



Building Fire Risk Assessment Jatinegara District Health Center East Jakarta

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ABSTRACT

Public health center Subdistrict Jatinegara potential experience fire building because exists activities that can cause fire building , such as use fires in laboratories and kitchens as well as use of B3 with properties easy ignite or explode in parts generator maintenance . This research aims to find out evaluation risk fire building Public health center Subdistrict Jatinegara East Jakarta 2022 with an identification process danger , identification risk , analysis risk and evaluation risk . Evaluation risk fire carried out at the Community Health Center Subdistrict Jatinegara in September-December 2022 using qualitative methods referring to AS/NZS 4360 of 2004. From the identification results danger is known that source the dangers that exist in the health center Subdistrict Jatinegara originate from tools and auxiliary materials Work as well as work processes . From the identification results risks with the JSA form are known that danger the risky cause wound burnt , deformed still until death . From the results of the analysis risk obtained conclusion that level risk fire at the health center Subdistrict Jatinegara are in the risk category extreme , and after done evaluation risk , the results obtained are: risk fire at the health center Subdistrict Jatinegara is very high or in the red zone and can be concluded that unacceptable risk . The researcher 's suggestion to give is to control the dangers that exist in the health center Subdistrict Jatinegara needs a hierarchy of control, routine do simulation fire involving all elements in the Puskesmas Subdistrict Jatinegara and routine do supervision to system protection existing fire . _

Keywords : Fire building ; Evaluation risk fire

INTRODUCTION

Fire is something events that are undesirable by the parties anywhere and very difficult to predict . Fire is something disaster resulting from its existence fire . Which is a disaster fire the what we can be certain of is give rise to loss (ILO, 2018). Losses _ from fire can be loss lives (deaths and injuries), losses in the form of health (health care , impacts on health consequences fire), loss assets (money, property), losses buildings , equipment , materials, products, cessation of production processes and activities work , pollution environment , impact social and reputation (Fatma Lestari et al., 2021).

Fire building Still often happens all over the world. Based on report *The Center of Fire Statistics*

(CFS) of the International Association of Fire and Rescue Services (CTIF) has there were 3,082,565 cases fire building in 2019 which was taken from 34 countries with fatalities as many as 19,187 lives and 68,217 people were injured (Brushilinsky et al., 2021). Most fires _ occurred in the USA with 1,291,500 cases with 3,704 fatalities . Then countries with cases fire the most second is Russia with 471,426 cases fires and 8,559 fatalities , while Japan occupy countries with cases third fire in the world with 37,683 with 1,486 fatalities (NFPA, 2019).

Fire data in Indonesia collected by the National Prevention Agency Disasters (BNPB), from 2011 to 2015 there were 979 incidents fire (BNPB, 2016). Fires in Jakarta in particular , based on data released by the Management Service Fire DKI Jakarta Province has happen fire building as many as 196 cases in 2021 .(Dinas Penanggulangan Kebakaran dan Penyelamatan Provinsi DKI Jakarta, 2022)

Community Health Center (Puskesmas) as a building with a function social own a number of danger in their activities serve society . Dangers at the Community Health Center some of which are dangerous mechanical , dangerous electricity , dangerous physics , danger biology and danger chemistry . Dangers that is very possible trigger happen fire building Community Health Center .

This is because activity officer Community health centers that use it source heat like fire used in laboratories for examination bacteria stand acid (BTA) , cooking food for patient Mother cared for birth stay and behavior visitors Health centers that are difficult to control could be spark happen fire . Apart from activities that have potential cause fire , some materials such as documents and use of chemicals especially hazardous and toxic materials (B3) with properties easy light up be a supporting material happen fire .

The impact caused consequence fire besides loss physical like damage a number of medical devices , reagents support , drugs also cause non- material losses , such as activities public health services stop , trauma to the injured victim consequence fire even until lost life . Fires also impact function _ from something buildings , it can even result it stopped production or function service as well as impact on the environment around it that could be happen propagation from fire building .

Latest data related happen fire building Community Health Centers in Indonesia from 2021 to December 2022 have happen fire 2 times . Fire occurred at the Community Health Center Gapura , Sumenep in August 2021. Fire originate from splash fire at the connection cables on top of buildings office Community Health Center . Loss estimated reached IDR 75 million (Pemerintah Kabupaten Sumenep, 2021). Incident fire latest occurred at the health center Sembilan Island which is in the village Harapan Island Regency Sinjai . Incident fire happened early Wednesday day on May 04, 2022 approx at 01.40 WITA it was scorching all over existing rooms and medical equipment (Pemerintah Kabuten Sinjai, 2022).

Based on Minister of Health Regulation number 43 of 2019 concerning Community Health Centers states that building the Community Health Center (Puskesmas) building must comply requirements , among others provide function security , comfort , protection safety and health (Kementerian Kesehatan, 2014). Apart from security , comfort , protection safety and health, according to Minister of Public Works Regulation number 26 of 2008 concerning System Technical Requirements Protection Fires in Buildings and Environments state that safety the community within the building and its environment must become consideration main specifically to danger fire , in order to be able to do activities , and improve its productivity as well as increase quality his life (Kementerian Pekerjaan Umum, 2008).

Summary Problem

Community Health Center Building Subdistrict Jatinegara potential experience fire because exists a number of activities that can cause fires such as activities in space health laboratory at the moment use fire for BTA checks and activities in the room kitchen like cooking food for patient Mother gave birth and had to be cared for stay . Apart from activities that have potential cause fire , some materials such as documents , B3 with properties easy lit can be a supporting material happen fire .

Community Health Center Building Subdistrict Jatinegara since the completion of renovations

in May 2019 until December 2022 never been done evaluation risk fire , so it is not yet known is building Public health center Subdistrict Jatinegara own risk low , medium or high happen fire building at the Community Health Center Subdistrict Jatinegara .

Question Study

1. How evaluation risk fire building at the Community Health Center Jatinegara District ?
2. How identification danger fire building at the Community Health Center Jatinegara District ?
3. How identification risk fire building at the Community Health Center Jatinegara District ?
4. How analysis risk fire building at the Community Health Center Jatinegara District ?
5. How evaluation risk fire building at the Community Health Center Jatinegara District ?

Research Objectives

General purpose

Know evaluation risk fire building Public health center Subdistrict Jatinegara East Jakarta 2022.

Special purpose

1. Knowing identification danger fire building at the Community Health Center Jatinegara District .
2. Knowing identification risk fire building at the Community Health Center Jatinegara District .
3. Knowing analysis risk fire building at the Community Health Center Jatinegara District .
4. Knowing evaluation risk fire building at the Community Health Center Jatinegara District.

Benefits of Research

For the Faculty of Public Health

The results of this research can add treasure public health science about evaluation risk fire building.

For Community Health Centers

The research results can be information in the assessment risk fire building at the Community Health Center Subdistrict Jatinegara.

For Students

This research is useful for implementing knowledge about evaluation risk fire building.

Scope _ Study

Evaluation risk fire building Public health center Subdistrict Jatinegara is an identification process risk fire building Public health center Subdistrict Jatinegara . Evaluation risk fire building needs to be done Because building Public health center Subdistrict Jatinegara potential experience fire because

exists using activities _ fire , use of hazardous and toxic materials (B3) with properties easy on and system protection fires that are not in accordance with Minister of Public Works Regulation number 26 of 2008.

Evaluation risk fire carried out at the Community Health Center Subdistrict Jatinegara in September-December 2022 using a qualitative method with steps evaluation risk that is identification danger , identification risk , analysis risk , and evaluation risks referring to AS/NZS 4360 of 2004.

RESEARCH METHODOLOGY

Framework This research is a process of assessment risks with modifications to the stage identification danger , this modification is used to adjust research with conditions in the field . At stage identification danger , done observation to source supporting danger _ creation fire , that is source heat , fuel source and oxygen or oxidizing agent .

Then stage identification risk done using _ Job Safety Analysis (JSA) theory in which the JSA form is filled out in a way interview deep to informant key as many as 1 person, informant main as many as 3 people and informants supporter as much as 1 person

Next is done analysis risk to determine big something reflected risks _ from likelihood / probability and severity / consequences resulting . _ Techniques used in analysis This risk is engineering qualitative , that is technique used _ matrix illustrating risks _ level from probability and severity expressed in the form range from risk low , medium, high and extreme .

stage is evaluation risk , that is do evaluation to risk is risk is acceptable or not . Concept of doing evaluation risk carried out with ALARP (as low as reasonably practicable).

RESULTS AND DISCUSSION

Identification Danger

Identification danger obtained researchers in a way interview deep together informant key , informant main and informant support for finding sources supporting danger _ happen fire . Based on interview results deep obtained information that source supporting danger _ happen fire at the health center Subdistrict Jatinegara is a tool and auxiliary material Work as well as work processes .

Source danger to tools and auxiliary materials Work among them found in the laboratory unit , the nutrition unit in charge part kitchen and parts generator maintenance . In the laboratory unit , source danger found in tools and auxiliary materials work used for BTA examination where the tool help BTA examination using fire as a means of heating BTA preparations and auxiliary materials Work form spirits used for fuel light spiritus . In the nutrition unit in charge part kitchen , source danger found is a tool help Work form gas stove used in the process of cooking food . In part generator maintenance , source danger found is an auxiliary material work used in the work process refueling generators that use diesel (B3 with properties easy ignite and explode).

Source danger to the work process among them found in the laboratory unit namely in the BTA examination , where in the BTA examination there is a heating process BTA preparation with lamp spiritus until smoke comes out . At this stage , officers interact with fire through use light spiritus . Source Dangers in other work processes are found in the nutrition unit in charge part kitchen . In the drafting process Cook cooking food _ in accordance with specified standards officer nutrition , interpreter Cook interact with fire hammering gas stove . Meanwhile in section generator maintenance , in the work process filling fuel officers interacts with B3 , namely diesel.

The researcher 's conclusion get on stage identification danger is there 3 units that have source imminent danger _ impact on fires , namely the laboratory unit , the nutrition unit in charge part kitchen and parts generator maintenance . Source danger from these three units are tools and auxiliary materials Work as well as work processes . In the laboratory unit , there are: tools and auxiliary

materials Work as well as the work processes that use it fire and easy materials light up namely in the work process BTA examination . In part kitchen found tool help work and work processes that use fire , that is, the work process processing food . In the generator maintenance unit there are auxiliary materials work and work processes that use B3 with properties easy ignite or explode namely diesel fuel in the generator maintenance process .

Based on interview results in depth with informants key , main and supporting found exists difference information obtained . _ For informants key and third informant main The same triangulation results were obtained . This is because informant key Already collect Material Safety Data Sheets (MSDS) from each unit so informant the key can find out which units have it procedure dangerous work and tools or auxiliary materials especially can cause flames or fires . _ Meanwhile, the results of triangulation on informants key , main and supporting obtained exists difference . This is because informant supporters don't know definitely all the work there is Public health center Subdistrict Jatinegara . **Identification risk**

At stage identification risk , researcher do interview in depth , study documents and observations to find steps work that has risk related fires in laboratory units , nutrition and generator maintenance . Stage identification this risk , researchers using the Job Safety Analysis (JSA) method which makes it easier researchers in identifying risks in laboratory units , nutrition and generator maintenance .

Based on interview results in depth with informants key , main and supporting is known that one _ step Work BTA examination , processing food own risk exposed to flame so that result wound burn until death , while in part generator maintenance is available risk exposed to B3 which if interact with sources hot will causing a fire until fire .

Interview deep in level identification risk done researchers with informants key , main and supporting by asking two questions . The first question is " According to you , steps What only those contained in the procedures used fire and B3?". Quote from the results of the interview in depth with informants Key , main and supporting are as follows :

"For details steps Work I don't know, bro" (Informant key)

"If for BTA staining we use the SOP for BTA examination , it looks like this . Officer use PPE, supplies placed on the shelf coloring ., dripping carbol fuchsin first reagent , heat with a lamp spirtus until smoke coming out , ready rinse with running water , officer dripping with acid alcohol , officer rinse Prepare with running water again, officer pouring coloring both methylene blue

After that , rinse again dried (Informant main 1→→)

" Officer Use PPE (apron , cover hair and sarong hand), then interpreter Cook prepare tools and materials, interpreter Cook wash hands before touching food , then _ interpreter Cook prepare food ingredients and process food ingredients , then interpreter Cook cooking food _ in accordance with specified standards officer nutrition and food presented to patients " (Informant main 2)

" Checking tank in the engine the generator once a month , the generator is warmed up twice a week and for refueling , we ask for a voucher from the department procurement , then purchase _ gas to the designated place , then filled into the generator tank with a tool help funnel so it doesn't spill " (informant main 3)

For use fire must be kept away from source electricity or other easy materials is on fire and there must be a fire extinguisher nearby . Use of B3 by storing B3 in a safe place , using cupboard B3, stored based on characteristics and types and to use appropriate PPE in its use according to instructions its use . And for management waste : stored in accordance type waste and characteristics . Then disposal use 3rd party . (informant supporter)

Question the second is " According to you , whether SOPs for procedures are available work that uses fire and B3?". Following answer informant key , main and supporting :

" It's rich there, bro, I am just hold the MSDS just do it " (Informant key)

"Yes sir, this is our SOP , SOP for BTA examination " (Informant main 1→→)

"Yes, the SOP is included in the processing SOP food " (Informant main 2)

" There is an SOP for generator maintenance , for B3 storage it is in the section annoyed " (informant main 3)

"Not yet " (informant supporter)

Statement the also supported by the results of the study explaining document _ that of course there is step work that requires it officer interact with fire and B3 in the working process.

Identification Danger

From the results of the interview in - depth and observations made researchers with informants key , informant main and informant supporters , it is known the dangers that exist in the health center Subdistrict Jatinegara originates from the work process among them found in the laboratory unit namely at the BTA examination , at the nutrition unit in charge part kitchen namely in activities cooking food ingredients and on the part Generator maintenance is in the work process fuel filling .

Apart from the work process , there are dangers at the Community Health Center Jatinegara sourced from tools and auxiliary materials work . Tools _ dangerous work _ give rise to fire at the health center Subdistrict Jatinegara is the use fire in the laboratory to ignite light spirits and in the nutritional unit for cooking food for Mother giving birth , meanwhile Another danger is auxiliary materials work in the section _ laboratory that is use spirit for BTA examination and generator maintenance , namely use of B3 with properties easy lit (solar).

From the identification results danger that , it can be concluded that Public health center Subdistrict Jatinegara own danger fire building . This is supported by theory triangle fire . According to Ramli, a fire could occur Because the meeting of 3 elements , including fuel , oxygen and sources hot . When three element the interact in a way Keep going continuously so will formed fire . Without there is one element the fire will not occurred (Ramli, 2010).

The efforts that have been made done Public health center Subdistrict Jatinegara to control dangers the One of them is by making standard operational procedures (SOP), provide system protection fire extinguishers such as fire extinguishers, sprinklers , fire alarms and smoke detectors in all units and provide access to fire extinguisher fire If fire happen as well as make means rescue the soul is like a path evacuation , fireproof doors and points _ gather .

Efforts _ the Already in accordance with Minister of Health Regulation number 43 of 2019 concerning Community Health Centers states that building the Community Health Center (Puskesmas) building must comply requirements , among others provide function security , comfort , protection safety and health (Ministry of Health, 2014). However according to report Rahman's apprentice , several efforts the still not in accordance with Minister of Public Works Regulation number 26 of 2008 concerning System Technical Requirements Protection Fires in Buildings and Environments (Rahman, 2022).

Study related identification danger fire building carried out by Fika Murti Utami in 2020 with the title study Evaluation Risk High-rise Building Fire at the Golden Market Jember Shopping Center obtained the following results center Golden Market Jember shopping is fulfilling element triangle fire . Other related research identification danger fire set by Pratiwi Passa entitled Analysis Risk The results

of the fire in the New Building X in 2019 were : new building X meets element triangle fire .

Identification Risk

From the results of the interview in depth with 3 informants main and observations in 3 units, are known There are 2 procedures with risks experience wound burnt , deformed still until death that is procedure BTA examination in laboratory units and procedures processing food as well as 1 risky procedure exposed to B3 with properties easy ignite or explode with risk fire If interact with sources heat , irritation , carcinogen and damage environment .

According to Ramli, factors reason fire among them are factors man that is do containing work _ gas and fire sources and factors technical that is equipment cooking and placing ingredients is easy burning (Ramli, 2010) can also increase risk fire building . Second factor These can be found at the Community Health Center Subdistrict Jatinegara so it can improve possibility happen fire building .

Study related identification risk fire building carried out by Sika Widya Mustika and the team with the title study Evaluation Risks of Multi-Storey Buildings obtained conclusion in the form of extreme risk categories including management protection in management , procedures , planning as well as visitors (Widya Mustika et al., 2018). Other related research identification risk fire building carried out by Inneke Rizma Amalia and the team with the title study Evaluation Risk Fire and Evaluation System Protection Fire Active . Case Study : Fabrication and Shipbuilding Service Company DKP Department gets conclusion system protection The available fires at DKP are still not sufficient , so additional fires are needed APAR and hydrant installations (Rizma Amalia et al., 2020).

Analysis Risk Fire

The result of analysis risk fire building at the Community Health Center Subdistrict Jatinegara based on matrix AS/NZS 4360 risk in 2004 is extreme or in the red zone . This means opportunity happen very high fire .

Analysis results risk fire the buildings in the lab and nutrition units are tall or in the orange zone, while in the section generator maintenance is medium or in the yellow zone . This means risk happen fire in 3 units high .

According to Ramli, Analysis risk intended to determine big something risks taking into account possibility occurrence (probability) and magnitude the consequences (severity / consequences) (Ramli, 2020). There are several techniques that can be used in analysis risks , including technical _ qualitative , semi- quantitative and technical techniques quantitative (Ramli, 2020).

Study related analysis risk fire building carried out by Fika Murti Utami in 2020 with the title study Evaluation Risk High-rise Building Fire at the Golden Market Jember Shopping Center obtained the following results center Golden Market Jember shopping has level risk fire high . Other related research analysis risk The fire was set by Prasetya Widadi entitled Analysis Risks and Systems Countermeasures The results of the fire at Jakarta Hospital in 2015 were : the Hospital building has characteristics different from Other buildings include properties _ diverse residents , levels _ high panic , diverse activities and uses _ _ easy ingredients _ burnt relatively high , for that it is necessary system protection complete and in accordance with standards . _

Based on regulation Minister of Public Works Regulation number 26 of 2008 concerning System Technical Requirements Protection Fires in Buildings and Environments state that safety the community within the building and its environment must become consideration main specifically to danger fire , in order to be able to do activities , and improve its productivity as well as increase quality his life (Ministry of Public Works, 2008).

To reduce risk fire , then it needs to be done action elimination is like eliminating fire as a tool help work and B3 with nature easy ignites or burns as an auxiliary agent work , do action substitution is like replacing fire with other safer equipment , do control technique by preparing APAR in all units that use it fire and B3 as tools and auxiliary materials work , do control administratively by creating SOPs and distributing these SOPs to all units and carrying out security workers by using PPE appropriate to the risk his job .

Evaluation Risk

Risk fire at the health center Subdistrict Jatinegara in a way general is very high or in the red zone , meanwhile risks that exist in laboratory units , nutrition and sections generator maintenance is high or in the yellow zone to orange.

According to Fatma, evaluation risk is a process that is carried out after operate analysis risk , this process is used to determine risk What only those who need it special mitigation and how priority mitigation , comparing level risk to standards that have been specified , target level risk , and other criteria (Fatma Lestari et al., 2021).

According to AS/NZS 4360 of 2004, risks are in the red zone then it can be concluded that unacceptable risk _ except in certain circumstances , whereas risk in the yellow zone until orange can be concluded that the risk is tolerable (Australia/New Zealand Standard, 2004).

Study related evaluation risk fire building carried out by Fika Murti Utami in 2020 with the title study Evaluation Risk High-rise Building Fire at the Golden Market Jember Shopping Center obtained the following results center Golden Market Jember shopping is included in the red zone or cannot be tolerated . Other related research evaluation risk fire carried out by Syarifudin Arif entitled Analysis Study Countermeasures Fire at RSUD DR. M. Ashari Pemalang in 2015 obtained the following results management countermeasures fire at RSUD DR. M Ashari can be said enough .

Based on regulation Minister of Public Works Regulation number 26 of 2008 concerning System Technical Requirements Protection Fires in Buildings and Environments state that manager building obliged to do efforts that need to be made by the parties related to implementation supervision nor control from stage planning development building building until after _ happen fire at some point building buildings and their environment (Ministry of Public Works, 2008).

Suggestions that researchers can get give related evaluation risk is necessary supervision and maintenance to system protection fires , not only in the system protection active such as fire extinguishers and sprinklers and heat detectors, but also on systems protection other fires such as facilities rescue soul , access extinguisher fires and systems protection passive . Researchers also provide related suggestions importance distribute the SOP for using APARs to all units that have APARs in their rooms .

CONCLUSION

1. Danger fire at the health center Subdistrict Jatinegara sourced from work processes , tools and auxiliary materials work in the service _ laboratory , nutrition and generator maintenance
2. At the Community Health Center Subdistrict Jatinegara There are 2 procedures with risks experience wound burnt , deformed still until death that is procedure BTA examination in laboratory units and procedures processing food as well as 1 risky procedure exposed to B3 with properties easy ignite or explode with risk fire If interact with sources heat , irritation , carcinogen and damage environment yeah procedure generator maintenance .
3. Analysis results risk obtained that result level risk fire at the health center Subdistrict Jatinegara is extreme (red), while in the laboratory and nutrition units obtained high yields and in parts generator maintenance obtained level results risk is medium (yellow and orange).
4. Evaluation results risk fire at the health center Subdistrict Jatinegara is a risk Building fires are very high and unacceptable , whereas in laboratory units , generator nutrition and maintenance is sufficient high and necessary reduction risk fire .

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