Claims

[Claim 1] A management system that manages a workflow relating to sterilization of a sterilization target,
wherein the workflow includes a plurality of stages that includes at least one of a packaging stage in which a set is formed by packaging one or more of the sterilization targets and a first indicator, a sterilization stage of subjecting the set to a sterilization process by a sterilization processing apparatus, and a using stage of using the one or more of the sterilization targets included in the set by determining an achievement degree of the sterilization process performed on the set using the first indicator of the set,
the first indicator includes a discoloration area whose color changes according to the achievement degree of the sterilization process, and
the management system includes:
management means for managing management information of the workflow including sterilization related information of the set that is associated with identification information of the set, wherein the sterilization related information of the set includes a determination result of the achievement degree of the sterilization process determined using the first indicator, and which of the stages of the workflow has been completed with respect to the set can be determined from sterilization related information of the set;
input means for inputting the sterilization related information of the set; and
notification means for performing, to a user based on the management information, a notification that work related to the workflow is not in a predetermined state, or a notification for preventing work related to the workflow from entering a predetermined state.

[Claim 2] The management system according to claim 1, wherein the input means includes reading means for reading the identification information of the set.

[Claim 3] The management system according to claim 1 or 2,
wherein the input means includes:
measurement means for measuring a color of the discoloration area of the first indicator; and
determination means for determining the achievement degree of the sterilization process based on a measurement result of the measurement

means.

[Claim 4] The management system according to any one of claims 1 to 3, wherein the identification information of the set is identification information given to the first indicator to be enclosed in the set.

[Claim 5] The management system according to claim 4, wherein the notification means determines a number of times used of the set, and if the number of times used of the set reaches an upper limit of the number of times used of the set, performs a first notification for indicating the user of discarding of the set.

[Claim 6] The management system according to claim 5, wherein the management means records cycle determination information indicating a relationship between the identification information given to the first indicator enclosed in the set in the packaging stage and the identification information given to the first indicator enclosed in the set in the packaging stage of a previous time or a next time with respect to the set as the sterilization related information of the set, and uses the cycle determination information for determining the number of times used of the set.

[Claim 7] The management system according to any one of claims 1 to 6, wherein the management means records information indicating a type of the set, a type of the first indicator enclosed in the set, and a type of the sterilization processing apparatus to be used in sterilization process of the set as the sterilization related information of the set, and
the notification means retains determination information indicating a combination between a type of the set, a type of the first indicator, and a type of the sterilization processing apparatus to be used in sterilization process of the set, and if the combination of the type of the set, the type of the first indicator enclosed in the set, and the type of the sterilization processing apparatus to be used in the sterilization process of the set that is indicated by sterilization related information of the set does not match the combination indicated by the determination information, performs a second notification for notifying the user of the fact of not matching.

[Claim 8] The management system according to any one of claims 1 to 7, wherein the management means records information indicating a log output by the sterilization processing apparatus used in the sterilization process of the set as the sterilization related information of the set, and the notification means retains setting information indicating a rec-

ommended setting of the sterilization processing apparatus corresponding to a type of the set, determines whether the sterilization process performed on the set has been performed in the recommended setting based on the log indicated by the sterilization related information of the set, and upon determining that the sterilization process performed on the set has not been performed in the recommended setting, performs a third notification for notifying the user of a fact that the sterilization process performed on the set has not been performed in the recommended setting.

[Claim 9] The management system according to any one of claims 1 to 8, wherein the management means records a determination result of the achievement degree of the sterilization process obtained by using a second indicator arranged inside the sterilization processing apparatus along with the set as the sterilization related information of the set, and the notification means, if the sterilization related information of the set indicates that the achievement degree of the sterilization process has not reached a predetermined achievement degree, which is indicated by the determination result obtained by using the second indicator, performs a fourth notification for notifying the user of a fact that the set cannot be used in the using stage.

[Claim 10] The management system according to any one of claims 1 to 9, wherein the management means, upon receiving an input of date and time at which the sterilization process has been performed on the set, sets a use-by date until which the set can be used in the using stage based on the input date and time, and records the use-by date as the sterilization related information of the set.

[Claim 11] The management system according to claim 10, wherein the notification means, if the set is present, of the stored sets that have been subjected to the sterilization stage and have not been subjected to the using stage, with respect to which a period until the use-by date is less than or equal to a predetermined period, which is determined based on the sterilization related information of the set, performs a fifth notification for notifying the user of a fact that the set with respect to which a period until the use-by date is less than or equal to the predetermined period is present.

[Claim 12] The management system according to claim 10, wherein the notification means determines a number of the sets, of the stored sets that have been subjected to the sterilization stage and have not been

subjected to the using stage, with respect to which a period until the use-by date is less than or equal to a predetermined period, based on the sterilization related information of each set, and if the number of sets with respect to which the period until the use-by date is less than or equal to the predetermined period is larger than a first predetermined number, performs a fifth notification for notifying the user of a fact that the number of sets with respect to which the period until the use-by date is less than or equal to the predetermined period is larger than the first predetermined number.

[Claim 13] The management system according to any one of claims 1 to 12, wherein the notification means obtains a number of the stored sets that have been subjected to the sterilization stage and have not been subjected to the using stage for each type of the set based on the sterilization related information of each set, and if a type of the set with respect to which the number of the stored sets is less than a second predetermined number is present, performs a sixth notification for notifying the user of a fact that a type of the set with respect to which the number of the stored sets is less than the second predetermined number is present.

[Claim 14] The management system according to claim 13, further comprising reception means for receiving reservation of the set to be used in the using stage,
wherein the notification means, if the reservation cannot be satisfied with the stored sets, performs a seventh notification for notifying the user of a fact that the reservation cannot be satisfied with the stored sets.

[Claim 15] The management system according to any one of claims 1 to 14, wherein the management means records information indicating an operator of each stage in the workflow as the sterilization related information of the set, and
the notification means, when information indicating an operator of a stage of the workflow is recorded, if information indicating an operator of a stage upstream of the stage in the workflow is not recorded in the sterilization related information of the set, performs an eighth notification notifying the user of a fact that information indicating an operator of a stage upstream of the stage is not recorded.

[Claim 16] The management system according to any one of claims 1 to 15, wherein the notification means, when information indicating a

confirmer of work of each stage of the workflow as the sterilization related information of the set, and

the management means, when information indicating a confirmer of work of a stage of the workflow is recorded, if information indicating a confirmer of work of a stage upstream of the stage in the workflow is not recorded in the sterilization related information of the set, performs a ninth notification notifying the user of a fact that information indicating a confirmer of work of a stage upstream of the stage is not recorded.

[Claim 17] The management system according to any one of claims 1 to 15, wherein the management means records, with respect to at least one stage of the workflow, information indicating a plurality of confirmers of a work, and respective confirmation results by the plurality of confirmers as the sterilization related information of the set, and

the notification means, if at least one of confirmation results by the plurality of confirmers with respect to the at least one stage is "NG", performs a ninth notification notifying the user of a fact that the at least one stage is "NG".

[Claim 18] The management system according to any one of claims 1 to 17, wherein the management means, upon performing the notification, records the notified contents to the management information, and

the management system further includes presenting means for presenting an analysis result of the management information for suppressing work relating to the workflow from entering the predetermined state.

[Claim 19] The management system according to claim 7,

wherein the management means records information indicating an operator that has input information indicating a type of the set, a type of the first indicator enclosed in the set, and a type of the sterilization processing apparatus to be used in the sterilization process of the set, and information indicating whether or not a combination that does not match a combination indicated by the determination information has been input, as the sterilization related information of the set, and

the management system further includes presenting means for presenting the user of a change in a number of times, for each operator, that a combination that does not match a combination indicated by the determination information has been input based on the sterilization related information of the set.

[Claim 20] The management system according to claim 5 or 6,
wherein the management means records information indicating a set with respect to which the first notification has been made, and
the management system further includes presenting means for presenting the user of a change in a number of sets, for each type of the set, that the notification means has notified of discarding based on the management information.

[Claim 21] The management system according to claim 12,
wherein the management means records, to the sterilization related information of the set with respect to which the fifth notification has been made, a fact that the fifth notification has been made with respect to the set, and
the management system further includes presenting means for presenting the user of a change in a number of sets, for each type of the set, with respect to which the fifth notification has been made based on sterilization related information of the set.

[Claim 22] The management system according to claim 13,
wherein the management means records, for each type of the set, a number of times that the sixth notification has been made for each predetermined period to the management information, and
the management system further includes presenting means for presenting the user of a change in a number of times, for each type of the set, that the sixth notification has been made based on the management information.

[Claim 23] The management system according to claim 10,
wherein the management means, if the set is present, of the stored sets that have been subjected to the sterilization stage and have not been subjected to the using stage, with respect to which a period until the use-by date is less than or equal to a predetermined period, records a fact that a period until the use-by date is less than or equal to a predetermined period to the sterilization related information of the set, and record a number of times, for each type of the set, that the number of the stored sets has decreased below a predetermined number, for each predetermined period, to the management information, and
the management system obtains, for each type of the set, a number of the sets with respect to which a period until the use-by date has become less than or equal to a predetermined period, for each of the predetermined periods, based on management information of the set, obtains

a change in a number that is obtained, for each type of the set, by adding a number of sets with respect to which a period until the use-by date has become less than or equal to a predetermined period and a number of times that the number of stored sets has decreased below a predetermined number by applying different weights, and further includes presenting means for presenting the user of the change in the obtained number.

[Claim 24] An information processing apparatus comprising:
access means for accessing an apparatus having management information regarding a workflow including a plurality of stages that includes at least one of a packaging stage in which a set is formed by packaging one or more of sterilization targets and a first indicator, a sterilization stage of subjecting the set to a sterilization process by a sterilization processing apparatus, and a using stage of using the one or more of the sterilization targets included in the set by determining an achievement degree of the sterilization process performed on the set using the first indicator of the set, wherein the management information includes sterilization related information of the set that is associated with identification information of the set, the sterilization related information of the set includes a determination result of the achievement degree of the sterilization process determined using the first indicator, and which of the packaging stage, the sterilization stage, and the using stage has been completed with respect to the set can be determined from the sterilization related information of the set; and
notification means for performing, to a user based on the management information, a notification that work related to the workflow is not in a predetermined state, or a notification for preventing work related to the workflow from entering a predetermined state.

[Claim 25] The information processing apparatus according to claim 24,
wherein the access means, upon performing the notification, notifies the apparatus having the management information of notified contents so that the contents are recorded in the management information, and the information processing apparatus further includes presenting means for presenting an analysis result of the management information for suppressing work relating to the workflow from entering the predetermined state.

[Claim 26] A computer readable storage medium storing a program, the program causing a computer to function as the information processing apparatus

according to claim 24 or 25.

[Claim 27] A management method in a management system that manages a workflow relating to sterilization of a sterilization target
wherein the workflow includes a plurality of stages that includes at least one of a packaging stage in which a set is formed by packaging one or more of the sterilization targets and a first indicator, a sterilization stage of subjecting the set to a sterilization process by a sterilization processing apparatus, and a using stage of using the one or more of the sterilization targets included in the set by determining an achievement degree of the sterilization process performed on the set using the first indicator of the set,
the first indicator includes a discoloration area whose color changes according to the achievement degree of the sterilization process, and
the management method includes:
managing, by recording, management information of the workflow including sterilization related information of the set that is associated with identification information of the set, wherein the sterilization related information of the set includes a determination result of the achievement degree of the sterilization process determined using the first indicator, and which of the stages of the workflow has been completed with respect to the set can be determined from the sterilization related information of the set; and
notifying a user, based on the management information, of a fact that work related to the workflow is not in a predetermined state, or of a notification for preventing work related to the workflow from entering a predetermined state.