05 or less were considered to be significant. Validation criteria of British Hypertension Society BHS and the US Association for the Advancement of Medical Instrumentation AAMI were used. RESULTS Two hundred patients were included. CONCLUSIONS Systolic readings from a previously validated device are not reliable when used in the ER and they show a higher degree of incongruency and inaccuracy when they are used outside validation settings. Also, readings from the right arm tend to be more precise. Based on our best knowledge, there are no reports about evaluation of validity and interreliability of observers when measured blood pressure using mercury sphygmomanometers.. Validity and interobservers reliability of blood pressure measurements using mercury sphygmomanometer in the PERSIAN Guilan cohort study Article Dec 2019 Blood Pres Monit Farahnaz Joukar Mohammadreza Naghipour Sara Yeganeh Fariborz Mansourghanaei Objective. Accurate measuring of blood pressure is a vital step in both clinical and paraclinical settings.

The aims of the present study were to evaluate the validity and interobserver reliability of measured blood pressures by two trained observers and one expert supervisor in the PERSIAN Guilan cohort study PGCS. Participants and methods. In a quasiexperimental study, two trained observers and one expert supervisor measured systolic and diastolic blood pressures SBP and DBP in 85 included participants. All measurements were done using Riester mercury sphygmomanometer as duplicate for each people. Next, we estimated mean differences and 95% confidence intervals CI for maternal cardiovascular risk markers SBP, DBP, total cholesterol, HDL, LDL, triglycerides, HOMAIR, CRP, and IL6 at 3 years postpartum for women who had a preterm birth vs.For blood pressure, we focused on results for SBP since it is a better predictor of long term outcomes 20 and is more accurately measured than DBP 21. Biomarkers that were not normally distributed triglycerides, HOMAIR, CRP, and IL6 were natural loglntransformed prior to use in the regression models.. Preterm birth and longterm maternal cardiovascular health Article Jan 2015 ANN EPIDEMIOL Wei Perng Jennifer Jacqueline Stuart Sheryl L RifasShiman Emily Oken To investigate whether preterm birth PTB is associated with greater cardiovascular disease CVD risk in a longitudinal cohort. Furthermore, it is typically asymptomatic and underdiagnosed; this has resulted in escalating calls for the instigation of Primary Care PAD screening via Ankle Brachial Index ABI measurement. However, there is limited evidence regarding the feasibility of this and if the requisite core skills and knowledge for such a task already exist within primary care. This study aimed to determine the current utility of ABI measurement in general practices across Wales, with consideration of the implications for its use as a cardiovascular risk screening tool.

A selfreporting questionnaire was distributed to all 478 General Practices within Wales, sent via their responsible Health Boards. The survey response rate was 20%. ABI measurement is primarily performed by nurses 93% for the purpose of wound management 90%. It is infrequently 73% View Show abstract Alternatives to the mercury sphygmomanometer Article Feb 2011 J Publ Health Pol Susan Buchanan Mph Peter Orris Md Joshua Karliner The mercury sphygmomanometer was introduced over 100 years ago. Mercury, however, is a potent human neurotoxin. An international effort has developed to eliminate healthcare sources of mercurythe thermometer and sphygmomanometerand replace them with less toxic alternatives. There is concern regarding the accuracy of these alternative devices. We conducted a literature review of articles published between 1995 and 2009 evaluating the accuracy of mercury, aneroid, and oscillometric blood

pressure devices. Mercury sphygmomanometers fared the best although they do not always perform as expected, failing calibration tests between 1 and 28 per cent of the time. Up to 61 per cent of aneroid sphygmomanometers failed. Recently calibrated aneroid devices performed well. Oscillometric devices were less studied and their performance was variable. All three devices showed variable performance. They should be validated before purchase and calibrated on a regular basis. View Show abstract Preparing students to competently measure blood pressure in the realworld environment A comparison between New Zealand and the United Kingdom Article Jun 2011 Marian Bland Karen Ousey This research sought to evaluate the contribution of simulation to the development of a fundamental nursing skill, blood pressure measurement.

Reports of registered nurse supervision of students undertaking blood pressure measurement on clinical placement varied, but it was clear that students often undertook blood pressure measurement without a registered nurse in attendance to check technique, or the accuracy of their recording. View Show abstract Differences in Automated and Manual Blood Pressure Measurement in Hospitalized Psychiatric Patients Article Feb 2013 J PSYCHOSOC NURS MEN Lucy Neinguii Suokhrie CaroleRae Reed Carolyn Emory Jamie Mayberry Few studies have been conducted recently with noncritically ill patients evaluating commonly used automated blood pressure BP devices. The purpose of this study was to compare BP values obtained using a manual sphygmomanometer versus an oscillometric automated electronic BP device on an acute care psychiatry unit. A methodcomparison design was used, and data were analyzed using the BlandAltman method. Outliers were removed, resulting in 39 participants for analyses of systolic readings and 41 participants for diastolic readings. Paired t tests revealed a significant difference in manual versus automatic systolic BP readings p View Show abstract Comparison of Blood Pressure Measured with SPRINT and Standard Office based Article Fulltext available Jul 2020 Armin Attar Alireza Abdi View Differences in Manual and Automatic Blood Pressures in Telemetry Patients With Atrial Fibrillation Article Aug 2013 Melissa Collins Adam Cummings Casie Skaggs Sherill Nones Cronin The purpose of this study was to evaluate the differences between automated and manual blood pressure results in patients with atrial fibrillation. Data collection took place on 3 telemetry units at a 519bed community hospital. Findings indicate that there are statistically significant differences between automated and manual blood pressures in this patient population; however, the results are not clinically significant.

View Show abstract Oscillometric and auscultatory blood pressure measurement in the assessment of blood pressure and target organ damage Article Nov 2013 Jouni K Johansson Pauli Puukka Antti Jula The objective of this study was to elucidate the usefulness of both the oscillometric blood pressure OBP and auscultatory blood pressure ABP measurement technique in the assessment of blood pressure BP and target organ damage in the general population. We studied a sample of the Finnish adult population aged 2574 years. Four hundred and eightyfour study participants underwent a health examination including measurements of 24h urine albumin, echocardiographic variables of the left ventricle, intima media thickness and pulse wave velocity. OBP and ABP were measured simultaneously four times by beginning the OBP measurements in random order from the right or left arm and by switching the devices between hands after two measurements. Male sex, higher arm circumference and lower systolic BP were independent determinants explaining the greater difference between systolic OBP compared with ABP. Diabetes, higher arm circumference and higher pulse wave velocity were independent determinants explaining greater difference between diastolic OBP compared with ABP. The correlations of target organ damage between OBP and ABP were equally good. At population level OBP and ABP measurements yielded similar results in relation to BP level and the indicators of target organ damage, probably due to the simultaneous and controlled measurement protocol, and to the sample of participants from the general population. It is, however, recommendable to use either OBP or ABP measurements for individual patients to avoid unnecessary interdevice variability. The Guidelines for Drug Therapy in Pediatric Patients with

Cardiovascular Diseases JCS2012, by the Japanese Circulation Society, cite the stethoscopybased American guidelines.

The Guidelines for the Management of Hypertension JSH2009, by the Japanese Society of Hypertension, focus on Japanese data obtained from automated sphygmomanometry. The frequent use of automated sphygmomanometers in clinical practice implies that the JSH2009 guidelines might be better; however with strict low reference values for the diastolic phase, overtreatment may result. Only the Japanese Circulation Societys guidelines include a therapeutic strategy, and the Chronic Kidney Disease CKD Guide, CKD Guidelines, and school urinary screening tests all cite these guidelines on stethoscopybased blood pressure determination. Stethoscopy should be conducted during a medical examination; however, due to limited time in clinical practice, most physicians use automated sphygmomanometers while nevertheless relying on the Japanese Circulation Society reference valueswhich are stethoscopybased. To find a compromise, we compared reference values in Japan with those from South Korea automated sphygmomanometerbased and those from the United States stethoscopybased. Moreover, we examined the results of recent accuracy tests for automated sphygmomanometers. Although the JSH2009 reference values for the systolic phase were consistent with those in the United States stethoscopybased, the reference values for the diastolic phase were lower. We observed the same tendency when comparing JSH2009 reference values with those in South Korea automated sphygmomanometerbased. Conversely, there were only small differences between automated sphygmomanometry and mercury measurement, and we found it was possible to substitute the values from automated sphygmomanometry for stethoscopy. A largescale study that takes into account patient height, measurement method, and treatment criteria is required to establish appropriate reference values.

Even if automated sphygmomanometry is used until appropriate values are established, we consider the criteria provided in the American guidelines as appropriate. View Show abstract Performance and Evaluation of Smartphone Based Wireless Blood Pressure Monitoring System Using Bluetooth Article Dec 2016 IEEE SENS J Mandeep Singh Neelu Jain In medical practice, blood pressure is intensively studied parameter and often measured for diagnosis at primary healthcare level. In this paper, the stateoftheart Bluetooth technology has been used for designing an innovative wireless blood pressure monitoring system to display the systolic and diastolic blood pressure values on Androidbased smartphone. A pilot study was undertaken on 12 healthy subjects to validate the performance of developed prototype by comparing with OMRON HEM7111 and mercury sphygmomanometer. Comparison shows an accuracy of 98.63% and 97.13% with OMRON HEM7111 and 98.99% and 98% with mercury sphygmomanometer for systolic blood pressure and diastolic blood pressure, respectively. Bias value in BlandAltman plots gives good level of agreement within 95% confidence limits. The developed prototype device mean and standard deviation of differences is less than 5 and 8 mmHg, respectively, and it fulfills the recommendation criteria as per the requirement of the Association for Advancement of Medical Instruments protocol. View Show abstract Sources of inaccuracy in the measurement of adult patients resting blood pressure in clinical settings a systematic review Article Dec 2016 Noa Kallioinen Andrew Hill Mark Horswill Marcus O Watson Background. To interpret blood pressure BP data appropriately, healthcare providers need to be knowledgeable of the factors that can potentially impact the accuracy of BP measurement and contribute to variability between measurements. A systematic review of studies quantifying BP measurement inaccuracy.

Medline and CINAHL databases were searched for empirical articles and systematic reviews published up to June 2015. Empirical articles were included if they reported a study that was relevant to the measurement of adult patients' resting BP at the upper arm in a clinical setting e.g. ward or office; identified a specific source of inaccuracy; and quantified its effect. Reference lists

and reviews were searched for additional articles. A total of 328 empirical studies were included. They investigated 29 potential sources of inaccuracy, categorized as relating to the patient, device, procedure or observer. Significant directional effects were found for 27; however, for some, the effects were inconsistent in direction. A single BP value outside the expected range should be interpreted with caution and not taken as a definitive indicator of clinical deterioration. Where a measurement is abnormally high or low, further measurements should be taken and averaged. Wherever possible, BP values should be recorded graphically within ranges. This may reduce the impact of sources of inaccuracy and reduce the scope for misinterpretations based on small, likely erroneous or misleading, changes. View Show abstract Comparative Analysis and Accuracy of a Devised Automated Non Invasive Blood Pressure Monitor Based on Oscillometric Method Article Fulltext available Jan 2017 N. Shahid Syed Muhammad Omair Muhammad Wasim Munir M. Z. Ul Haque Objectives This paper focuses on the evaluation of accuracy and reliability of previously designed oscillometric based Non Invasive Blood Pressure NIBP instrument by means of a comparative analysis with the standard cuff mercury sphygmomanometer based on auscultation. The analysis of means and bias values demonstrated that our designed oscillometric NIBP monitor underread all blood pressure values compared to mercury manometer.

A pvalue of View Show abstract To what extent can the chosen blood pressure measurement technique affect the outcomes of an observational survey. Article Sep 2019 Otto Mayer Jitka Seidlerova Marketa Materankova Jan Filipovsky Aim We analyzed to what extent measurement protocol influenced individual blood pressure BP and achievement of treatment target in patients with coronary heart disease. Results Perprotocol approach produced significantly p View Show abstract Comparison of Automated Oscillometric Versus Auscultatory Blood Pressure Measurement Article Aug 2010 Johanna Landgraf Stanley H Wishner Robert Kloner Most clinical offices rely on automated oscillometric devices to measure blood pressure BP, but the accuracy of this technique versus auscultatory determination using a mercury manometer is controversial. To assess the accuracy of automated oscillometric readings, BP was measured from the same site and cuff, in 337 consecutive patients seen in a routine cardiology office, using a simultaneous connection to an automated oscillometric and a mercury manometer technique. In conclusion, the mercury manometer technique resulted in consistently greater BP values than oscillometric devices. These findings have important clinical implications, including the concept that patients whose BP appears to be under control using the oscillometric technique might not be at their goal BP and might have been undertreated. View Show abstract A study on reliability and accuracy of digital and manual sphygmomanometers Jan 2000 2835 W F Chong C H P Tan S L R Yeo S S Ching L Cheng Chong W F, Tan C H P, Yeo S L R, Ching S S, Cheng L. A study on reliability and accuracy Singapore Nursing Journal 2000; 27 2835. Potter and Perry’s Fundamentals of Nursing 1 J Crisp Taylor Crisp J, Taylor C. Potter and Perry’s Fundamentals of Nursing. Sydney Mosby, 2001.